DRAFT REMEDIAL INVESTIGATION WORK PLAN

INGRAHAM STREET LOGISTICS
BROOKLYN, NEW YORK
BCP Site No. C224393

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CERTIFICATION

I, Jason J. Hayes, certify that I am currently a Qualified Environmental Professional as defined in Title 6 of the official compilation of New York Codes, Rules, and Regulations (NYCRR) Part 375 and that this Remedial Investigation Work Plan (RIWP) was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the New York State Department of Environmental Conservation (NYSDEC) Division of Environmental Remediation Technical Guidance for Site Investigation and Remediation (DER-10).

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Jason J. Hayes, P.E., LEED AP

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1.0 INTRODUCTION

This Remedial Investigation Work Plan (RIWP) was prepared on behalf of 450 Johnson Ave Brooklyn LLC for the property located at 450 Johnson Avenue in the East Williamsburg neighborhood of Brooklyn, New York (the site). 450 Johnson Ave Brooklyn LLC (the Volunteer) is enrolled in the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) pursuant to the Brownfield Cleanup Agreement (BCA) executed on May 29, 2024.

The objective of the Remedial Investigation (RI) is to investigate and characterize the nature and extent of environmental conditions at the site and to evaluate whether any contamination is emanating from the site. The RI will generate a data set sufficient to perform a qualitative on- and off-site human health exposure assessment and to evaluate remedial alternatives. This RIWP was developed in accordance with the process and requirements identified in the NYSDEC Division of Environmental Remediation (DER)-10 Technical Guidance for Site Investigation and Remediation (May 2010); NYSDEC Sampling, Analysis and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Under NYSDEC's Part 375 Remedial Programs (April 2023) (NYSDEC PFAS Guidance); and the New York State Department of Health (NYSDOH) "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" (October 2006, with updates) (NYSDOH Decision Matrices).

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2.0 SITE BACKGROUND

2.1 Site Description

The site is approximately 35,000 square feet (approximately 0.8 acres) in area, located in the East Williamsburg neighborhood of Brooklyn, New York and is identified as Block 2992, Lot 17 on the Brooklyn Borough Tax Map. The site is in the middle of the city block bound by Johnson Avenue to the north, Porter Avenue to the east, Ingraham Street to the south, and Knickerbocker Avenue to the west, and has 200 feet of frontage along Johnson Avenue and 150 feet of frontage along Ingraham Street. The English Kills, a tributary of Newtown Creek, is located approximately 250 feet north of the site. A site location map is provided as Figure 1 and a site plan is provided as Figure 2.

The site is developed with three inter-connected buildings and a parking lot:

- A two-story, 2,500-square-foot commercial warehouse and office building; and a one-story, 7,500-square-foot warehouse currently operated by All Season Restoration, Inc. (dba Servpro, a cleaning and restoration contractor);
- A one-story, 20,000-square-foot commercial warehouse, currently operated by Simply Stino's Inc. (a beverage distributor); and
- A 5,000 square-foot asphalt-paved parking lot, currently used by Simply Stino's Inc.

A sewer easement for a 90-inch-diameter sewer exists on the western part of the site, transecting the site from Johnson Avenue to Ingraham Street. The New York City Department of Environmental Protection (NYCDEP) standard width for sewer easements is typically 15 feet on either side of the sewer; however, the easement was recorded prior to the formation of the NYCDEP and the city entity that is referenced in the easement text is the Brooklyn Borough President's Office.

According to the New York City Planning Commission (NYCPC) Zoning Map 13b, dated March 19, 2024, the site is located in an M1-2 manufacturing area. An M1-2 area is characterized by light industry such as woodworking and auto repair shops, and often serves as a buffer between manufacturing and adjacent residential or commercial areas. Current and future land uses at the site are consistent with this zoning designation.

2.2 Surrounding Property Land Use

The site is located in a mixed-use area with multi-story commercial, light industrial and residential buildings. The following is a summary of surrounding property use:

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Direction	Adjoining Properties	Surrounding Properties
North	Johnson Avenue followed by a parking lot and the southernmost edge of Newtown Creek (English Kills)	Parking lots, Newtown Creek, multi-story commercial buildings
East	One four-story commercial/industrial use building	Multi-story commercial and industrial buildings
South	Ingraham Street followed by two two-story industrial buildings	Multi-story commercial, industrial, and residential buildings
West	A two-story industrial building	Multi-story commercial, industrial, and residential buildings

Public infrastructure (storm drains, sewers, and underground utility lines) exists within the streets surrounding the site. A land use map showing the adjacent and surrounding properties is provided as Figure 3.

Land use within a half-mile radius includes residential, commercial, light industrial and institutional uses and park land. The nearest ecological receptor is the English Kills, a tributary of Newtown Creek, located approximately 250 feet north of the site. Sensitive receptors, as defined in DER-10, located within a half-mile of the site include those listed below:

Number	Name (Approximate distance from site)	Address
1	Peter Jay Sharp Health Center (approx. 0.09 miles east of the site)	89 Porter Avenue Brooklyn, NY 11237
2	Bethany Christian Church (approx. 0.14 miles southeast of the site)	42 Porter Avenue Brooklyn, NY 11237
3	La Pena Pentecostal Church (approx. 0.19 miles southwest of the site)	34 Morgan Avenue Brooklyn NY, 11237
4	Justice Gilbert Ramirez Park (approx. 0.21 miles southwest of the site)	62 White Street Brooklyn NY, 11206
5	La Finca Community Garden (approx. 0.26 miles south of the site)	1036 Flushing Avenue Brooklyn NY, 11237
6	PS145 (approx. 0.38 miles southwest of the site)	100 Noll Street Brooklyn, NY 11206

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7	Bushwick United HDFC 2 (approx. 0.38 miles south of the site)	77 Wilson Avenue Brooklyn, NY 11237
8	Williamsburg Charter High School - K473 (approx. 0.39 miles southwest of the site)	198 Varet Street Brooklyn, NY 11206
9	I.S. 349 Math, Science & Tech. (approx. 0.42 miles south of the site)	35 Starr Street Brooklyn, NY 11221
10	Young Women's Leadership School of Brooklyn (approx. 0.44 miles southwest of the site)	325 Bushwick Avenue Brooklyn, NY 11206
11	PS196 / MS582 (approx. 0.45 miles west of the site)	207 Bushwick Ave. Brooklyn, NY 11206
12	Maria Hernandez Park (approx. 0.43 miles southeast of the site)	64 Irving Avenue Brooklyn, NY 11237
13	P.S. 123 Suydam (approx. 0.46 miles southeast of the site)	100 Irving Avenue Brooklyn, NY 11237
14	East Williamsburg Scholars Academy K477 (approx. 0.47 miles northwest of the site)	850 Grand Street Brooklyn, NY 11211
15	The High School for Enterprise, Business and Technology (approx. 0.47 miles northwest of the site)	850 Grand Street Brooklyn, NY 11211
16	PROGRESS High School for Professional Careers (approx. 0.47 miles northwest of the site)	850 Grand Street Brooklyn, NY 11211

2.3 Site Physical Conditions

2.3.1 Topography

The site elevation ranges from about 12 feet above mean sea level (amsl) on the northern side to about 19 feet amsl on the southern side, according to geographic information system (GIS) elevation data. The grade of the three buildings is approximately level, while the surrounding area slopes north toward Newtown Creek. The southern sides of all three buildings on the site are approximately five feet below the surface grade of the parking lot and the northern entrances are level with Johnson Avenue.

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2.3.2 Geology

The site is located in a developed area of Brooklyn, New York that is generally covered with paved roads, public walkways and buildings. The built environment is generally underlain by uncontrolled fill used for construction and development since the 1800's. According to the "Bedrock and Engineering Geologic Maps of Kings and Queens Counties, New York, and Parts of Bergen County, New Jersey" by Charles A. Baskerville, et al., the bedrock underlying the site is the Hartland Formation. The Hartland Formation east of the East River is comprised of interbedded units of gray thinly laminated muscovite-biotite-quartz schist with minor garnet; gray fine-grained biotite-muscovite-quartz schist; white to pinkish white, light-green-weathering fine- to medium-grained gneissic quartz-microcline-muscovite-biotite-plagioclase granite with minor garnet; dark-greenish-black quartz-biotite-hornblende amphibolite with some white and/or pink granite pegmatite; and gray unevenly foliated sillimanite-plagioclase-muscovite-biotite-microcline-quartz gneissic schist with minor garnet.

The site is underlain by fill predominantly consisting of gray and orange brown to dark brown fine to medium sand and silt with varying amounts of brick, glass, metal, wood, coal, coal ash, and tile pieces. The fill was observed from surface grade to a depth of approximately 8 to 17 feet below grade surface (bgs) during previous environmental investigations. Brown, orange-brown, and gray fine sand with varying amounts of gravel, clay, organics, and silt was observed below the fill. Bedrock was not encountered; however, based on Langan's experience in the surrounding area, bedrock is expected to be present over 200 feet bgs.

2.3.3 Hydrogeology

Groundwater flow is typically topographically influenced, as shallow groundwater tends to originate in areas of topographic highs and flows toward areas of topographic lows, such as rivers, stream valleys, ponds, and wetlands. A broader, interconnected hydrogeologic network often governs groundwater flow at depth or in the bedrock aquifer. Groundwater depth and flow direction are also subject to hydrogeologic and anthropogenic variables such as precipitation, evaporation, extent of vegetation cover, coverage by impervious surfaces, and subsurface structures. Other factors influencing groundwater include depth to bedrock, the presence of anthropogenic fill, and variability in local geology and groundwater sources or sinks.

Groundwater was observed between approximately 5 and 15 feet bgs during previous environmental investigations. Based on the general topography of the surrounding area, inferred groundwater flow is to the north, towards Newtown Creek.

Infiltration of precipitation to the water table is likely minimal due to the current presence of impervious surfaces throughout the site. The majority of runoff drains to city sewers and then to one of the several wastewater treatment plants that serve the city. Groundwater in Brooklyn

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is not used as a potable water source. Potable water provided to the City of New York is derived from surface impoundments in the Croton, Catskill, and Delaware watersheds.

2.3.4 Wetlands

Wetlands were evaluated by reviewing the National Wetlands Inventory and NYSDEC regulated wetlands map. There are no designated wetlands on the site. Newtown Creek, an estuarine and marine deepwater wetland, is located approximately 250 feet north of the site.

2.3.5 Subsurface Infrastructure

A sewer easement for a 90-inch-diameter sewer exists on the western part of the site, transecting the site from Johnson Avenue to Ingraham Street. The New York City Department of Environmental Protection (NYCDEP) standard width for sewer easements is typically 15 feet on either side of the sewer; however, the easement was recorded prior to the formation of the NYCDEP and the city entity that is referenced in the easement text is the Brooklyn Borough President's Office.

Based on correspondence from the NYCDEP in March 2023, a field investigation was performed to confirm the presence, location, and condition of the sewer. The NYCDEP sewer was confirmed to traverse the site and was identified to be an active combined sewer that was in good condition at the time of the investigation. Based on available surveys, the top of the sewer is anticipated to be situated at about elevation (el) 6.5, referenced to the North American Vertical Datum of 1988 (NAVD88), which corresponds to about 13 to 14 feet bgs. Groundwater was previously observed between about 5 and 15 feet bgs and the sewer may be situated below the groundwater table. Therefore, contaminant migration through the sewer is possible and groundwater elevation and flow direction will be further evaluated during implementation of the RIWP. NYCDEP correspondence related to the sewer identification is provided in Appendix A.

2.4 Summary of Previous Environmental Investigations

Environmental reports and related documents prepared for the site include the following (copies are provided in Appendix A):

- Phase I Environmental Site Assessment (ESA), prepared by Langan, dated 23 August 2019
- Phase II Environmental Site Investigation (ESI) prepared by Langan, dated 24 September 2019
- Supplemental Site Investigation Report, prepared by Langan, dated 28 September 2022

The following presents a summary of relevant findings for each report.

<u>Phase I Environmental Site Assessment, prepared by Langan, dated 23 August 2019</u>

Langan prepared a Phase I ESA on behalf of Prologis, Inc. for the site in accordance with ASTM E1527-13 and the USEPA AAI Rule, for the purpose of identifying recognized environmental conditions (RECs) in connection with the site. At the time of the site reconnaissance, the property was occupied by Envelope Manufacturers Corp., but manufacturing was no longer occurring.

The following RECs were identified in the Phase I ESA:

- REC 1 – Current and Historical Site Use

  Historical records indicate the site had been used for a variety of industrial operations since at least 1907, including as a lumber yard (1907-1951), an auto garage (1928-1934), a metal working facility (1933), a paper box manufacturing facility (1951), and an envelope manufacturing facility (1992-2019).

  During the site reconnaissance, a septic holding tank was observed in the northeast corner of the site. One gasoline underground storage tank (UST) was reported in the northeast corner of the site (1933) and presumed to have been removed, as the location of the septic tank and former gasoline UST appeared coextensive. Two fuel oil USTs to support former oil burning boilers were reported at the site (1912-1990) but were not observed during the site reconnaissance.

- REC 2 – Current and Historical Operations of Surrounding Properties

  The area surrounding the site has been used for industrial purposes since at least 1888 through the present. Activities have included rail freight yards, plastics manufacturing, pharmaceutical manufacturing, a coal yard, auto repair shops, metal working, a dry cleaners/laundry, and miscellaneous manufacturing.

  There is a known historical presence of chlorinated volatile organic compounds (VOC) in groundwater in the Ingraham Street Sidewalk project, which adjoins the site to the south. The Ingraham Street Sidewalk project (New York State Hazardous Waste Site [SHWS] ID No. 224142) is classified as a potential (P) site in the New York State Superfund Program. The Ingraham Street Sidewalk site represents the off-site portion of the Popular Hand Laundry Site (VCP Site No. V00170), which the NYSDEC certified to be completed (i.e., remediated) in June 2017. Reported historical uses of this VCP Site included paper box manufacturing, metal works, drum storage and cleaning, and dry-cleaning operations.

Phase II Environmental Site Investigation, prepared by Langan, dated 24 September 2019

A Phase II ESI was performed for the site between July 15 and 19, 2019. The scope of the investigation included a geophysical survey assessing subsurface anomalies and potential presence of USTs, collection of 19 soil samples from 16 soil borings, collection of 7 groundwater

samples from 6 temporary wells, and collection of 3 co-located sub-slab vapor and indoor air samples.

The following is a summary of the findings:

- *Geophysical Survey*: Floor drains with a network of subsurface conveyance piping are present in the northeast portion of the site. A septic tank was identified in this same area, with the geophysical surveys suggesting the conveyance piping of the floor drains route to the tank.

Soil

- *Subsurface Observations*: Surficial concrete was underlain by fill to depths of approximately 8 to 17 feet bgs. Fill generally consisted of gray, orange-brown, and brown silt and sand with varying amounts of brick, glass, coal, coal ash, and tile pieces. Native soil underlying fill was identified from about 8 feet to 21 feet bgs (deepest boring terminus) and generally consisted of brown, orange-brown, brown-and-gray silty fine sand with varying amounts of gravel, clay, organics and silt.
- Petroleum-like odors or elevated PID readings were observed in two borings (SB03 from 10 to 14 feet bgs and SB04 from 8 to 15 feet bgs) in the northeastern part of the site, and in one boring (SB16 from 0.5 to 6 feet bgs) in the southwestern part of the site. N-propylbenzene was detected at a concentration of 6.7 milligrams per kilogram (mg/kg) in boring SB04, above the NYSDEC Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (6 NYCRR) Part 375 Protection of Groundwater (PGW) Soil Cleanup Objectives (SCO).[1]
- Semivolatile organic compounds (SVOC) (specifically polycyclic aromatic hydrocarbons [PAH]) and metals are present in the fill layer. Detections of SVOCs ranged from 0.28 mg/kg to 4.3 mg/kg. Benzo(a)pyrene (ranging from 2.0 to 4.3 mg/kg) and arsenic (67 mg/kg) concentrations exceeded the 6 NYCRR Part 375 Restricted Use-Industrial (RUI) SCO.
- Chlorinated VOCs, vinyl chloride and cis- and trans-1,2-dichloroethethene (DCE), were detected above the 6 NYCRR Part 375 PGW SCOs in one soil sample collected from within the water table (14 to 14.5 feet bgs) at boring SB08.

Groundwater

- Chlorinated VOCs (tetrachloroethene [PCE], trichloroethene [TCE], cis-1,2-DCE, and vinyl chloride) were detected above NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values (SGV) for Class GA

[1] Soil boring locations are shown on Figure 4.

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groundwater in groundwater samples from three temporary monitoring wells (TMW04, TMW07, and TMW08).[2]

- Petroleum-related compounds were detected above SGVs in groundwater samples from wells two temporary monitoring wells (TMW03 and TMW04).

Sub-slab Vapor and Indoor Air

- Petroleum-related and chlorinated VOCs were detected in sub-slab soil vapor and indoor air samples. The total VOCs detected in sub-slab vapor ranged from 2,907 micrograms per cubic meter (µg/m^3) in SSV03 to 5,593 µg/m^3 in SSV01,[3] with detections in indoor air ranging from 305 µg/m^3 in IA01 to 989 µg/m^3 in IA02. When evaluating the sub-slab vapor and indoor air samples using the NYSDOH Decision Matrices, the resulting recommendations range from "no further action" to "mitigate." Detected concentrations of VOCs in indoor air did not exceed NYSDOH air guidance values (AGV).

Supplemental Site Investigation Report, prepared by Langan, dated 28 September 2022

The supplemental site investigation was conducted on July 28, 29, and August 1, 2022 and consisted of:

- Installation of 9 soil borings to 8 to 30 feet bgs and collection of 19 soil samples
- Installation of 2 monitoring wells to 19 feet bgs and collection of 2 groundwater samples
- Installation of 1 soil vapor sampling point to 13 feet bgs, and 1 sub-slab soil vapor sampling point, and collection of 2 soil vapor samples
- Collection of quality assurance/quality control (QA/QC) samples

The following is a summary of the findings:

Soil

- *Subsurface Observations*: Fill predominantly consisting of brown to dark brown, silty fine to medium sand with varying amounts of coal, fine red gravel, glass, metal, and wood was observed from surface grade to approximately 15 to 17 feet bgs (fill was present at the terminus of certain soil borings). Light brown, fine to medium-grained sand with varying amounts of clay and gravel was observed below the fill to the boring terminus.
- Petroleum-like impacts (odors, staining, and/or PID readings above background) were observed in soil boring SB26.[4] Petroleum-related compounds were not detected in soil at levels exceeding the PGW or RUI SCOs at this location.

[2] Monitoring well locations are shown on Figure 5.
[3] Soil vapor sample locations are shown on Figure 6.
[4] Soil boring locations are shown on Figure 4.

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- Soil samples contained VOCs, SVOCs, and metals at concentrations exceeding PGW SCOs, and SVOCs and metals at concentrations exceeding RUC and/or RUI SCOs. Toxicity characteristic leaching procedure (TCLP) lead was detected in boring SB08 at a concentration of 7.88 milligrams/liter (mg/L), exceeding the Resource Conservation and Recovery Act (RCRA) Characteristic of Hazardous Waste limit for lead. PCE and TCE were detected in boring SB23 from 1 to 3 feet bgs at concentrations of 20 mg/kg and 1.4 mg/kg, respectively, exceeding the PGW SCOs. Vinyl chloride was also detected in boring SB23 in a sample collected from 13 to 15 feet bgs at a concentration of 0.029 mg/kg, exceeding the PGW SCO.

Groundwater

- Chlorinated VOCs (PCE, cis-1,2-DCE, and vinyl chloride) were detected above SGVs in groundwater samples from temporary monitoring wells TMW09 and TMW10.

Soil and Sub-slab Vapor

- Chlorinated VOCs (PCE and TCE) were detected at concentrations of 5,520 µg/m^3 and 365 µg/m^3, respectively, which are above the NYSDOH Decision Matrix A thresholds that trigger a recommendation of "mitigate" in the absence of associated indoor air data. Total VOC concentrations were detected in sub-slab vapor at a maximum of 6,975 µg/m^3 in sample SSV04.

The data presented in the Phase II ESI Report and the Supplemental Site Investigation Report were not validated at the time of reporting; however, the data will be validated and presented in a Data Usability Summary Report included in the forthcoming Remedial Investigation Report (RIR).

A summary of soil, groundwater, and soil vapor sampling results are provided on Figures 4, 5, and 6, respectively.

2.5 Preliminary Areas of Concern

Based on site history and the findings of the previous studies, the preliminary areas of concern (PAOC) to be further investigated during the remedial investigation (RI) are described below and shown on Figure 7:

PAOC 1: Chlorinated Solvents in Shallow Soil

Chlorinated solvents were detected in shallow soil at a depth interval between 1 and 3 feet bgs in the southern part of the site. One sample from the 1-to-3-feet bgs interval in boring SB23 contained PCE and TCE at concentrations of 20 mg/kg and 1.4 mg/kg, respectively, above the PGW SCOs. The deeper sample from this boring, taken from the 13-to-15-feet bgs interval, contained PCE and TCE at concentrations of 0.0098 mg/kg and 0.0032 mg/kg, respectively (three

to four orders of magnitude lower than the shallower interval). Additional investigation is needed to determine the potential for and extent of any release of chlorinated solvents from historical site operations in this area.

PAOC 2: Chlorinated Solvents in Groundwater and Soil Vapor

Chlorinated solvents were detected in groundwater and soil vapor at the site during previous investigations. PCE and TCE were detected in sub-slab vapor at concentrations of 5,520 µg/m^3 and 365 µg/m^3, respectively, which warrants mitigation in future development according to the NYSDOH Decision Matrix. No further sampling is proposed as any future development will include mitigation of this exposure pathway.

There is a known historical presence of chlorinated volatile organic compounds (VOC) in groundwater in the Ingraham Street Sidewalk project, which adjoins the site to the south at a hydraulically upgradient location. The Ingraham Street Sidewalk project (SHWS ID No. 224142) is classified as a "P" site in the New York State Superfund Program and represents the off-site portion of the Popular Hand Laundry Site (VCP Site No. V00170), which the NYSDEC certified to be completed (i.e., remediated) in June 2017. Reported historical uses of this VCP Site included paper box manufacturing, metal works, drum storage and cleaning, and dry-cleaning operations.

A Site Characterization Work Plan (dated May 15, 2024) for the Ingraham Street Sidewalk Project was prepared by HRP Associates, Inc. (HRP) to investigate the extent of chlorinated solvent-related impacts in soil, groundwater, and soil vapor in the public right-of-way centered around 88 Ingraham Street (the former Popular Hand Laundry VCP site) and between three other remediation sites (including the site described by this RIWP). The Site Characterization Report for the Ingraham Street Sidewalk project is forthcoming and additional investigation at the site (beyond that described in this RIWP) may be required to further investigate the findings of the off-site CVOC investigation. Additional investigation at the site will be coordinated with the NYSDEC and NYSDOH for review and approval prior to implementation.

PAOC 3: Elevated Mercury in Soil

Mercury was detected in soil sample SB21_1-3 at a concentration of 49 mg/kg, above the RUI SCO. This sample was not analyzed using TCLP, and further investigation is required to determine if hazardous concentrations of mercury are present in this area.

PAOC 4: Elevated Lead in Soil

Lead was detected in soil samples SB23_1-3 and SB09_3.0-3.5 at concentrations of 1,990 mg/kg and 1,050 mg/kg, respectively. The sample from SB09 was not analyzed using TCLP, and further investigation is required to determine if hazardous concentrations of lead are present in this area. TCLP lead was detected in boring SB23 at a concentration of 7.88 mg/L, exceeding the RCRA Characteristic of Hazardous Waste limit for lead. Additional investigation is needed to delineate the extent of hazardous lead impacts.

PAOC 5: Observed Petroleum Impacts

Petroleum impacts (odors and elevated PID readings) were identified in the northeastern part of the site during previous investigations. Methyl tert-butyl ether (MTBE), a gasoline additive, was detected in groundwater above its SGV in this area. No petroleum-related chemicals were detected in soil samples in the area. Historical site use as an auto garage with a former gasoline UST (presumed to have been removed) may have contributed to contamination in the subsurface in the northeastern corner of the site. Additional investigation is needed to further characterize and delineate the extent of petroleum impacts in this area.

Petroleum-related VOCs (1,2,4-trimethylbenzene, 2,2,4-trimethylpentane, benzene, cyclohexane, ethylbenzene, heptane, hexane, toluene, and/or xylenes) were detected in sub-slab vapor and indoor air across the existing buildings at concentrations triggering recommendations ranging from "monitoring" to "mitigate" when evaluated against the NYSDOH Decision Matrices.

PAOC 6: Site-wide Contaminated Fill

The property is in an urban area that has been developed since the late 1800s. Fill of unknown origin was used to level the area for development. SVOCs and metals characteristic of contaminated fill widely used during this time were detected in soil samples across the site.

Previous environmental investigations identified contaminated fill predominantly consisting of brown to dark brown silty fine to medium sand with varying amounts of coal, fine red gravel, glass, metal, and wood observed from surface grade to approximately 15 to 17 feet bgs (fill was present at the terminus of certain soil borings). Additional soil borings will supplement existing data to delineate the extent of contaminated fill.

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3.0 SCOPE OF WORK

The objective of this RIWP is to investigate and characterize "the nature and extent of the contamination at and/or emanating from the site," per Environmental Conservation Law (ECL) Article 27, Title 14 (Brownfield Cleanup Program, or BCP). The rationale for each sampling location in relation to the PAOCs and analytical parameters for each proposed sample are provided in Table 1. The field tasks are discussed in more detail in the following sections.

Geophysical Survey

- Perform a site-wide geophysical survey to identify potential USTs and clear investigation locations of underground structures and utilities. Sampling locations may be relocated as necessary based on the findings of the geophysical survey.

Soil Borings and Sampling

- Advance 12 soil borings to a maximum depth of 20 feet bgs or refusal.
- Collect up to 4 samples from each soil borings for a total of up to 48 soil samples (plus quality assurance/quality control [QA/QC] samples) for laboratory analysis.
- Advance 18 hazardous metal delineation soil borings (RIB11, RIB12, and RIB13 and six associated step-out borings from RIB11 and RIB12 and three associated step-out borings from RIB13) to 8 feet bgs.
    - Certain samples collected from RIB11 and associated step-outs will also be analyzed for VOCs to delineate shallow chlorinated solvent impacts.
- Collect up to 4 soil samples from each delineation soil boring for a total of up to 72 soil samples (plus QA/QC samples) for laboratory analysis. Select samples will be placed on hold, pending initial results, as described in Section 3.2.2 and Table 1.

Monitoring Well Installation and Sampling

- Install and develop 9 permanent monitoring wells, 3 of which are re-installations of previously drilled temporary monitoring wells.
- Collect 1 groundwater sample from each monitoring well (plus QA/QC samples) for laboratory analysis.
- Survey and gauge monitoring wells to establish groundwater elevations and evaluate flow direction.

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Soil Vapor Point Installation and Sampling

- Install 8 temporary soil vapor points to about 5 feet bgs or 2 feet above the observed groundwater table, whichever is shallower.
- Collect 1 soil vapor sample from each soil vapor point for laboratory analysis.

A soil vapor intrusion (SVI) evaluation was performed during Langan's 2019 Phase II ESI and sub-slab vapor and indoor air results yielded a recommendation ranging from "no further action" to "mitigate" when evaluated against the NYSDOH decision matrices. As such, the previous analytical results confirm the need for a vapor mitigation system beneath the on-site building prior to full-time occupancy and additional sub-slab vapor and indoor air sampling is not proposed under this RIWP. The on-site buildings are currently limited to commercial warehousing.

Modifications to this scope of work may be required: 1) due to site operations, equipment or other access restrictions; 2) in the event that unexpected contamination is detected and additional analytical data is needed; and 3) to adequately characterize and delineate subsurface impacts in compliance with the BCP, regulations and applicable investigation guidance documents (e.g., DER-10). NYSDEC and NYSDOH will be contacted to obtain approval for these modifications.

The field investigation will be completed in accordance with NYSDEC DER-10 Guidance and the procedures specified in the Health and Safety Plan (HASP) and the Quality Assurance Project Plan (QAPP) included as Appendices B and C, respectively. A Community Air Monitoring Plan will be implemented during this investigation (see Section 3.7.2 and Appendix D).

The names, contact information and roles of the principal personnel who will participate in the investigation are listed below. The HASP contains emergency contact information (HASP Table 5) and a map with a route to the nearest hospital (HASP Figure 2). Résumés for Langan employees involved in the project are included in the QAPP (Appendix C).

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Personnel	Investigation Role	Contact Information
Mimi S. Raygorodetsky Langan	Qualified Environmental Professional	Phone – 212-479-5441 Email – mraygorodetsky@langan.com
Paul McMahon, P.E. Langan	Quality Assurance Officer	Phone – 212-479-5451 Email – pmcmahon@langan.com
Tony Moffa, CHMM Langan	Langan Health & Safety Officer	Phone – 215-491-6500 Email – tmoffa@langan.com
Bill Bohrer, PG Langan	Field Safety Officer	Phone – 410-984-3068 Email – wbohrer@langan.com
Michael Au, P.E. Langan	Project Manager	Phone – 212-479-5499 Email – mau@langan.com
Andrew Ashley Langan	Field Team Leader	Phone – 212-479-5499 Email – aashley@langan.com
Joe Conboy Langan	Program Quality Assurance Monitor/Data Validator	Phone – 215-845-8985 Email – jconboy@langan.com
Javier Perez-Maldonado NYSDEC	Project Manager	Phone – 518-402-8172 Email – javier.perez-maldonado@dec.ny.gov
Michael Izdebski NYSDOH	Project Manager	Phone – 518-402-7860 Email – beei@health.ny.gov

3.1 Geophysical Survey

Langan will coordinate with a geophysical contractor to clear subsurface testing locations of potential subsurface utilities and to locate any additional USTs or other suspect anomalies. The site-wide geophysical survey will be completed using a collection of geophysical instruments, including electromagnetic and utility line locator instruments and ground-penetrating radar (GPR). Borings will be relocated as necessary to avoid subsurface utilities, infrastructure, or other impediments identified during the survey.

3.2 Soil Investigation

3.2.1 Drilling and Logging

An environmental drilling subcontractor will advance 12 soil borings (designated RIB01 through RIB10, RIB14 and RIB15) to 20 feet bgs and 18 soil borings (RIB11 through RIB13 and associated step-out borings) to 8 feet bgs to further investigate the PAOCs identified in Section 2.5. A plan showing the proposed boring locations is included as Figure 7. A Langan engineer, geologist, or scientist will document the work, screen the soil samples for environmental impacts, and collect environmental samples for laboratory analyses under the direct supervision of a Qualified Environmental Professional.

Soil borings will be advanced using direct-push drilling technology (Geoprobe). Soil will be screened continuously to the boring termination depth with a PID equipped with a 10.6 electron volt (eV) bulb and for visual and olfactory evidence of environmental impacts (e.g., staining and odor). Soil descriptions will be recorded in a field log. Boring logs will be presented in the RIR.

If non-aqueous phase liquid (NAPL) and/or grossly contaminated material (GCM) contamination is encountered, the NAPL/GCM will be delineated vertically and horizontally from the soil boring where NAPL/GCM was observed. NAPL/GCM soil delineation will be conducted in accordance with the NYSDEC "Delineation of NAPL Contamination General Guidance" document, which is included in Appendix E.

3.2.2 Soil Sampling and Analysis

Soil Borings RIB01 through RIB10, RIB14 and RIB15

Up to four grab soil samples will be collected from each soil boring for laboratory analysis. For borings RIB01 through RIB10, RIB14 and RIB15:

- One sample will be collected from the shallow fill layer between 0 to 2 feet bgs;
- One sample will be collected from the groundwater interface, if encountered;
- One sample will be collected from the bottom of the uncontrolled fill layer, or, if encountered, from the interval exhibiting the greatest degree of contamination (where observed based on the presence of staining, odor, and/or PID readings above background);
- One sample will be collected from the first underlying depth interval without evidence of a chemical or petroleum release (i.e., native soil), if present;

If distinct zones of grossly-contaminated material are identified in the soil boring, two additional samples will be collected – one in the impacted interval and one in the interval below the observed impacts.

The samples will be collected in laboratory-supplied containers and will be sealed, labeled, and placed in an ice-chilled cooler (to attempt to maintain a temperature of approximately 4°C) for delivery to a NYSDOH Environmental Laboratory Approval Program (ELAP)-certified laboratory. Soil samples will be analyzed using the latest USEPA methods as follows:

- Part 375 List and Target Compound List (TCL) VOCs by USEPA methods 8260C/5035
- Part 375 List and TCL SVOCs by USEPA method 8270D
- Part 375 List pesticides by USEPA methods 8081B
- Part 375 List PCBs by USEPA method 8082A
- Target Analyte List (TAL)/Part 375 List metals (including cyanide and hexavalent and trivalent chromium) by USEPA Methods 6010C/7471B/9010C/7196A.
- PFAS by EPA Method 1633. A list of the PFAS compounds is provided in Table 2.
- 1,4-dioxane by EPA Method 8270D

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Delineation Borings RIB11 through RIB13

- Lead Delineation:
    - Samples from the two shallowest intervals (0-2 feet bgs and 2-4 feet bgs) of RIB11 and RIB12 (4 samples) and from the two shallowest intervals (0-2 feet bgs and 2-4 feet bgs) of the three 5-foot step-out borings of both RIB11 and RIB12 (12 samples) will be analyzed for total lead and TCLP lead by USEPA Method 1311.
    - Samples collected from the two deeper intervals (4-6 feet bgs and 6-8 feet bgs) of RIB11 and RIB12 (4 samples) and from the two deeper intervals (4-6 feet bgs and 6-8 feet bgs) in the three 5-foot step-out borings of both RIB11 and RIB12 (12 samples), and all samples from the three 10-foot step out borings of both RIB11 and RIB12 (24 samples) will be placed on hold at the laboratory pending initial TCLP lead analytical results.
- Mercury Delineation
    - Samples from the two shallowest intervals (0-2 feet bgs and 2-4 feet bgs) of RIB13 (2 samples) and from the two shallowest intervals (0-2 feet bgs and 2-4 feet bgs) of the three 10-foot step-out borings (6 samples) will be analyzed for total and TCLP mercury by USEPA Method 1311
    - Samples from the two deeper intervals (4-6 feet bgs and 6-8 feet bgs) of RIB13 (2 samples) and from the two deeper intervals (4-6 feet bgs and 6-8 feet bgs) of the three 10-foot step-out borings (6 samples) will be placed on hold pending results from shallower samples
    - Based on the results of the TCLP evaluation, additional speciation sampling will be performed (via selective sequential extraction methods) at up to four locations exhibiting the highest concentrations of TCLP mercury to determine the species and potential mobility of mercury at the site. Additional speciation sampling will not be performed at initial sample locations that do not have detections of TCLP mercury.
- Chlorinated Solvent Delineation
    - Samples from all intervals (0-2 feet bgs, 2-4 feet bgs, 4-6 feet bgs, and 6-8 feet bgs) from boring RIB11 (4 samples) and all intervals (0-2 feet bgs, 2-4 feet bgs, 4-6 feet bgs, and 6-8 feet bgs) of the three 10-foot step-out borings (12 samples) will be analyzed for VOCs.

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Non-disposable, down-hole drilling equipment and sampling apparatus will be decontaminated between locations with Alconox and water. The proposed soil samples are summarized in Table 1.

QA/QC procedures to be followed are described in the QAPP in Appendix C.

3.3 Groundwater Investigation

3.3.1 Monitoring Well Installation

Six soil borings (RIB01 through RIB05, and RIB15) will be advanced to approximately five feet below the groundwater table, which is estimated to be at approximately 5-15 feet bgs, then converted into permanent groundwater monitoring wells (RIMW01 through RIMW05, and RIMW15). Additionally, three wells (TMW02, TMW08, and TMW09) will be re-installed at locations previously sampled with temporary wells. A plan showing the proposed well locations is included as Figure 7.

Wells will be installed across the observed water table and will be constructed with 2-inch diameter, threaded, flush-joint, polyvinyl chloride (PVC) casing and 0.01-inch slot well screens (approximately 10 feet in length). Clean sand will be used to fill the annulus around the screen up to approximately two feet above the top of the screened interval. A 2-foot-thick bentonite seal will be installed above the sand and the borehole annulus will be grouted to the surface. The wells will be finished with flush-mounted steel manhole covers. Management of investigation-derived waste (IDW) is discussed in Section 3.5.

Following installation, the wells will be developed using a surge block across the well screen to agitate and remove fines. The surge block will be moved within the well screen in 2-to-3-foot increments for approximately 2 minutes per increment. After surging, the well will be purged via pumping until the water becomes clear (having turbidity less than 50 Nephelometric Turbidity Units [NTU]). The well will then be allowed to equilibrate for a minimum of one week before collecting groundwater samples.

3.3.2 Monitoring Well Survey

The location and elevation of the groundwater monitoring wells (top of casing elevations) will be surveyed. Elevations of the top of monitoring well casings and protective well casings will be surveyed to the nearest 0.01 foot. Vertical control will be established by surveying points relative to the North American Vertical Datum of 1988 (NAVD88) by a NYS-licensed land surveyor. Two synoptic gauging events will be performed to document static water levels at approximate high- and low-tide conditions. Elevation data will be used with the synoptic groundwater well gauging data to prepare groundwater contour maps to evaluate the direction of groundwater flow.

3.3.3 Groundwater Sampling and Analysis

One groundwater sample will be collected from each of the nine monitoring wells, as summarized in Table 1. Prior to sampling, the monitoring wells will be gauged for static water levels and each well will be purged. Physical and chemical parameters (e.g., temperature, dissolved oxygen, oxygen reduction potential, turbidity) will be allowed to stabilize within the ranges specified in the USEPA's Low Stress Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells (dated July 30, 1996, and 4th revision September 19, 2017). Samples will be collected with a peristaltic pump and dedicated polyethylene tubing (or similar pump apparatus). Non-disposal components of the pump will be decontaminated with Alconox and water between each sample location. Development and purge water will be containerized for off-site disposal. Management of investigation-derived waste (IDW) is discussed in Section 3.5.

The groundwater samples will be collected in laboratory-supplied containers and will be sealed, labeled, and placed in an ice-chilled cooler (to maintain a temperature of approximately 4°C) for delivery to the laboratory. Groundwater samples from newly installed well locations and re-installed wells (TMW02, TMW08, and TMW09) will be analyzed using the latest USEPA methods as follows:

- TCL VOCs by USEPA method 8260C
- TCL SVOCs by USEPA method 8270D
- Pesticides by USEPA method 8081
- PCBs by USEPA method 8082A
- Metals (filtered and unfiltered) by USEPA method 6010C/7470
- Hexavalent and Trivalent Chromium by USEPA method 3060
- Total Cyanide by USEPA Method 9012B
- Extractable petroleum hydrocarbons (EPH) [C19-C36] by Massachusetts Department of Environmental Protection (MADEP) Method Rev 2.1
- PFAS by EPA Method 1633
- 1,4-dioxane by EPA Method 8270D-SIM

QA/QC procedures to be followed are described in the QAPP in Appendix C.

3.4 Soil Vapor Investigation

3.4.1 Soil Vapor Point Installation

Eight temporary soil vapor points (RISV01 through RISV07 and RISV14) will be installed in accordance with the NYSDOH "Guidance for Evaluating Soil Vapor Intrusion in the State of New

York" (October 2006, with updates). Proposed soil vapor sample locations are shown on Figure 7 and summarized in Table 1.

Soil vapor points will be installed about 5 feet bgs or 2 feet above the observed groundwater table (whichever is shallower). The soil vapor points will consist of a dedicated 1.875-inch polyethylene implant threaded into inert sample tubing that will extend to surface grade. A clean sand filter pack will be placed around the screen implant and the remaining annular space will be sealed with hydrated bentonite to surface grade.

A seal check will be performed at each installed sub-slab vapor point with a helium tracer gas before and after sample collection. Prior to sampling, three tubing volumes will be purged from the soil vapor point using a multi-gas monitor, with a flow rate of about 0.15 liters per minute. The multi-gas monitor will also be used to screen the vapor for the presence of VOCs.

3.4.2 Soil Vapor Sampling and Analysis

Samples will be collected in general accordance with the NYSDOH "Guidance for Evaluating Soil Vapor Intrusion in the State of New York" (October 2006, with updates). Before collecting vapor samples, three vapor probe volumes (i.e., the volume of the sample implant and tubing) will be purged from each sample point at a rate of less than 0.2 liters per minute using a RAE Systems MultiRAE® meter (or equivalent). Purged soil vapor will be monitored for VOCs with the MultiRAE® during this process.

A helium tracer gas will be used in accordance with NYSDOH protocols to serve as a QA/QC technique to document the integrity of each soil vapor point seal before and after sampling. The tracer gas will be introduced into a container surrounding the vapor point and seal. Helium will be measured from the sampling tube and inside the container. If the sample tubing contains more than 10% of the tracer gas concentration that was introduced into the container, then the seal is considered compromised and should be enhanced or reconstructed to reduce outside air infiltration.

After integrity of each seal is confirmed, soil vapor samples will be collected into laboratory-supplied, batch-certified clean 2.7- or 6-liter Summa® canisters with calibrated flow controllers over a 2-hour sampling period.

During the sampling event, a NYSDOH Indoor Air Quality Questionnaire and Building Inventory form will be completed to identify preferential pathways, building features and/or materials on-site that may affect the interpretation of the sampling results.

A log sheet for each soil vapor sample will be completed to record sample identification, date and time of sample collection, sampling depth, name of the field engineer responsible for

sampling, sampling methods and equipment, vapor purge volumes, volume of vapor extracted, flow rate, and vacuum of canisters before and after sample collection.

All vapor samples will be analyzed for VOCs by USEPA Method TO-15. The proposed vapor sample analyses are summarized in Table 1. QA/QC procedures to be followed are described in the QAPP provided as in Appendix C.

3.5 Data Management and Validation

Laboratory analyses of soil and groundwater will be conducted by a NYSDOH ELAP-approved laboratory in accordance with USEPA SW-846 methods and NYSDEC Analytical Services Protocol (ASP) Category B deliverable format. Environmental data will be reported electronically using the database software application EQuIS as part of NYSDEC's Environmental Information Management System (EIMS).

Table 1 summarizes the proposed samples and laboratory analyses. QA/QC procedures required by the NYSDEC ASP and SW-846 methods, including initial and continuing instrument calibrations, standard compound spikes, surrogate compound spikes, and analysis of other samples (blanks, laboratory control samples, and matrix spikes/matrix spike duplicates), will be followed. The laboratory will provide sample bottles, which will be pre-cleaned and preserved in accordance with the SW-846 methods. Where there are differences in the SW-846 and NYSDEC ASP requirements, the NYSDEC ASP shall take precedence.

Data validation will be performed in accordance with the USEPA Region 2 Standard Operating Procedures (SOPs) for data validation and USEPA's National Functional Guidelines for Organic and Inorganic Data Review, Technical and Administrative Guidance Memorandum (TAGM) Solid Waste Guidance (SW-96-09) Development and Review of Site Analytical Plans, and DER-10 Appendix 2B Section 2.0. Tier 1 data validation (the equivalent of USEPA's Stage 2A validation) will be performed to evaluate data quality. Tier 1 data validation is based on completeness and compliance checks of sample-related quality control results including:

- Holding times;
- Sample preservation;
- Blank results (method, trip, and field blanks);
- Surrogate recovery compounds and extracted internal standards (as applicable);
- Laboratory control samples and laboratory control sample duplicates recoveries and relative percent difference (RPDs);
- Matrix spike and matrix spike duplicate recoveries and RPDs;
- Laboratory duplicate RPDs; and

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- Field duplicate RPDs.

A Data Usability Summary Report (DUSR) will be prepared by the data validator and reviewed by the quality assurance manager before issuance. The DUSR will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain-of-custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method. Additional details on the DUSRs are provided in the QAPP in Appendix C.

3.6 Management of Investigation-Derived Waste

Soil cuttings will be returned to the borehole unless:

- Free product or grossly contaminated soil is present in the cuttings;
- Backfilling the borehole with cuttings will create a significant path for vertical movement of contaminants. Soil additives (bentonite) may be added to the cuttings to reduce permeability; or
- The soil cannot fit into the borehole.

Boreholes requiring disposal of drill cuttings will be filled with hydrated bentonite chips or clean sand and capped with asphalt or concrete. Excess IDW, including soil cuttings, purged groundwater, and decontamination fluids, will be containerized in properly labeled and sealed United Nations/Department of Transportation (UN/DOT)-approved 55-gallon drums and staged for future waste characterization and off-site disposal at a facility permitted to accept the waste. The drums will be staged in an area on-site, pending receipt of laboratory data and off-site disposal at an appropriate facility. IDW will be removed from the site within one month of completing the investigation. The site will be secured during and after investigation to prevent public access to the site.

3.7 Air Monitoring

The work will be conducted under a Health & Safety Plan (HASP), and air monitoring will be conducted for site workers in addition to the Community Air Monitoring Program (CAMP) for the community. Air monitoring results will be recorded in the field book during the investigation activities, downloaded from field instruments and summarized in the RIR.

3.7.1 Worker Air Monitoring

Air monitoring of the breathing zone will be performed periodically during drilling and sampling activities to document health and safety protection for the work team. VOCs will be monitored with a portable PID in accordance with the HASP (Appendix B). If air monitoring during intrusive operations identifies the presence of VOCs, the field engineer will follow the guidelines outlined in the HASP regarding action levels, permissible exposure, engineering controls, and personal

protective equipment. If the VOC action level is exceeded, work will cease and the work location will be evacuated. Monitoring will continue until the levels drops to permissible limits, at which point, work will resume with continued monitoring. If high levels persist, field activities will be halted and the work relocated to another area. If dust emissions are observed, work will stop and dust suppression measures (i.e., water spray) will be implemented.

3.7.2 Community Air Monitoring Plan

In addition to air monitoring in the worker breathing zone, community air monitoring will be performed in compliance with the NYSDOH Generic CAMP, which is included as Appendix D.

The CAMP will consist of continuous monitoring for VOCs and dust emissions during ground-intrusive activities (i.e., soil boring and monitoring well installation). Upwind concentrations will be measured at the start of each workday to establish background concentrations. VOCs and dust emissions will be continuously monitored at the upwind and downwind perimeters of the work zone during any ground-intrusive work performed at the site. If ground-intrusive activities are performed indoors, air monitoring stations will be placed at the upwind and downwind perimeters of the on-site building.

VOC monitoring will be conducted with a PID equipped with a 10.6 eV lamp (or equivalent). Dust emissions will be monitored using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM10) and capable of averaging a period of 15 minutes (or less) for comparison to the airborne particulate action level (e.g., DustTrak or equivalent). If dust emissions are observed, work will stop and dust suppression measures will be implemented.

3.8 Green Remediation Standards

Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per the NYSDEC DER-31 Green Remediation Policy (DER-31). DER-31 requires the following green remediation/sustainability concepts be considered and/or implemented, to the extent feasible, during investigations:

- Increase energy efficiency/minimize total energy use and direct and indirect CO2/greenhouse gas (GHG) emissions to the atmosphere
- Reduce emissions of air pollutants
- Minimize habitat disturbance and create or enhance habitat or usable land
- Conserve natural resources such as soil and water; promote the sequestration of carbon through reforestation or afforestation
- Minimize fresh water consumption and maximize water reuse during daily operations and treatment processes

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- Prevent long-term erosion, surface runoff, and off-site water quality impacts; prevent unintended soil compaction
- Minimize waste or implement beneficial use of materials that would otherwise be considered a waste
- Minimize equipment and truck idling and use sustainably produced biofuels to reduce discharges of pollutants and GHGs to the atmosphere
- Utilize clean diesel (new or retrofitted) equipment to reduce emissions to the atmosphere
- Minimize truck travel for disposal to save energy and reduce emissions

During implementation of this RIWP, the following elements will be incorporated, to the extent feasible, to reduce GHGs and other emissions:

- Use of Ultra Low Sulfur Diesel in vehicles and machinery by drilling contractor
- Use of diesel exhaust purifier and scrubbers on machinery (drill rigs) by drilling contractor
- Minimization of idling of all vehicles (including construction equipment) in accordance with 6 NYCRR Part 217 Motor Vehicle Emissions, Subpart 217-3 Idling Prohibition for Heavy Duty Vehicles
- Reduction of materials consumption and off-site transport by reuse of non-impacted drilling spoils as backfill within the boring of origin and containerization of drilling spoils exhibiting visual, olfactory, and instrumental signs of contamination.

3.9 Qualitative Human Health Exposure Assessment

A Qualitative Human Health Exposure Assessment will be conducted in accordance with Appendix 3B of the NYSDEC DER-10, Technical Guidance for Site Investigation and Remediation. The Assessment will be submitted in the RIR.

3.10 Fish and Wildlife Resource Impact Analysis

If necessary, a Fish and Wildlife Resources Impact Analysis (FWRIA) will be conducted in accordance with Section 3.10.1 and Appendix 3C of the NYSDEC DER-10, Technical Guidance for Site Investigation and Remediation. The assessment will be submitted in the RIR.

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4.0 REPORTING

4.1 Remedial Investigation Report

Following completion of the RI and receipt of analytical data, an RIR will be prepared in accordance with the applicable requirements of DER-10 Section 3.14. The report will:

- Describe site history and previous investigations
- Describe site environmental conditions
- Describe sampling methodology and field observations
- Evaluate analytical results and describe findings
- Summarize green remediation principles implemented during the RI
- Provide conclusions and recommendations for any further assessment (if warranted)

The RIR will summarize the nature and extent of contamination at each area of concern and identify unacceptable exposure pathways (as determined through a Qualitative Human Health Exposure Assessment). DUSRs will be included in the RIR, and electronic data deliverables will be submitted to the NYSDEC EQuIS database prior to submission of the draft RIR.

The RIR will include soil boring and well construction logs, sampling logs, tabulated analytical results, figures, and laboratory data packages. The tabulated analytical results will be organized in table format and include sample location, media sampled, sample depth, field/laboratory identification numbers, analytical results and the applicable Standards, Criteria, and Guidance (SCGs) pertaining to the site and contaminants of concern for comparison. The report will include scaled figures showing the locations of soil borings, monitoring wells, and sub-slab vapor points, sample concentrations above SCGs for each media, groundwater elevation contours and flow direction, and, if appropriate, groundwater contaminant concentration contours.

The RIR will be provided in an electronic format to the NYSDEC.

4.2 Daily Reports

Daily reports will be prepared and submitted to the NYSDEC and NYSDOH project managers by the end of each day following the reporting period and will include:

- Progress updates
- Photographic documentation
- Identification of samples collected
- Locations and references to a site map for completed activities
- A summary of any and all community complaints with relevant details, including contact information

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- A summary of CAMP findings, including elevated concentrations and response actions, if any
- An explanation of notable site conditions
- A list of anticipated work for the following reporting day

Daily reports are not intended to notify the NYSDEC of emergencies (e.g., accident, spill), request changes to the RIWP, or communicate other sensitive or time-critical information. However, such conditions will also be included in the daily reports. Emergency conditions and changes to the RIWP will be communicated directly to the NYSDEC Project Manager.

The NYSDEC-assigned project number will appear on all reports.

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5.0 SCHEDULE

The table below presents an anticipated schedule for the proposed RI and reporting following the approval of the RIWP. If the schedules changes, it will be updated and submitted to the NYSDEC.

Milestone	Weeks from NYSDEC Approval of RIWP	Estimated Duration (weeks)
RI Mobilization	4	2
RI Field Investigation	6	4
Laboratory Analysis	10	3
Remedial Investigation Report Preparation and Submission to the NYSDEC	13	6

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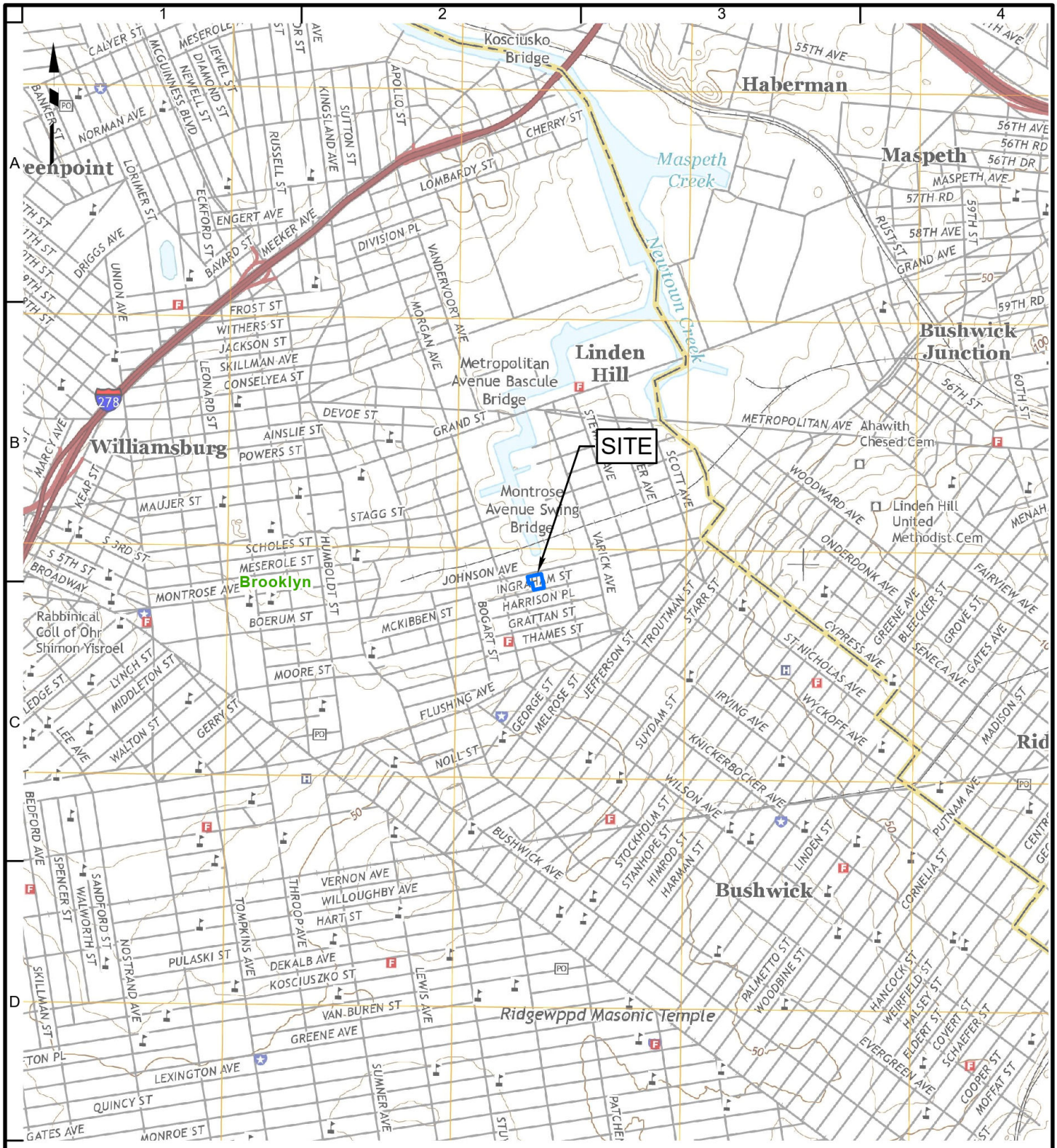
FIGURES



Legend

Approximate Site Location

2,000 0 2,000

SCALE IN FEET

NOTES:

1. BASEMAP ADAPTED FROM UNITED STATES GEOLOGICAL SURVEY (USGS) 7.5-MINUTE SERIES TOPOGRAPHICAL MAPS, BROOKLYN, NEW YORK, QUADRANGLE, DATED 2016.

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Langan Engineering & Environmental Services, Inc.
Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
Langan International LLC

Collectively known as Langan

Project

INGRAHAM STREET LOGISTICS

BLOCK No. 2992, LOT No. 17
BROOKLYN

KINGS COUNTY NEW YORK

Figure Title

SITE LOCATION MAP

Project No. 170588001	Figure No. 1
Date 8/23/2022	
Scale 1"=2,000'	
Drawn By MG	
Submission Date	Sheet 1 of 7

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Legend

- Approximate Site Location
- Tax Parcels
- 2992 Block Number
- 17 Lot Number

NOTES:
1. TAX PARCEL DATA PROVIDED BY THE NEW YORK CITY DEPARTMENT OF CITY PLANNING.
2. WORLD TOPOGRAPHIC BASEMAP IS PROVIDED THROUGH LANGAN'S ESRI AND ARCGIS SOFTWARE LICENSING AND ARCGIS ONLINE.

40 0 40
SCALE IN FEET

LANGAN
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Project
INGRAHAM STREET LOGISTICS
BLOCK No. 2992, LOT No. 17
BROOKLYN NEW YORK

Figure Title
SITE PLAN

Project No. 170588003	Figure No. 2
Date 6/17/2024	
Scale 1"=40'	
Drawn By MG	

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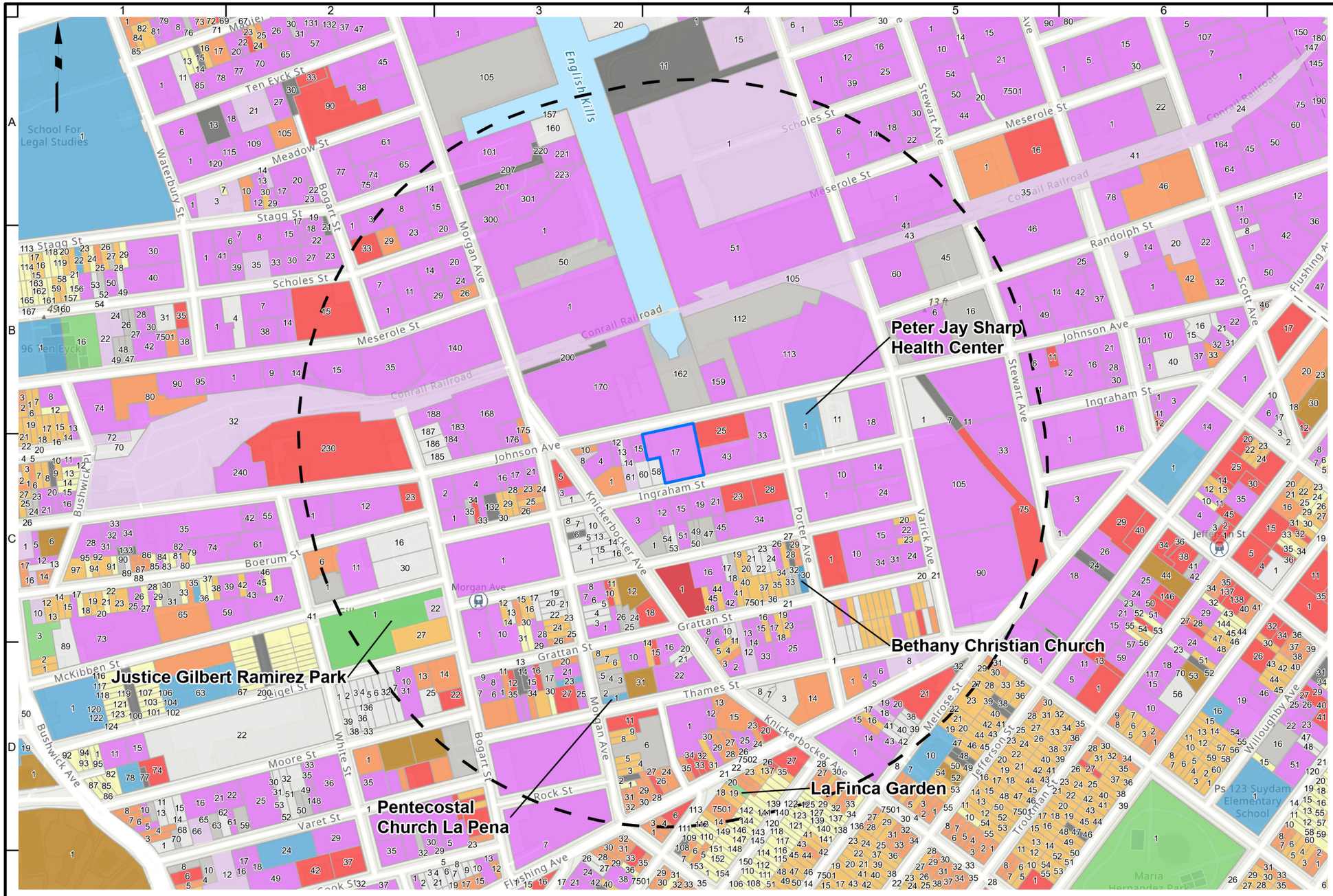
Path: \\langan.com\data\NYC\data0\170588001\Project Data\ArcGIS\APRX\170588001_BCP_2023.aprx Date: 6/17/2024 User: mgeorgalas Time: 5:54 PM



Legend

- Approximate Site Location
- 1/4-mile Radius

Land Use

- One & Two Family Buildings
- Multi-Family Walk-Up Buildings
- Multi-Family Elevator Buildings
- Mixed Residential & Commercial Buildings
- Commercial & Office Buildings
- Industrial & Manufacturing
- Transportation & Utility
- Public Facilities & Institutions
- Open Space & Outdoor Recreation
- Parking Facilities
- Vacant Land
- Other/No Data

2992 Block

17 Lot

NOTES:
1. LAND USE DATA PROVIDED BY THE NEW YORK CITY DEPARTMENT OF CITY PLANNING.

400 0 400
SCALE IN FEET

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Project
INGRAHAM STREET LOGISTICS
BLOCK No. 2992, LOT No. 17
BROOKLYN NEW YORK

Figure Title
SURROUNDING LAND USE MAP

Project No. 170588003
Date 2/26/2026
Scale 1"=400'
Drawn By MG
Figure No. 3

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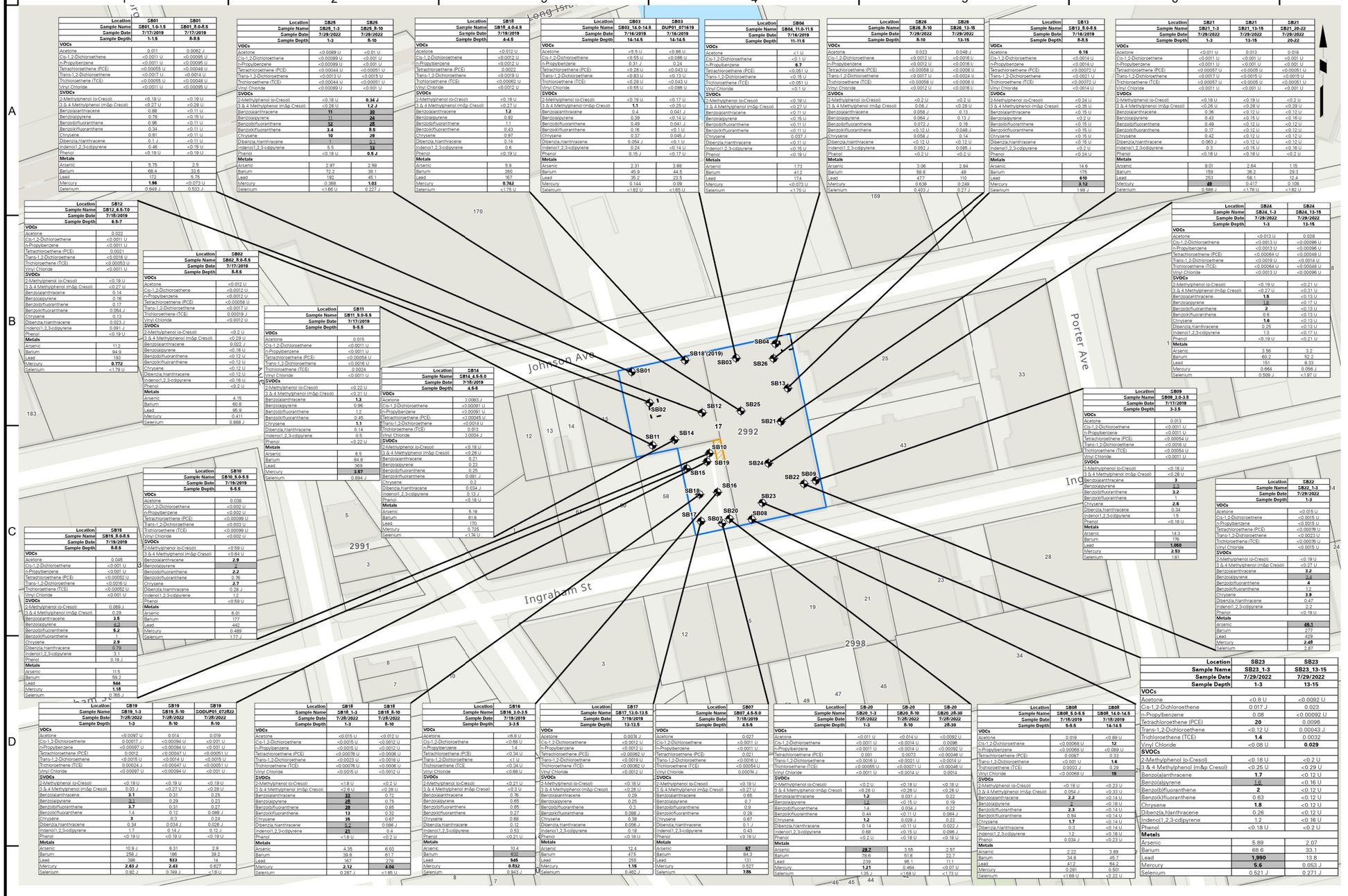


Legend

- Soil Boring
- Approximate Site Location
- Tax Parcels
- Boiler Room
- Paper Recycling Area

Location	SB01	SB01
Sample Name	SB01_1.0-1.5	SB01_8.0-8.5
Sample Date	7/17/2019	7/17/2019
Sample Depth	1-1.5	8-8.5
VOCs		
Acetone	0.011	0.0062 J
Cis-1,2-Dichloroethene	<0.0011 U	<0.00095 U
n-Propylbenzene	<0.0011 U	<0.00095 U
Tetrachloroethene (PCE)	<0.00055 U	<0.00048 U
Trans-1,2-Dichloroethene	<0.0011 U	<0.0014 U
Trichloroethene (TCE)	<0.00055 U	<0.00048 U
Vinyl Chloride	<0.0011 U	<0.00095 U
SVOCs		
2-Methylphenol (o-Cresol)	<0.19 U	<0.19 U
3 & 4 Methylphenol (m&p Cresol)	<0.27 U	<0.28 U
Benzoic Acid	0.78	<0.15 U
Benzo(a)anthracene	0.96	<0.11 U
Benzo(a)pyrene	0.94	<0.11 U
Benzo(b)fluoranthene	1.1	<0.11 U
Benzo(k)fluoranthene	0.36	<0.11 U
Chrysene	0.81	<0.11 U
Dibenz(a,h)anthracene	0.1 J	<0.11 U
Indeno(1,2,3-cd)pyrene	0.46	<0.15 U
Phenol	<0.19 U	<0.19 U
Metals		
Arsenic	5.75	2.5
Barium	68.4	33.6
Lead	172	5.75
Mercury	**1.96**	0.073 U
Selenium	0.849 J	0.533 J

Location	SB25	SB25
Sample Name	SB25_1-3	SB25_8-10
Sample Date	7/29/2022	7/29/2022
Sample Depth	1-3	8-10
VOCs		
Acetone	<0.0089 U	<0.01 U
Cis-1,2-Dichloroethene	<0.00089 U	<0.001 U
n-Propylbenzene	<0.00089 U	<0.001 U
Tetrachloroethene (PCE)	<0.00043 U	<0.00051 U
Trans-1,2-Dichloroethene	<0.0013 U	<0.0015 U
Trichloroethene (TCE)	<0.00043 U	<0.00051 U
Vinyl Chloride	<0.00089 U	<0.001 U
SVOCs		
2-Methylphenol (o-Cresol)	<0.18 U	**0.34 J**
3 & 4 Methylphenol (m&p Cresol)	<0.26 U	**1.2 J**
Benzoic Acid	**11**	**30**
Benzo(a)anthracene	11	**24**
Benzo(a)pyrene	**12**	**28**
Benzo(b)fluoranthene	**3.4**	**8.5**
Benzo(k)fluoranthene	**10**	**29**
Chrysene	11	**31**
Dibenz(a,h)anthracene	1.5	**3.3**
Indeno(1,2,3-cd)pyrene	5.5	**13**
Phenol	<0.19 U	**0.5 J**
Metals		
Arsenic	2.97	2.58
Barium	72.2	38.1
Lead	192	45.1
Mercury	0.368	**1.03**
Selenium	<1.66 U	0.227 J

Location	SB18	SB18
Sample Name	SB18_4.0-4.5	
Sample Date	7/19/2019	
Sample Depth	4-4.5	
VOCs		
Acetone	<0.012 U	
Cis-1,2-Dichloroethene	<0.0012 U	
n-Propylbenzene	<0.0012 U	
Tetrachloroethene (PCE)	0.0032	
Trans-1,2-Dichloroethene	<0.0019 U	
Trichloroethene (TCE)	<0.000662 U	
Vinyl Chloride	<0.0012 U	
SVOCs		
2-Methylphenol (o-Cresol)	<0.19 U	
3 & 4 Methylphenol (m&p Cresol)	<0.27 U	
Benzoic Acid	**1.2**	
Benzo(a)anthracene	0.92	
Benzo(a)pyrene	1.1	
Benzo(b)fluoranthene	1.1	
Benzo(k)fluoranthene	0.43	
Chrysene	0.97	
Dibenz(a,h)anthracene	0.14	
Indeno(1,2,3-cd)pyrene	0.6	
Phenol	<0.19 U	
Metals		
Arsenic	5.9	
Barium	260	
Lead	163	
Mercury	**0.742**	
Selenium	<1.75 U	

Location	SB03	SB03
Sample Name	SB03_14.0-14.5	DUP01_071619
Sample Date	7/16/2019	7/16/2019
Sample Depth	14-14.5	14-14.5
VOCs		
Acetone	<5.5 U	<0.86 U
Cis-1,2-Dichloroethene	<0.55 U	<0.086 U
n-Propylbenzene	0.31 J	0.24
Tetrachloroethene (PCE)	<0.28 U	<0.043 U
Trans-1,2-Dichloroethene	<0.83 U	<0.13 U
Trichloroethene (TCE)	<0.28 U	<0.043 U
Vinyl Chloride	<0.55 U	<0.086 U
SVOCs		
2-Methylphenol (o-Cresol)	<0.19 U	<0.17 U
3 & 4 Methylphenol (m&p Cresol)	**1.1**	<0.28 U
Benzoic Acid	0.4	0.041 J
Benzo(a)anthracene	0.39	<0.14 U
Benzo(a)pyrene	0.49	0.041 J
Benzo(b)fluoranthene	0.16	<0.1 U
Benzo(k)fluoranthene	0.37	0.045 J
Chrysene	0.054 J	<0.1 U
Dibenz(a,h)anthracene	0.24	<0.14 U
Indeno(1,2,3-cd)pyrene	0.15 J	<0.17 U
Metals		
Arsenic	2.31	3.88
Barium	45.9	44.5
Lead	35.2	23.5
Mercury	0.144	0.09
Selenium	<1.83 U	<1.66 U

Location	SB04
Sample Name	SB04_11.0-11.5
Sample Date	7/16/2019
Sample Depth	11-11.5
VOCs	
Acetone	<1 U
Cis-1,2-Dichloroethene	<0.1 U
n-Propylbenzene	**6.7**
Tetrachloroethene (PCE)	<0.051 U
Trans-1,2-Dichloroethene	<0.16 U
Trichloroethene (TCE)	<0.051 U
Vinyl Chloride	<0.1 U
SVOCs	
2-Methylphenol (o-Cresol)	<0.19 U
3 & 4 Methylphenol (m&p Cresol)	<0.27 U
Benzoic Acid	<0.15 U
Benzo(a)anthracene	<0.11 U
Benzo(a)pyrene	<0.11 U
Benzo(b)fluoranthene	<0.11 U
Benzo(k)fluoranthene	<0.11 U
Chrysene	0.037 J
Dibenz(a,h)anthracene	<0.11 U
Indeno(1,2,3-cd)pyrene	<0.16 U
Phenol	<0.19 U
Metals	
Arsenic	1.73
Barium	41.2
Lead	17.4
Mercury	<0.073 U
Selenium	<1.75 U

Location	SB26	SB26
Sample Name	SB26_8-10	SB26_13-15
Sample Date	7/29/2022	7/29/2022
Sample Depth	8-10	13-15
VOCs		
Acetone	0.023	0.048 J
Cis-1,2-Dichloroethene	<0.0012 U	<0.0016 U
n-Propylbenzene	<0.0012 U	<0.0016 U
Tetrachloroethene (PCE)	<0.00058 U	<0.0008 U
Trans-1,2-Dichloroethene	<0.0007 U	<0.0024 U
Trichloroethene (TCE)	<0.00058 U	<0.0008 U
Vinyl Chloride	<0.0012 U	<0.0016 U
SVOCs		
2-Methylphenol (o-Cresol)	<0.2 U	<0.2 U
3 & 4 Methylphenol (m&p Cresol)	0.08 J	<0.28 U
Benzoic Acid	0.058 J	0.13 J
Benzo(a)anthracene	0.064 J	0.13 J
Benzo(a)pyrene	0.072 J	0.16
Benzo(b)fluoranthene	<0.12 U	0.048 J
Benzo(k)fluoranthene	0.058 J	0.14
Chrysene	<0.12 U	<0.12 U
Dibenz(a,h)anthracene	0.052 J	0.085 J
Indeno(1,2,3-cd)pyrene	<0.2 U	<0.2 U
Phenol	<0.24 U	<0.24 U
Metals		
Arsenic	3.06	2.84
Barium	58.8	49
Lead	477	110
Mercury	0.636	0.249
Selenium	0.403 J	0.27 J

Location	SB13	
Sample Name	SB13_8.0-8.5	
Sample Date	7/16/2019	
Sample Depth	8-8.5	
VOCs		
Acetone	**0.16**	
Cis-1,2-Dichloroethene	<0.0014 U	
n-Propylbenzene	<0.0014 U	
Tetrachloroethene (PCE)	<0.00072 U	
Trans-1,2-Dichloroethene	<0.0021 U	
Trichloroethene (TCE)	<0.00072 U	
Vinyl Chloride	<0.0014 U	
SVOCs		
2-Methylphenol (o-Cresol)	<0.24 U	
3 & 4 Methylphenol (m&p Cresol)	<0.35 U	
Benzoic Acid	<0.19 U	
Benzo(a)anthracene	<0.2 U	
Benzo(a)pyrene	<0.15 U	
Benzo(b)fluoranthene	<0.15 U	
Benzo(k)fluoranthene	<0.15 U	
Chrysene	<0.15 U	
Dibenz(a,h)anthracene	<0.15 U	
Indeno(1,2,3-cd)pyrene	<0.2 U	
Phenol	<0.24 U	
Metals		
Arsenic	14.6	
Barium	176	
Lead	**610**	
Mercury	**3.12**	
Selenium	1.98 J	

Location	SB21	SB21	SB21
Sample Name	SB21_1-3	SB21_13-15	SB21_20-22
Sample Date	7/29/2022	7/29/2022	7/29/2022
Sample Depth	1-3	13-15	20-22
VOCs			
Acetone	<0.011 U	0.013	0.019
Cis-1,2-Dichloroethene	<0.001 U	<0.001 U	<0.001 U
n-Propylbenzene	<0.001 U	<0.001 U	<0.001 U
Tetrachloroethene (PCE)	<0.00057 U	<0.0005 U	<0.00051 U
Trans-1,2-Dichloroethene	<0.0017 U	<0.0015 U	<0.0015 U
Trichloroethene (TCE)	<0.00057 U	<0.0005 U	<0.00051 U
Vinyl Chloride	<0.0011 U	<0.001 U	<0.001 U
SVOCs			
2-Methylphenol (o-Cresol)	<0.18 U	<0.19 U	<0.2 U
3 & 4 Methylphenol (m&p Cresol)	<0.26 U	<0.28 U	<0.29 U
Benzoic Acid	159	36.2	29.3
Benzo(a)anthracene	0.43	<0.15 U	<0.16 U
Benzo(a)pyrene	0.49	<0.12 U	<0.12 U
Benzo(b)fluoranthene	0.17	<0.12 U	<0.12 U
Chrysene	0.42	<0.12 U	<0.12 U
Dibenz(a,h)anthracene	0.063 J	<0.12 U	<0.12 U
Indeno(1,2,3-cd)pyrene	0.3	<0.15 U	<0.16 U
Phenol	<0.18 U	<0.19 U	<0.2 U
Metals			
Arsenic	9.01	2.64	1.15
Barium	159	36.2	29.3
Lead	253	58.1	12.4
Mercury	**49**	0.417	0.108
Selenium	0.588 J	<1.78 U	<1.82 U

Location	SB24	SB24
Sample Name	SB24_1-3	SB24_13-15
Sample Date	7/29/2022	7/29/2022
Sample Depth	1-3	13-15
VOCs		
Acetone	<0.013 U	0.028
Cis-1,2-Dichloroethene	<0.0013 U	<0.00096 U
n-Propylbenzene	<0.0013 U	<0.00096 U
Tetrachloroethene (PCE)	<0.00064 U	<0.00048 U
Trans-1,2-Dichloroethene	<0.0019 U	<0.0014 U
Trichloroethene (TCE)	<0.00064 U	<0.00048 U
Vinyl Chloride	<0.0013 U	<0.00096 U
SVOCs		
2-Methylphenol (o-Cresol)	<0.19 U	<0.21 U
3 & 4 Methylphenol (m&p Cresol)	<0.27 U	<0.31 U
Benzoic Acid	**1.5**	<0.13 U
Benzo(a)anthracene	1.8	<0.17 U
Benzo(a)pyrene	**2**	<0.13 U
Benzo(b)fluoranthene	0.6	<0.13 U
Benzo(k)fluoranthene	**1.6**	<0.13 U
Chrysene	0.25	<0.13 U
Dibenz(a,h)anthracene	1.3	<0.17 U
Indeno(1,2,3-cd)pyrene	<0.19 U	<0.21 U
Phenol	**1**	
Metals		
Arsenic	3.56	3.2
Barium	60.2	52.2
Lead	151	8.33
Mercury	0.664	0.056 J
Selenium	0.509 J	<1.97 U

Location	SB12
Sample Name	SB12_6.5-7.0
Sample Date	7/18/2019
Sample Depth	6.5-7
VOCs	
Acetone	0.022
Cis-1,2-Dichloroethene	<0.0011 U
n-Propylbenzene	<0.0011 U
Tetrachloroethene (PCE)	0.0021
Trans-1,2-Dichloroethene	<0.0016 U
Trichloroethene (TCE)	<0.00053 U
Vinyl Chloride	<0.0011 U
SVOCs	
2-Methylphenol (o-Cresol)	<0.19 U
3 & 4 Methylphenol (m&p Cresol)	<0.27 U
Benzoic Acid	0.14
Benzo(a)anthracene	0.16
Benzo(a)pyrene	0.17
Benzo(b)fluoranthene	0.054 J
Benzo(k)fluoranthene	0.13
Chrysene	0.023 J
Dibenz(a,h)anthracene	0.091 J
Indeno(1,2,3-cd)pyrene	<0.19 U
Phenol	<0.19 U
Metals	
Arsenic	11.2
Barium	84.9
Lead	193
Mercury	**0.772**
Selenium	<1.79 U

Location	SB02
Sample Name	SB02_8.0-8.5
Sample Date	7/17/2019
Sample Depth	8-8.5
VOCs	
Acetone	<0.012 U
Cis-1,2-Dichloroethene	<0.0012 U
n-Propylbenzene	<0.0012 U
Tetrachloroethene (PCE)	<0.00058 U
Trans-1,2-Dichloroethene	<0.0017 U
Trichloroethene (TCE)	0.00019 J
Vinyl Chloride	<0.0012 U
SVOCs	
2-Methylphenol (o-Cresol)	<0.2 U
3 & 4 Methylphenol (m&p Cresol)	<0.29 U
Benzoic Acid	0.022 J
Benzo(a)anthracene	<0.16 U
Benzo(a)pyrene	<0.12 U
Benzo(b)fluoranthene	<0.12 U
Benzo(k)fluoranthene	<0.12 U
Chrysene	<0.12 U
Dibenz(a,h)anthracene	<0.12 U
Indeno(1,2,3-cd)pyrene	<0.16 U
Phenol	<0.2 U
Metals	
Arsenic	4.16
Barium	60.8
Lead	95.9
Mercury	0.411
Selenium	0.888 J

Location	SB11
Sample Name	SB11_5.0-5.5
Sample Date	7/17/2019
Sample Depth	5-5.5
VOCs	
Acetone	0.015
Cis-1,2-Dichloroethene	<0.0011 U
n-Propylbenzene	<0.0011 U
Tetrachloroethene (PCE)	<0.00054 U
Trans-1,2-Dichloroethene	<0.0016 U
Trichloroethene (TCE)	0.0024
Vinyl Chloride	<0.0011 U
SVOCs	
2-Methylphenol (o-Cresol)	<0.22 U
3 & 4 Methylphenol (m&p Cresol)	<0.31 U
Benzoic Acid	**1.3**
Benzo(a)anthracene	0.96
Benzo(a)pyrene	1.2
Benzo(b)fluoranthene	0.45
Benzo(k)fluoranthene	**1.1**
Chrysene	1.1
Dibenz(a,h)anthracene	0.14
Indeno(1,2,3-cd)pyrene	0.5
Phenol	<0.22 U
Metals	
Arsenic	6.5
Barium	84.8
Lead	369
Mercury	**3.57**
Selenium	0.894 J

Location	SB14
Sample Name	SB14_4.5-5.0
Sample Date	7/18/2019
Sample Depth	4.5-5
VOCs	
Acetone	3.0083 J
Cis-1,2-Dichloroethene	<0.00091 U
n-Propylbenzene	<0.00091 U
Tetrachloroethene (PCE)	<0.00045 U
Trans-1,2-Dichloroethene	<0.0014 U
Trichloroethene (TCE)	0.013
Vinyl Chloride	0.0004 J
SVOCs	
2-Methylphenol (o-Cresol)	<0.18 U
3 & 4 Methylphenol (m&p Cresol)	<0.26 U
Benzoic Acid	0.21
Benzo(a)anthracene	0.23
Benzo(a)pyrene	0.25
Benzo(b)fluoranthene	0.091 J
Benzo(k)fluoranthene	0.2
Chrysene	0.034 J
Dibenz(a,h)anthracene	0.13 J
Indeno(1,2,3-cd)pyrene	<0.18 U
Phenol	<0.18 U
Metals	
Arsenic	5.18
Barium	81.8
Lead	170
Mercury	0.726
Selenium	<1.74 U

Location	SB09
Sample Name	SB09_3.0-3.5
Sample Date	7/17/2019
Sample Depth	3-3.5
VOCs	
Acetone	0.013
Cis-1,2-Dichloroethene	<0.0011 U
n-Propylbenzene	<0.0011 U
Tetrachloroethene (PCE)	<0.00054 U
Trans-1,2-Dichloroethene	<0.0016 U
Trichloroethene (TCE)	<0.00054 U
Vinyl Chloride	<0.0011 U
SVOCs	
2-Methylphenol (o-Cresol)	<0.18 U
3 & 4 Methylphenol (m&p Cresol)	<0.26 U
Benzoic Acid	**3**
Benzo(a)anthracene	**2.3**
Benzo(a)pyrene	**3.2**
Benzo(b)fluoranthene	3
Benzo(k)fluoranthene	**2.6**
Chrysene	0.34
Dibenz(a,h)anthracene	1.5
Indeno(1,2,3-cd)pyrene	<0.18 U
Phenol	**0.83**
Metals	
Arsenic	14.3
Barium	176
Lead	**1,060**
Mercury	**2.53**
Selenium	1.81

Location	SB22
Sample Name	SB22_1-3
Sample Date	7/29/2022
Sample Depth	1-3
VOCs	
Acetone	<0.015 U
Cis-1,2-Dichloroethene	<0.0015 U
n-Propylbenzene	<0.0015 U
Tetrachloroethene (PCE)	<0.00076 U
Trans-1,2-Dichloroethene	<0.0023 U
Trichloroethene (TCE)	<0.00076 U
Vinyl Chloride	<0.0015 U
SVOCs	
2-Methylphenol (o-Cresol)	<0.19 U
3 & 4 Methylphenol (m&p Cresol)	<0.27 U
Benzo(a)anthracene	**3.2**
Benzo(a)pyrene	**3.4**
Benzo(b)fluoranthene	**4**
Benzo(k)fluoranthene	1.2
Chrysene	**3.9**
Dibenz(a,h)anthracene	0.47
Indeno(1,2,3-cd)pyrene	2.2
Phenol	<0.19 U
Metals	
Arsenic	**46.1**
Barium	277
Lead	429
Mercury	**2.48**
Selenium	2.87

Location	SB15
Sample Name	SB15_8.0-8.5
Sample Date	7/19/2019
Sample Depth	8-8.5
VOCs	
Acetone	0.045
Cis-1,2-Dichloroethene	<0.001 U
n-Propylbenzene	<0.001 U
Tetrachloroethene (PCE)	<0.00052 U
Trans-1,2-Dichloroethene	<0.0016 U
Trichloroethene (TCE)	<0.00052 U
Vinyl Chloride	<0.001 U
SVOCs	
2-Methylphenol (o-Cresol)	0.069 J
3 & 4 Methylphenol (m&p Cresol)	0.29
Benzoic Acid	**3.5**
Benzo(a)anthracene	**4.2**
Benzo(a)pyrene	**5.2**
Benzo(b)fluoranthene	1
Benzo(k)fluoranthene	**2.9**
Chrysene	0.79
Dibenz(a,h)anthracene	3.1
Indeno(1,2,3-cd)pyrene	0.19 J
Metals	
Arsenic	11.5
Barium	69.2
Lead	**544**
Mercury	**1.18**
Selenium	0.765 J

Location	SB10
Sample Name	SB10_6.0-6.5
Sample Date	7/18/2019
Sample Depth	6-6.5
VOCs	
Acetone	0.038
Cis-1,2-Dichloroethene	<0.002 U
n-Propylbenzene	<0.002 U
Tetrachloroethene (PCE)	<0.00099 U
Trans-1,2-Dichloroethene	<0.003 U
Trichloroethene (TCE)	<0.00099 U
Vinyl Chloride	<0.002 U
SVOCs	
2-Methylphenol (o-Cresol)	<0.59 U
3 & 4 Methylphenol (m&p Cresol)	<0.84 U
Benzoic Acid	**2.9**
Benzo(a)anthracene	2
Benzo(a)pyrene	**2.2**
Benzo(b)fluoranthene	0.76
Benzo(k)fluoranthene	0.76
Chrysene	**2.7**
Dibenz(a,h)anthracene	0.28 J
Indeno(1,2,3-cd)pyrene	1.2
Phenol	<0.59 U
Metals	
Arsenic	6.01
Barium	177
Lead	442
Mercury	0.489
Selenium	1.77 J

Location	SB19	SB19	SB19
Sample Name	SB19_1-3	SB19_8-10	SDDUP01_072822
Sample Date	7/28/2022	7/28/2022	7/28/2022
Sample Depth	1-3	8-10	8-10
VOCs			
Acetone	<0.0097 U	0.014	0.019
Cis-1,2-Dichloroethene	0.00077 J	<0.00094 U	<0.001 U
n-Propylbenzene	<0.00097 U	<0.00094 U	<0.001 U
Tetrachloroethene (PCE)	0.0012	<0.00047 U	<0.00051 U
Trans-1,2-Dichloroethene	<0.0015 U	<0.0014 U	<0.0015 U
Trichloroethene (TCE)	0.00024 J	<0.00047 U	<0.00051 U
Vinyl Chloride	<0.00097 U	<0.00094 U	<0.001 U
SVOCs			
2-Methylphenol (o-Cresol)	<0.19 U	<0.19 U	<0.19 U
3 & 4 Methylphenol (m&p Cresol)	0.03 J	<0.27 U	<0.28 U
Benzoic Acid	**3.1**	0.31	0.25
Benzo(a)anthracene	**3.1**	0.29	0.23
Benzo(a)pyrene	**3.7**	0.31	0.27
Benzo(b)fluoranthene	1.4	0.12	0.089 J
Benzo(k)fluoranthene	**3**	0.3	0.24
Chrysene	0.34	0.034 J	0.026 J
Dibenz(a,h)anthracene	1.7	0.14 J	0.12 J
Indeno(1,2,3-cd)pyrene	<0.19 U	<0.19 U	<0.19 U
Phenol			
Metals			
Arsenic	10.9 J	8.31	2.8
Barium	258 J	186	39.2
Lead	386	**533**	14
Mercury	**2.63 J**	**2.43**	0.627
Selenium	0.82 J	0.749 J	<1.8 U

Location	SB18	SB18
Sample Name	SB18_1-3	SB18_8-10
Sample Date	7/28/2022	7/28/2022
Sample Depth	1-3	8-10
VOCs		
Acetone	<0.015 U	<0.012 U
Cis-1,2-Dichloroethene	<0.0015 U	<0.0012 U
n-Propylbenzene	<0.0015 U	<0.0012 U
Tetrachloroethene (PCE)	<0.00076 U	<0.0006 U
Trans-1,2-Dichloroethene	<0.0023 U	<0.0018 U
Trichloroethene (TCE)	<0.00076 U	<0.0006 U
Vinyl Chloride	<0.0015 U	<0.0012 U
SVOCs		
2-Methylphenol (o-Cresol)	<1.8 U	<0.2 U
3 & 4 Methylphenol (m&p Cresol)	<2.6 U	<0.28 U
Benzoic Acid	**33**	0.72
Benzo(a)anthracene	**28**	0.75
Benzo(a)pyrene	**29**	0.85
Benzo(b)fluoranthene	**13**	0.32
Chrysene	**35**	0.67
Dibenz(a,h)anthracene	5.2	0.086 J
Indeno(1,2,3-cd)pyrene	**21**	0.4
Phenol	<1.8 U	<0.2 U
Metals		
Arsenic	4.35	6.03
Barium	39.8	61.7
Lead	167	279
Mercury	**2.12**	**4.04**
Selenium	0.287 J	<1.85 U

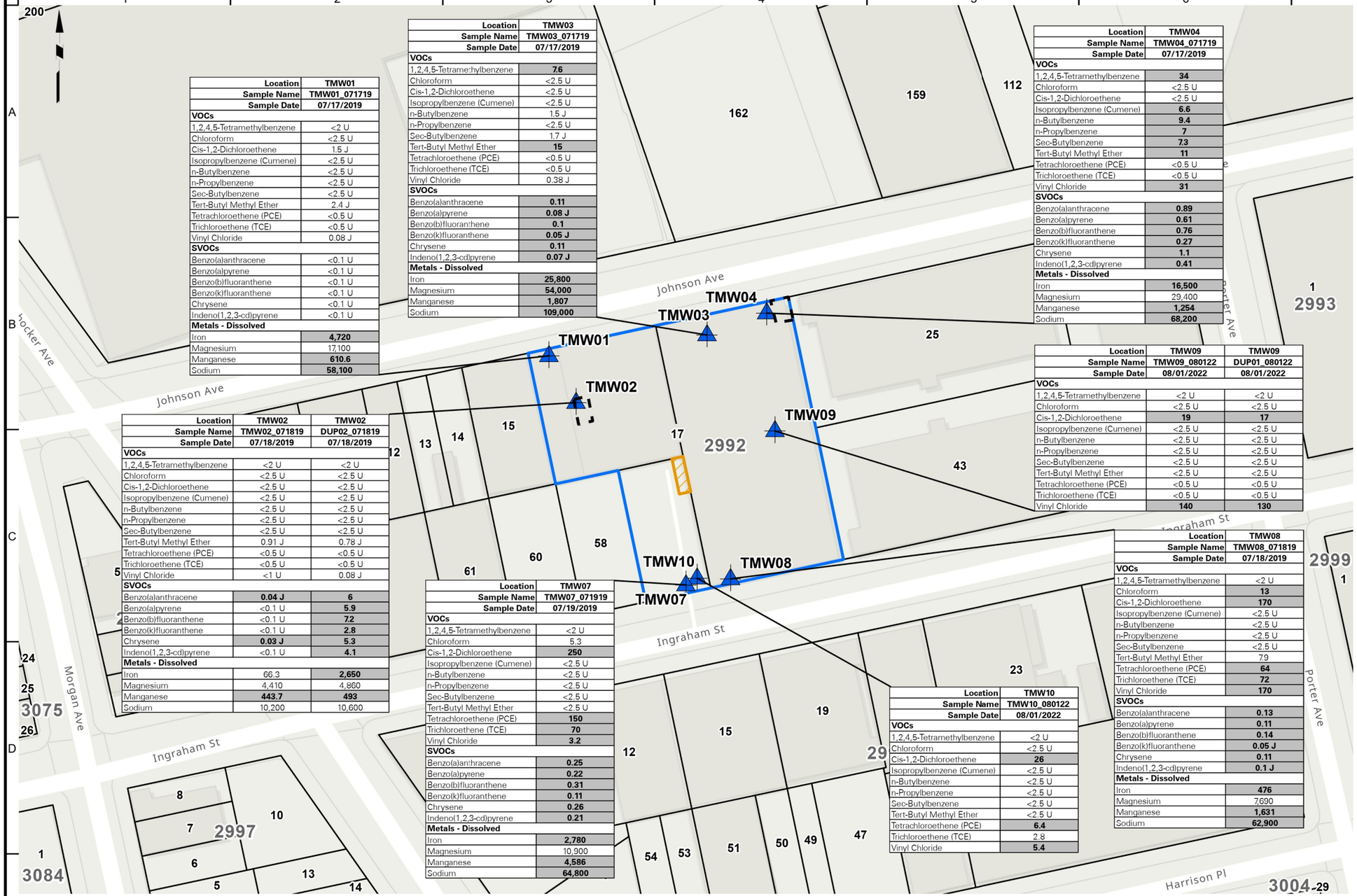
Location	SB16
Sample Name	SB16_3.0-3.5
Sample Date	7/19/2019
Sample Depth	3-3.5
VOCs	
Acetone	<6.8 U
Cis-1,2-Dichloroethene	<0.68 U
n-Propylbenzene	1.4
Tetrachloroethene (PCE)	<0.34 U
Trans-1,2-Dichloroethene	<1 U
Trichloroethene (TCE)	<0.34 U
Vinyl Chloride	<0.68 U
SVOCs	
2-Methylphenol (o-Cresol)	<0.21 U
3 & 4 Methylphenol (m&p Cresol)	<0.3 U
Benzoic Acid	0.26
Benzo(a)anthracene	0.65
Benzo(a)pyrene	0.85
Benzo(b)fluoranthene	0.27
Benzo(k)fluoranthene	0.68
Chrysene	0.12
Dibenz(a,h)anthracene	0.53
Indeno(1,2,3-cd)pyrene	<0.21 U
Phenol	
Metals	
Arsenic	10.4
Barium	**822**
Lead	**545**
Mercury	**0.832**
Selenium	0.943 J

Location	SB17
Sample Name	SB17_13.0-13.5
Sample Date	7/19/2019
Sample Depth	13-13.5
VOCs	
Acetone	0.0076 J
Cis-1,2-Dichloroethene	<0.0012 U
n-Propylbenzene	<0.0012 U
Tetrachloroethene (PCE)	<0.00062 U
Trans-1,2-Dichloroethene	0.0019 U
Trichloroethene (TCE)	<0.00062 U
Vinyl Chloride	<0.0012 U
SVOCs	
2-Methylphenol (o-Cresol)	<0.18 U
3 & 4 Methylphenol (m&p Cresol)	<0.26 U
Benzoic Acid	0.088 J
Benzo(a)anthracene	0.29
Benzo(a)pyrene	0.35
Benzo(b)fluoranthene	0.3
Benzo(k)fluoranthene	0.088 J
Chrysene	0.096 J
Dibenz(a,h)anthracene	0.18
Indeno(1,2,3-cd)pyrene	0.18
Phenol	<0.2 U
Metals	
Arsenic	12.4
Barium	47.5
Lead	255
Mercury	**1.16**
Selenium	0.462 J

Location	SB07
Sample Name	SB07_4.5-5.0
Sample Date	7/18/2019
Sample Depth	4.5-5
VOCs	
Acetone	0.027
Cis-1,2-Dichloroethene	<0.0011 U
n-Propylbenzene	<0.0011 U
Tetrachloroethene (PCE)	0.021
Trans-1,2-Dichloroethene	<0.0016 U
Trichloroethene (TCE)	<0.00054 U
Vinyl Chloride	0.00074 J
SVOCs	
2-Methylphenol (o-Cresol)	<0.19 U
3 & 4 Methylphenol (m&p Cresol)	<0.27 U
Benzoic Acid	0.65
Benzo(a)anthracene	0.7
Benzo(a)pyrene	0.9
Benzo(b)fluoranthene	0.28
Benzo(k)fluoranthene	0.67
Chrysene	0.1 J
Dibenz(a,h)anthracene	0.43
Indeno(1,2,3-cd)pyrene	<0.19 U
Phenol	
Metals	
Arsenic	**67**
Barium	84.3
Lead	131
Mercury	0.527
Selenium	**7.86**

Location	SB-20	SB-20	SB-20	SB-20
Sample Name	SB20_1-3	SB20_8.10	SB20_18-20	SB20_28-30
Sample Date	7/28/2022	7/28/2022	7/28/2022	7/28/2022
Sample Depth	1-3	8-10	18-20	28-30
VOCs				
Acetone	<0.011 U	<0.014 U	<0.0092 U	<0.0092 U
Cis-1,2-Dichloroethene	<0.011 U	<0.0014 U	0.0096	<0.0092 U
n-Propylbenzene	<0.001 U	<0.0014 U	<0.00092 U	<0.00092 U
Tetrachloroethene (PCE)	0.001	0.0073	<0.00046 U	<0.00046 U
Trans-1,2-Dichloroethene	<0.0016 U	<0.0021 U	<0.0014 U	<0.0014 U
Trichloroethene (TCE)	<0.00056 U	<0.00071 U	<0.00048 U	<0.00048 U
Vinyl Chloride	<0.0011 U	<0.0014 U	0.0014	<0.00096 U
SVOCs				
2-Methylphenol (o-Cresol)	<0.2 U	<0.18 U	<0.18 U	<0.18 U
3 & 4 Methylphenol (m&p Cresol)	<0.28 U	<0.26 U	<0.26 U	<0.26 U
Benzoic Acid	**1.2**	0.031 J	0.22	0.19
Benzo(a)anthracene	**1.2**	<0.15 U	0.19	<0.15 U
Benzo(a)pyrene	1.4	0.034 J	0.22	<0.15 U
Benzo(b)fluoranthene	0.44	<0.11 U	0.084 J	<0.11 U
Benzo(k)fluoranthene	**1.2**	0.028 J	0.22	<0.11 U
Chrysene	0.14	<0.11 U	0.022 J	<0.11 U
Dibenz(a,h)anthracene	0.66	<0.15 U	0.096 J	<0.15 U
Indeno(1,2,3-cd)pyrene	<0.2 U	<0.18 U	<0.18 U	<0.18 U
Phenol				
Metals				
Arsenic	**29.7**	3.55	2.57	
Barium	78.6	51.8	22.7	
Lead	239	96.1	11.1	
Mercury	**1.21**	0.464	<0.07 U	
Selenium	1.35 J	<1.68 U	<1.73 U	

Location	SB08	SB08
Sample Name	SB08_5.0-5.5	SB08_14.0-14.5
Sample Date	7/18/2019	7/18/2019
Sample Depth	5-5.5	14-14.5
VOCs		
Acetone	0.019	<0.89 U
Cis-1,2-Dichloroethene	<0.00068 U	**12**
n-Propylbenzene	<0.00068 U	<0.089 U
Tetrachloroethene (PCE)	0.0067	0.73
Trans-1,2-Dichloroethene	<0.001 U	**1.6**
Trichloroethene (TCE)	0.0003 J	0.29
Vinyl Chloride	<0.00068 U	**19**
SVOCs		
2-Methylphenol (o-Cresol)	<0.18 U	<0.23 U
3 & 4 Methylphenol (m&p Cresol)	0.054 J	<0.33 U
Benzoic Acid	**2.2**	<0.14 U
Benzo(a)anthracene	**2**	<0.18 U
Benzo(a)pyrene	**2.3**	<0.14 U
Benzo(b)fluoranthene	0.94	<0.14 U
Benzo(k)fluoranthene	**1.7**	<0.14 U
Chrysene	0.3	<0.14 U
Dibenz(a,h)anthracene	1.2	<0.18 U
Indeno(1,2,3-cd)pyrene	0.034 J	<0.23 U
Phenol		
Metals		
Arsenic	2.22



Location	TMW01
Sample Name	TMW01_071719
Sample Date	07/17/2019
VOCs	
1,2,4,5-Tetramethylbenzene	<2 U
Chloroform	<2.5 U
Cis-1,2-Dichloroethene	1.5 J
Isopropylbenzene (Cumene)	<2.5 U
n-Butylbenzene	<2.5 U
n-Propylbenzene	<2.5 U
Sec-Butylbenzene	<2.5 U
Tert-Butyl Methyl Ether	2.4 J
Tetrachloroethene (PCE)	<0.5 U
Trichloroethene (TCE)	<0.5 U
Vinyl Chloride	0.08 J
SVOCs	
Benzo(a)anthracene	<0.1 U
Benzo(a)pyrene	<0.1 U
Benzo(b)fluoranthene	<0.1 U
Benzo(k)fluoranthene	<0.1 U
Chrysene	<0.1 U
Indeno(1,2,3-cd)pyrene	<0.1 U
Metals - Dissolved	
Iron	**4,720**
Magnesium	17,100
Manganese	**610.6**
Sodium	**58,100**

Location	TMW03
Sample Name	TMW03_071719
Sample Date	07/17/2019
VOCs	
1,2,4,5-Tetramethylbenzene	**7.6**
Chloroform	<2.5 U
Cis-1,2-Dichloroethene	<2.5 U
Isopropylbenzene (Cumene)	<2.5 U
n-Butylbenzene	1.5 J
n-Propylbenzene	<2.5 U
Sec-Butylbenzene	1.7 J
Tert-Butyl Methyl Ether	**15**
Tetrachloroethene (PCE)	<0.5 U
Trichloroethene (TCE)	<0.5 U
Vinyl Chloride	0.38 J
SVOCs	
Benzo(a)anthracene	**0.11**
Benzo(a)pyrene	**0.08 J**
Benzo(b)fluoranthene	**0.1**
Benzo(k)fluoranthene	**0.05 J**
Chrysene	**0.11**
Indeno(1,2,3-cd)pyrene	**0.07 J**
Metals - Dissolved	
Iron	**25,800**
Magnesium	**54,000**
Manganese	**1,807**
Sodium	**109,000**

Location	TMW04
Sample Name	TMW04_071719
Sample Date	07/17/2019
VOCs	
1,2,4,5-Tetramethylbenzene	**34**
Chloroform	<2.5 U
Cis-1,2-Dichloroethene	<2.5 U
Isopropylbenzene (Cumene)	**6.6**
n-Butylbenzene	**9.4**
n-Propylbenzene	**7**
Sec-Butylbenzene	**7.3**
Tert-Butyl Methyl Ether	**11**
Tetrachloroethene (PCE)	<0.5 U
Trichloroethene (TCE)	<0.5 U
Vinyl Chloride	**31**
SVOCs	
Benzo(a)anthracene	**0.89**
Benzo(a)pyrene	**0.61**
Benzo(b)fluoranthene	**0.76**
Benzo(k)fluoranthene	**0.27**
Chrysene	**1.1**
Indeno(1,2,3-cd)pyrene	**0.41**
Metals - Dissolved	
Iron	**16,500**
Magnesium	29,400
Manganese	**1,254**
Sodium	**68,200**

Location	TMW09	TMW09
Sample Name	TMW09_080122	DUP01_080122
Sample Date	08/01/2022	08/01/2022
VOCs		
1,2,4,5-Tetramethylbenzene	<2 U	<2 U
Chloroform	<2.5 U	<2.5 U
Cis-1,2-Dichloroethene	**19**	**17**
Isopropylbenzene (Cumene)	<2.5 U	<2.5 U
n-Butylbenzene	<2.5 U	<2.5 U
n-Propylbenzene	<2.5 U	<2.5 U
Sec-Butylbenzene	<2.5 U	<2.5 U
Tert-Butyl Methyl Ether	<2.5 U	<2.5 U
Tetrachloroethene (PCE)	<0.5 U	<0.5 U
Trichloroethene (TCE)	<0.5 U	<0.5 U
Vinyl Chloride	**140**	**130**

Location	TMW02	TMW02
Sample Name	TMW02_071819	DUP02_071819
Sample Date	07/18/2019	07/18/2019
VOCs		
1,2,4,5-Tetramethylbenzene	<2 U	<2 U
Chloroform	<2.5 U	<2.5 U
Cis-1,2-Dichloroethene	<2.5 U	<2.5 U
Isopropylbenzene (Cumene)	<2.5 U	<2.5 U
n-Butylbenzene	<2.5 U	<2.5 U
n-Propylbenzene	<2.5 U	<2.5 U
Sec-Butylbenzene	<2.5 U	<2.5 U
Tert-Butyl Methyl Ether	0.91 J	0.78 J
Tetrachloroethene (PCE)	<0.5 U	<0.5 U
Trichloroethene (TCE)	<0.5 U	<0.5 U
Vinyl Chloride	<1 U	0.08 J
SVOCs		
Benzo(a)anthracene	**0.04 J**	**6**
Benzo(a)pyrene	<0.1 U	**5.9**
Benzo(b)fluoranthene	<0.1 U	**7.2**
Benzo(k)fluoranthene	<0.1 U	**2.8**
Chrysene	**0.03 J**	**5.3**
Indeno(1,2,3-cd)pyrene	<0.1 U	**4.1**
Metals - Dissolved		
Iron	66.3	**2,650**
Magnesium	4,410	4,860
Manganese	**443.7**	**493**
Sodium	10,200	10,600

Location	TMW07
Sample Name	TMW07_071919
Sample Date	07/19/2019
VOCs	
1,2,4,5-Tetramethylbenzene	<2 U
Chloroform	5.3
Cis-1,2-Dichloroethene	**250**
Isopropylbenzene (Cumene)	<2.5 U
n-Butylbenzene	<2.5 U
n-Propylbenzene	<2.5 U
Sec-Butylbenzene	<2.5 U
Tert-Butyl Methyl Ether	<2.5 U
Tetrachloroethene (PCE)	**150**
Trichloroethene (TCE)	**70**
Vinyl Chloride	**3.2**
SVOCs	
Benzo(a)anthracene	**0.25**
Benzo(a)pyrene	**0.22**
Benzo(b)fluoranthene	**0.31**
Benzo(k)fluoranthene	**0.11**
Chrysene	**0.26**
Indeno(1,2,3-cd)pyrene	**0.21**
Metals - Dissolved	
Iron	**2,780**
Magnesium	10,900
Manganese	**4,586**
Sodium	**64,800**

Location	TMW08
Sample Name	TMW08_071819
Sample Date	07/18/2019
VOCs	
1,2,4,5-Tetramethylbenzene	<2 U
Chloroform	**13**
Cis-1,2-Dichloroethene	**170**
Isopropylbenzene (Cumene)	<2.5 U
n-Butylbenzene	<2.5 U
n-Propylbenzene	<2.5 U
Sec-Butylbenzene	<2.5 U
Tert-Butyl Methyl Ether	7.9
Tetrachloroethene (PCE)	**64**
Trichloroethene (TCE)	**72**
Vinyl Chloride	**170**
SVOCs	
Benzo(a)anthracene	**0.13**
Benzo(a)pyrene	**0.11**
Benzo(b)fluoranthene	**0.14**
Benzo(k)fluoranthene	**0.05 J**
Chrysene	**0.11**
Indeno(1,2,3-cd)pyrene	**0.1 J**
Metals - Dissolved	
Iron	**476**
Magnesium	7,690
Manganese	**1,631**
Sodium	**62,900**

Location	TMW10
Sample Name	TMW10_080122
Sample Date	08/01/2022
VOCs	
1,2,4,5-Tetramethylbenzene	<2 U
Chloroform	<2.5 U
Cis-1,2-Dichloroethene	**26**
Isopropylbenzene (Cumene)	<2.5 U
n-Butylbenzene	<2.5 U
n-Propylbenzene	<2.5 U
Sec-Butylbenzene	<2.5 U
Tert-Butyl Methyl Ether	<2.5 U
Tetrachloroethene (PCE)	**6.4**
Trichloroethene (TCE)	2.8
Vinyl Chloride	**5.4**

Legend

- Soil Boring/Temporary Monitoring Well
- Boiler Room
- Paper Recycling Area
- Approximate Site Location
- Tax Parcels

Analyte	NYSDEC SGVs
VOCs	
1,2,4,5-Tetramethylbenzene	5
Chloroform	7
Cis-1,2-Dichloroethene	5
Isopropylbenzene (Cumene)	5
n-Butylbenzene	5
n-Propylbenzene	5
Sec-Butylbenzene	5
Tert-Butyl Methyl Ether	10
Tetrachloroethene (PCE)	5
Trichloroethene (TCE)	5
Vinyl Chloride	2
SVOCs	
Benzo(a)anthracene	0.002
Benzo(a)pyrene	0
Benzo(b)fluoranthene	0.002
Benzo(k)fluoranthene	0.002
Chrysene	0.002
Indeno(1,2,3-cd)pyrene	0.002
Metals - Dissolved	
Iron	300
Magnesium	35000
Manganese	300
Sodium	20000

Exceedance Summary:

10 - Result exceeds NYSDEC SGVs

NOTES:
1. TAX PARCEL DATA PROVIDED BY THE NEW YORK CITY DEPARTMENT OF CITY PLANNING.
2. WORLD TOPOGRAPHIC BASEMAP IS PROVIDED THROUGH LANGAN'S ESRI AND ARCGIS SOFTWARE LICENSING AND ARCGIS ONLINE.
3. GROUNDWATER SAMPLE ANALYTICAL RESULTS ARE COMPARED TO THE NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) TITLE 6 OF THE OFFICIAL COMPILATION OF NEW YORK CODES, RULES, AND REGULATIONS (NYCRR) PART 703.5 AND THE NYSDEC TECHNICAL AND OPERATIONAL GUIDANCE SERIES (TOGS) 1.1.1 AMBIENT WATER QUALITY STANDARDS AND GUIDANCE VALUES FOR CLASS GA WATER (HEREIN COLLECTIVELY REFERENCED AS "NYSDEC SGVs").
4. ug/l - MICROGRAM PER LITER
5. <RL - NOT DETECTED
6. ALL SAMPLES WERE COLLECTED DURING THE 2022 INVESTIGATION.

QUALIFIERS:
U - THE ANALYTE WAS ANALYZED FOR, BUT WAS NOT DETECTED AT A LEVEL GREATER THAN OR EQUAL TO THE LEVEL OF THE RL OR THE SAMPLE CONCENTRATION FOR RESULTS IMPACTED BY BLANK CONTAMINATION.

80 0 80
SCALE IN FEET

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Project
INGRAHAM STREET LOGISTICS
BLOCK No. 2992, LOT No. 17
BROOKLYN NEW YORK

Figure Title
GROUNDWATER LOCATION AND ANALYTICAL RESULTS MAP

Project No. 170588003
Date 2/22/2023
Scale 1"=80'
Drawn By PDT
Figure No. 5
Sheet 5 of 7

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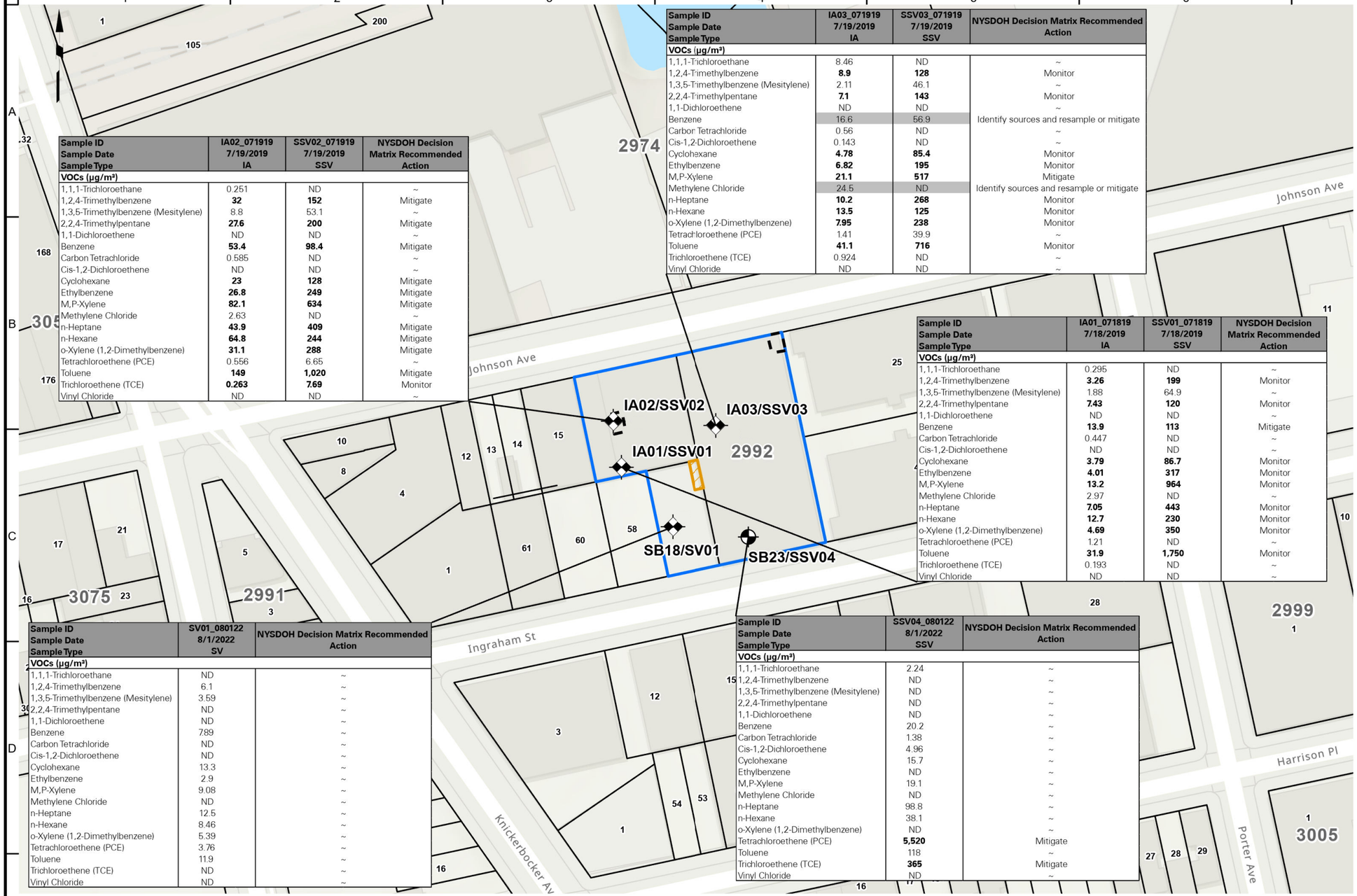
Path: \\langan.com\data\NYC\data0\170588001\Project Data\ArcGIS\APRX\170588001_BCP_2023.aprx Date: 2/22/2023 User: pditillio Time: 9:18 AM



Sample ID Sample Date Sample Type	IA02_071919 7/19/2019 IA	SSV02_071919 7/19/2019 SSV	NYSDOH Decision Matrix Recommended Action
VOCs (µg/m³)			
1,1,1-Trichloroethane	0.251	ND	~
1,2,4-Trimethylbenzene	**32**	**152**	Mitigate
1,3,5-Trimethylbenzene (Mesitylene)	8.8	53.1	~
2,2,4-Trimethylpentane	**27.6**	**200**	Mitigate
1,1-Dichloroethene	ND	ND	~
Benzene	**53.4**	**98.4**	Mitigate
Carbon Tetrachloride	0.585	ND	~
Cis-1,2-Dichloroethene	ND	ND	~
Cyclohexane	**23**	**128**	Mitigate
Ethylbenzene	**26.8**	**249**	Mitigate
M,P-Xylene	**82.1**	**634**	Mitigate
Methylene Chloride	2.63	ND	~
n-Heptane	**43.9**	**409**	Mitigate
n-Hexane	**64.8**	**244**	Mitigate
o-Xylene (1,2-Dimethylbenzene)	**31.1**	**288**	Mitigate
Tetrachloroethene (PCE)	0.556	6.65	~
Toluene	**149**	**1,020**	Mitigate
Trichloroethene (TCE)	**0.263**	**7.69**	Monitor
Vinyl Chloride	ND	ND	~

Sample ID Sample Date Sample Type	IA03_071919 7/19/2019 IA	SSV03_071919 7/19/2019 SSV	NYSDOH Decision Matrix Recommended Action
VOCs (µg/m³)			
1,1,1-Trichloroethane	8.46	ND	~
1,2,4-Trimethylbenzene	**8.9**	**128**	Monitor
1,3,5-Trimethylbenzene (Mesitylene)	2.11	46.1	~
2,2,4-Trimethylpentane	**7.1**	**143**	Monitor
1,1-Dichloroethene	ND	ND	~
Benzene	16.6	56.9	Identify sources and resample or mitigate
Carbon Tetrachloride	0.56	ND	~
Cis-1,2-Dichloroethene	0.143	ND	~
Cyclohexane	**4.78**	**85.4**	Monitor
Ethylbenzene	**6.82**	**195**	Monitor
M,P-Xylene	**21.1**	**517**	Mitigate
Methylene Chloride	24.5	ND	Identify sources and resample or mitigate
n-Heptane	**10.2**	**268**	Monitor
n-Hexane	**13.5**	**125**	Monitor
o-Xylene (1,2-Dimethylbenzene)	**7.95**	**238**	Monitor
Tetrachloroethene (PCE)	1.41	39.9	~
Toluene	**41.1**	**716**	Monitor
Trichloroethene (TCE)	0.924	ND	~
Vinyl Chloride	ND	ND	~

Sample ID Sample Date Sample Type	IA01_071819 7/18/2019 IA	SSV01_071819 7/18/2019 SSV	NYSDOH Decision Matrix Recommended Action
VOCs (µg/m³)			
1,1,1-Trichloroethane	0.295	ND	~
1,2,4-Trimethylbenzene	**3.26**	**199**	Monitor
1,3,5-Trimethylbenzene (Mesitylene)	1.88	64.9	~
2,2,4-Trimethylpentane	**7.43**	**120**	Monitor
1,1-Dichloroethene	ND	ND	~
Benzene	**13.9**	**113**	Mitigate
Carbon Tetrachloride	0.447	ND	~
Cis-1,2-Dichloroethene	ND	ND	~
Cyclohexane	**3.79**	**86.7**	Monitor
Ethylbenzene	**4.01**	**317**	Monitor
M,P-Xylene	**13.2**	**964**	Monitor
Methylene Chloride	2.97	ND	~
n-Heptane	**7.05**	**443**	Monitor
n-Hexane	**12.7**	**230**	Monitor
o-Xylene (1,2-Dimethylbenzene)	**4.69**	**350**	Monitor
Tetrachloroethene (PCE)	1.21	ND	~
Toluene	**31.9**	**1,750**	Monitor
Trichloroethene (TCE)	0.193	ND	~
Vinyl Chloride	ND	ND	~

Sample ID Sample Date Sample Type	SV01_080122 8/1/2022 SV	NYSDOH Decision Matrix Recommended Action
VOCs (µg/m³)		
1,1,1-Trichloroethane	ND	~
1,2,4-Trimethylbenzene	6.1	~
1,3,5-Trimethylbenzene (Mesitylene)	3.59	~
2,2,4-Trimethylpentane	ND	~
1,1-Dichloroethene	ND	~
Benzene	789	~
Carbon Tetrachloride	ND	~
Cis-1,2-Dichloroethene	ND	~
Cyclohexane	13.3	~
Ethylbenzene	2.9	~
M,P-Xylene	9.08	~
Methylene Chloride	ND	~
n-Heptane	12.5	~
n-Hexane	8.46	~
o-Xylene (1,2-Dimethylbenzene)	5.39	~
Tetrachloroethene (PCE)	3.76	~
Toluene	11.9	~
Trichloroethene (TCE)	ND	~
Vinyl Chloride	ND	~

Sample ID Sample Date Sample Type	SSV04_080122 8/1/2022 SSV	NYSDOH Decision Matrix Recommended Action
VOCs (µg/m³)		
1,1,1-Trichloroethane	2.24	~
1,2,4-Trimethylbenzene	ND	~
1,3,5-Trimethylbenzene (Mesitylene)	ND	~
2,2,4-Trimethylpentane	ND	~
1,1-Dichloroethene	ND	~
Benzene	20.2	~
Carbon Tetrachloride	1.38	~
Cis-1,2-Dichloroethene	4.96	~
Cyclohexane	15.7	~
Ethylbenzene	ND	~
M,P-Xylene	19.1	~
Methylene Chloride	ND	~
n-Heptane	98.8	~
n-Hexane	38.1	~
o-Xylene (1,2-Dimethylbenzene)	ND	~
Tetrachloroethene (PCE)	**5,520**	Mitigate
Toluene	118	~
Trichloroethene (TCE)	**365**	Mitigate
Vinyl Chloride	ND	~

Legend

- Soil Boring
- Soil Vapor Sample
- Approximate Site Location
- Tax Parcels
- Boiler Room
- Paper Recycling Area

NOTES:
1. TAX PARCEL DATA PROVIDED BY THE NEW YORK CITY DEPARTMENT OF CITY PLANNING.
2. WORLD TOPOGRAPHIC BASEMAP IS PROVIDED THROUGH LANGAN'S ESRI AND ARCGIS SOFTWARE LICENSING AND ARCGIS ONLINE.
3. SOIL VAPOR AND SUB-SLAB VAPOR SAMPLE ANALYTICAL RESULTS ARE COMPARED TO THE MINIMUM SOIL VAPOR CONCENTRATIONS AT WHICH MITIGATION IS RECOMMENDED AS SET FORTH IN THE NEW YORK STATE DEPARTMENT OF HEALTH (NYSDOH) OCTOBER 2006 GUIDANCE FOR EVALUATING SOIL VAPOR INTRUSION IN THE STATE OF NEW YORK DECISION MATRICES FOR SUB-SLAB VAPOR AND INDOOR AIR AND SUBSEQUENT UPDATES (2017).
4. ug/m3- MICROGRAM PER CUBIC METER
5. ND - NOT DETECTED
6. ALL SAMPLES WERE COLLECTED DURING THE 2022 INVESTIGATION.

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Project
450 JOHNSON AVENUE
BLOCK No. 2992, LOT No. 17
BROOKLYN NEW YORK

Figure Title
SOIL VAPOR SAMPLE LOCATION AND ANALYTICAL RESULTS MAP

Project No. 170588003	Figure No. 6
Date 6/13/2024	
Scale 1"=100'	
Drawn By MG	

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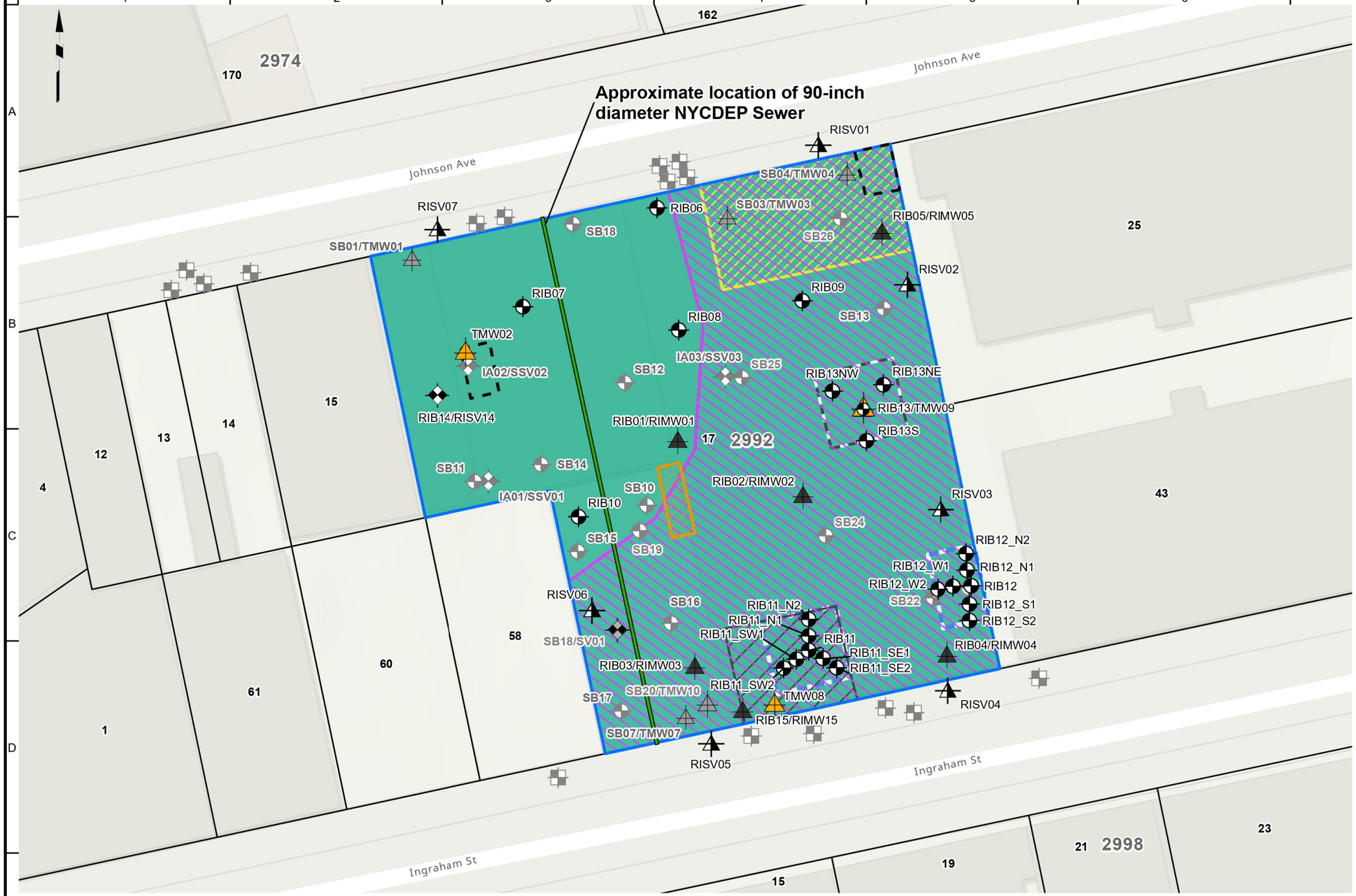
Path: \\langan.com\data\NYC\data0\170588001\Project Data\ArcGIS\APRX\170588001_BCP_2023.aprx Date: 6/13/2024 User: mgeorgalas Time: 12:49 PM



Legend

- Proposed Soil Boring Location
- Proposed Soil Boring/Monitoring Well Location
- Proposed Soil Vapor Location
- Proposed Soil Boring/Soil Vapor Location
- Soil Boring/Monitoring Well (Re-Install) Location
- Monitoring Well (Re-Install) Location
- Previous Soil Boring Location
- Previous Soil Boring/Temporary Monitoring Well Location
- Previous Collocated Indoor Air and Sub Slab Vapor Sample Location
- Off-site Groundwater Monitoring Well (installed by others)
- Approximate Site Location
- Tax Parcels
- Boiler Room
- Paper Recycling Area
- AOC 1: Chlorinated Solvents in Shallow Soil
- AOC 2: Chlorinated Solvents in Groundwater
- AOC 3: Elevated Mercury in Soil
- AOC 4: Elevated Lead in Soil
- AOC 5: Petroleum Impacts (Observed)
- AOC 6: Site-wide Contaminated Fill
- 2992 Block Number
- 17 Lot Number

NOTES:
1. TAX PARCEL DATA PROVIDED BY THE NEW YORK CITY DEPARTMENT OF CITY PLANNING.
2. WORLD TOPOGRAPHIC BASEMAP IS PROVIDED THROUGH LANGAN'S ESRI AND ARCGIS SOFTWARE LICENSING AND ARCGIS ONLINE.

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Project
INGRAHAM STREET LOGISTICS
BLOCK No. 2992, LOT No. 17
BROOKLYN NEW YORK

Figure Title
AREAS OF CONCERN AND PROPOSED SAMPLE LOCATION PLAN

Project No. 170588003	Figure No. 7
Date 11/12/2025	
Scale 1"=40'	
Drawn By MG	

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Path: \\langan.com\data\NYC\data0\170588001\Project Data\ArcGIS\APRX\170588001 RIWP.aprx Date: 11/12/2025 User: mgeorgalas Time: 4:44 PM

TABLES

Table 1
Proposed Sample Summary
Remedial Investigation Work Plan

Ingraham Street Logistics
450 Johnson Avenue
Brooklyn, NY
Langan Project No. 170588003

No.	Sample Name	Type	Boring	Rationale	Depth[1]	Analyses
SOIL						
1	RIB01_X-X	Grab	RIB01	Investigate PAOC 6 - Site-Wide Historic Fill	Upper 2 feet of Non-Native Fill	TCL / Part 375-list[2] of VOCs & SVOCs, Part 375 PCBs & Pesticides, TAL / Part 375 Metals, total cyanide, hexavalent and trivalent chromium, PFAS (1633), and 1,4-dioxane (SIM)
2	RIB01_X-X				Groundwater Interface	
3	RIB01_X-X				Greatest degree of impacts or bottom of the uncontrolled fill layer	
4	RIB01_X-X				Interval below observed impacts (if encountered)	
5	RIB02_X-X	Grab	RIB02	Investigate PAOC 6 - Site-Wide Historic Fill	Upper 2 feet of Non-Native Fill	
6	RIB02_X-X				Groundwater Interface	
7	RIB02_X-X				Greatest degree of impacts or bottom of the uncontrolled fill layer	
8	RIB02_X-X				Interval below observed impacts (if encountered)	
9	RIB03_X-X	Grab	RIB03	Investigate PAOC 6 - Site-Wide Historic Fill	Upper 2 feet of Non-Native Fill	
10	RIB03_X-X				Groundwater Interface	
11	RIB03_X-X				Greatest degree of impacts or bottom of the uncontrolled fill layer	
12	RIB03_X-X				Interval below observed impacts (if encountered)	
13	RIB04_X-X	Grab	RIB04	Investigate PAOC 6 - Site-Wide Historic Fill	Upper 2 feet of Non-Native Fill	
14	RIB04_X-X				Groundwater Interface	
15	RIB04_X-X				Greatest degree of impacts or bottom of the uncontrolled fill layer	
16	RIB04_X-X				Interval below observed impacts (if encountered)	
17	RIB05_X-X	Grab	RIB05	Investigate PAOC 5 - Observed Petroleum Impacts & PAOC 6 - Site-Wide Historic Fill	Upper 2 feet of Non-Native Fill	
18	RIB05_X-X				Groundwater Interface	
19	RIB05_X-X				Greatest degree of impacts or bottom of the uncontrolled fill layer	
20	RIB05_X-X				Interval below observed impacts (if encountered)	
21	RIB06_X-X	Grab	RIB06	Investigate PAOC 6 - Site-Wide Historic Fill	Upper 2 feet of Non-Native Fill	
22	RIB06_X-X				Groundwater Interface	
23	RIB06_X-X				Greatest degree of impacts or bottom of the uncontrolled fill layer	
24	RIB06_X-X				Interval below observed impacts (if encountered)	
25	RIB07_X-X	Grab	RIB07	Investigate PAOC 6 - Site-Wide Historic Fill	Upper 2 feet of Non-Native Fill	
26	RIB07_X-X				Groundwater Interface	
27	RIB07_X-X				Greatest degree of impacts or bottom of the uncontrolled fill layer	
28	RIB07_X-X				Interval below observed impacts (if encountered)	
29	RIB08_X-X	Grab	RIB08	Investigate PAOC 6 - Site-Wide Historic Fill	Upper 2 feet of Non-Native Fill	
30	RIB08_X-X				Groundwater Interface	
31	RIB08_X-X				Greatest degree of impacts or bottom of the uncontrolled fill layer	
32	RIB08_X-X				Interval below observed impacts (if encountered)	
33	RIB09_X-X	Grab	RIB09	Investigate PAOC 6 - Site-Wide Historic Fill	Upper 2 feet of Non-Native Fill	
34	RIB09_X-X				Groundwater Interface	
35	RIB09_X-X				Greatest degree of impacts or bottom of the uncontrolled fill layer	
36	RIB09_X-X				Interval below observed impacts (if encountered)	
37	RIB10_X-X	Grab	RIB10	Investigate PAOC 6 - Site-Wide Historic Fill	Upper 2 feet of Non-Native Fill	
38	RIB10_X-X				Groundwater Interface	
39	RIB10_X-X				Greatest degree of impacts or bottom of the uncontrolled fill layer	
40	RIB10_X-X				Interval below observed impacts (if encountered)	
41	RIB14_X-X	Grab	RIB14	Investigate PAOC 6 - Site-Wide Historic Fill	Upper 2 feet of Non-Native Fill	
42	RIB14_X-X				Groundwater Interface	
43	RIB14_X-X				Greatest degree of impacts or bottom of the uncontrolled fill layer	
44	RIB14_X-X				Interval below observed impacts (if encountered)	
45	RIB15_X-X	Grab	RIB15	Investigate PAOC 6 - Site-Wide Historic Fill	Upper 2 feet of Non-Native Fill	
46	RIB15_X-X				Groundwater Interface	
47	RIB15_X-X				Greatest degree of impacts or bottom of the uncontrolled fill layer	
48	RIB15_X-X				Interval below observed impacts (if encountered)	

Table 1
Proposed Sample Summary
Remedial Investigation Work Plan

Ingraham Street Logistics
450 Johnson Avenue
Brooklyn, NY
Langan Project No. 170588003

No.	Sample Name	Type	Boring	Rationale	Depth[1]	Analyses
Delineation Soil Borings						
49	RIB11_0-2	Grab	RIB11	Investigate PAOC 1 - Chlorinated Solvents in Shallow Soil & PAOC 4 - Elevated Lead in Soil	0 to 2 feet bgs	TCL / Part 375-list[2] of VOCs, Total and TCLP Lead
50	RIB11_2-4				2 to 4 feet bgs	
51	RIB11_4-6				4 to 6 feet bgs	TCL / Part 375-list[2] of VOCs (Analyze), Total and TCLP Lead (Hold)
52	RIB11_6-8				6 to 8 feet bgs	
53	RIB11_N1_0-2	Grab	RIB11_N1	Investigate PAOC 4 - Elevated Lead in Soil	0 to 2 feet bgs	Total and TCLP Lead
54	RIB11_N1_2-4				2 to 4 feet bgs	
55	RIB11_N1_4-6				4 to 6 feet bgs	Total and TCLP Lead (Hold)
56	RIB11_N1_6-8				6 to 8 feet bgs	
57	RIB11_N2_0-2	Grab	RIB11_N2	Investigate PAOC 1 - Chlorinated Solvents in Shallow Soil & PAOC 4 - Elevated Lead in Soil	0 to 2 feet bgs	TCL / Part 375-list[2] of VOCs (Analyze), Total and TCLP Lead (Hold)
58	RIB11_N2_2-4				2 to 4 feet bgs	
59	RIB11_N2_4-6				4 to 6 feet bgs	TCL / Part 375-list[2] of VOCs (Analyze), Total and TCLP Lead (Hold)
60	RIB11_N2_6-8				6 to 8 feet bgs	
61	RIB11_SW1_0-2	Grab	RIB11_SW1	Investigate PAOC 4 - Elevated Lead in Soil	0 to 2 feet bgs	Total and TCLP Lead
62	RIB11_SW1_2-4				2 to 4 feet bgs	
63	RIB11_SW1_4-6				4 to 6 feet bgs	Total and TCLP Lead (Hold)
64	RIB11_SW1_6-8				6 to 8 feet bgs	
65	RIB11_SW2_0-2	Grab	RIB11_SW2	Investigate PAOC 1 - Chlorinated Solvents in Shallow Soil & PAOC 4 - Elevated Lead in Soil	0 to 2 feet bgs	TCL / Part 375-list[2] of VOCs (Analyze), Total and TCLP Lead (Hold)
66	RIB11_SW2_2-4				2 to 4 feet bgs	
67	RIB11_SW2_4-6				4 to 6 feet bgs	TCL / Part 375-list[2] of VOCs (Analyze), Total and TCLP Lead (Hold)
68	RIB11_SW2_6-8				6 to 8 feet bgs	
69	RIB11_SE1_0-2	Grab	RIB11_SE1	Investigate PAOC 4 - Elevated Lead in Soil	0 to 2 feet bgs	Total and TCLP Lead
70	RIB11_SE1_2-4				2 to 4 feet bgs	
71	RIB11_SE1_4-6				4 to 6 feet bgs	Total and TCLP Lead (Hold)
72	RIB11_SE1_6-8				6 to 8 feet bgs	
73	RIB11_SE2_0-2	Grab	RIB11_SE2	Investigate PAOC 1 - Chlorinated Solvents in Shallow Soil & PAOC 4 - Elevated Lead in Soil	0 to 2 feet bgs	TCL / Part 375-list[2] of VOCs (Analyze), Total and TCLP Lead (Hold)
74	RIB11_SE2_2-4				2 to 4 feet bgs	
75	RIB11_SE2_4-6				4 to 6 feet bgs	TCL / Part 375-list[2] of VOCs (Analyze), Total and TCLP Lead (Hold)
76	RIB11_SE2_6-8				6 to 8 feet bgs	
77	RIB12_0-2	Grab	RIB12	Investigate PAOC 4 - Elevated Lead in Soil	0 to 2 feet bgs	Total and TCLP Lead
78	RIB12_2-4				2 to 4 feet bgs	
79	RIB12_4-6				4 to 6 feet bgs	Total and TCLP Lead (Hold)
80	RIB12_6-8				6 to 8 feet bgs	
81	RIB12_N1_0-2	Grab	RIB12_N1	Investigate PAOC 4 - Elevated Lead in Soil	0 to 2 feet bgs	Total and TCLP Lead
82	RIB12_N1_2-4				2 to 4 feet bgs	
83	RIB12_N1_4-6				4 to 6 feet bgs	Total and TCLP Lead (Hold)
84	RIB12_N1_6-8				6 to 8 feet bgs	
85	RIB12_N2_0-2	Grab	RIB12_N2	Investigate PAOC 4 - Elevated Lead in Soil	0 to 2 feet bgs	Total and TCLP Lead (Hold)
86	RIB12_N2_2-4				2 to 4 feet bgs	
87	RIB12_N2_4-6				4 to 6 feet bgs	Total and TCLP Lead (Hold)
88	RIB12_N2_6-8				6 to 8 feet bgs	
89	RIB12_E1_0-2	Grab	RIB12_E1	Investigate PAOC 4 - Elevated Lead in Soil	0 to 2 feet bgs	Total and TCLP Lead
90	RIB12_E1_2-4				2 to 4 feet bgs	
91	RIB12_E1_4-6				4 to 6 feet bgs	Total and TCLP Lead (Hold)
92	RIB12_E1_6-8				6 to 8 feet bgs	
93	RIB12_E2_0-2	Grab	RIB12_E2	Investigate PAOC 4 - Elevated Lead in Soil	0 to 2 feet bgs	Total and TCLP Lead (Hold)
94	RIB12_E2_2-4				2 to 4 feet bgs	
95	RIB12_E2_4-6				4 to 6 feet bgs	Total and TCLP Lead (Hold)
96	RIB12_E2_6-8				6 to 8 feet bgs	
97	RIB12_S1_0-2	Grab	RIB12_S1	Investigate PAOC 4 - Elevated Lead in Soil	0 to 2 feet bgs	Total and TCLP Lead
98	RIB12_S1_2-4				2 to 4 feet bgs	
99	RIB12_S1_4-6				4 to 6 feet bgs	Total and TCLP Lead (Hold)
100	RIB12_S1_6-8				6 to 8 feet bgs	

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Remedial Investigation Work Plan

Ingraham Street Logistics
450 Johnson Avenue
Brooklyn, NY
Langan Project No. 170588003

No.	Sample Name	Type	Boring	Rationale	Depth[1]	Analyses
101	RIB12_S2_0-2	Grab	RIB12_S2	Investigate PAOC 4 - Elevated Lead in Soil	0 to 2 feet bgs	Total and TCLP Lead (Hold)
102	RIB12_S2_2-4				2 to 4 feet bgs	
103	RIB12_S2_4-6				4 to 6 feet bgs	Total and TCLP Lead (Hold)
104	RIB12_S2_6-8				6 to 8 feet bgs	
105	RIB13_0-2	Grab	RIB13	Investigate PAOC 3 - Elevated Mercury in Soil	0 to 2 feet bgs	Total and TCLP Mercury
106	RIB13_2-4				2 to 4 feet bgs	
107	RIB13_4-6				4 to 6 feet bgs	Total And TCLP Mercury (Hold)
108	RIB13_6-8				6 to 8 feet bgs	
109	RIB13_NE_0-2	Grab	RIB13_NE	Investigate PAOC 3 - Elevated Mercury in Soil	0 to 2 feet bgs	Total And TCLP Mercury
110	RIB13_NE_2-4				2 to 4 feet bgs	
111	RIB13_NE_4-6				4 to 6 feet bgs	Total And TCLP Mercury (Hold)
112	RIB13_NE_6-8				6 to 8 feet bgs	
113	RIB13_NW_0-2	Grab	RIB13_S	Investigate PAOC 3 - Elevated Mercury in Soil	0 to 2 feet bgs	Total And TCLP Mercury
114	RIB13_NW_2-4				2 to 4 feet bgs	
115	RIB13_NW_4-6				4 to 6 feet bgs	Total And TCLP Mercury (Hold)
116	RIB13_NW_6-8				6 to 8 feet bgs	
117	RIB13_S_0-2	Grab	RIB12_S	Investigate PAOC 3 - Elevated Mercury in Soil	0 to 2 feet bgs	Total And TCLP Mercury
118	RIB13_S_2-4				2 to 4 feet bgs	
119	RIB13_S_4-6				4 to 6 feet bgs	Total And TCLP Mercury (Hold)
120	RIB13_S_6-8				6 to 8 feet bgs	
Quality Assurance/Quality Control						
NA	RI_DUP01_date	Duplicate	TBD	QA/QC	Duplicate	TCL / Part 375-list[2] of VOCs & SVOCs, Part 375 PCBs & Pesticides, TAL / Part 375 Metals, total cyanide, hexavalent and trivalent chromium, PFAS (1633), and 1,4-dioxane (SIM)
	RI_DUP02_date					
	RI_DUP03_date					
	RI_DUP04_date					
	RI_DUP05_date					
	RI_DUP06_date					
	RIB##_MS/MSD_date	MS/MSD	TBD	QA/QC	Matrix Spike/Matrix Spike Duplicate	
	RIB##_MS/MSD_date					
	RIB##_MS/MSD_date					
	RIB##_MS/MSD_date					
	RIB##_MS/MSD_date					
	RIB##_MS/MSD_date					
	RI_FB01_date	Field Blank	NA	QA/QC	Field Blank	TCL / Part 375-list[2] of VOCs & SVOCs, Part 375 PCBs & Pesticides, TAL / Part 375 Metals including cyanide and hexavalent and trivalent chromium, and 1,4-dioxane (SIM)
	RI_FB02_date					
	RI_FB03_date					
	RI_FB04_date					
	RI_FB05_date					
	RI_FB06_date					
	RI_PFAS_FB01_date	PFAS Field Blank		QA/QC	PFAS Field Blank	PFAS (1633)
	RI_PFAS_FB02_date					
	RI_PFAS_FB03_date					
	RI_PFAS_FB04_date					
	RI_PFAS_FB05_date					
	RI_PFAS_FB06_date					

Table 1
Proposed Sample Summary
Remedial Investigation Work Plan

Ingraham Street Logistics
450 Johnson Avenue
Brooklyn, NY
Langan Project No. 170588003

No.	Sample Name	Type	Boring	Rationale	Depth[1]	Analyses
GROUNDWATER						
1	RIMW01_date	Grab	RIMW01	Investigate PAOC 2 - Chlorinated Solvents in Groundwater PAOC 6 - Site-Wide Historic Fill	Midpoint of screened interval	TCL / Part 375-list[2] of VOCs & SVOCs, Part 375 PCBs & Pesticides, TAL / Part 375 Metals including cyanide and hexavalent and trivalent chromium, PFAS, and 1,4-dioxane (SIM)
2	RIMW02_date		RIMW02	Investigate PAOC 2 - Chlorinated Solvents in Groundwater PAOC 6 - Site-Wide Historic Fill		
3	RIMW03_date		RIMW03	Investigate PAOC 2 - Chlorinated Solvents in Groundwater PAOC 6 - Site-Wide Historic Fill		
4	RIMW04_date		RIMW04	Investigate PAOC 2 - Chlorinated Solvents in Groundwater PAOC 6 - Site-Wide Historic Fill		
5	RIMW05_date		RIMW05	Investigate PAOC 2 - Chlorinated Solvents in Groundwater PAOC 5 - Observed Petroleum Impacts & PAOC 6 - Site-Wide Historic Fill		
6	RIMW15_date		RIMW15	Investigate PAOC 2 - Chlorinated Solvents in Groundwater PAOC 6 - Site-Wide Historic Fill		
7	TMW02_date		TMW02	Investigate PAOC 6 - Site-Wide Historic Fill		
8	TMW08_date		TMW08	Investigate PAOC 2 - Chlorinated Solvents in Groundwater PAOC 6 - Site-Wide Historic Fill		
9	TMW09_date		TMW09	Investigate PAOC 2 - Chlorinated Solvents in Groundwater PAOC 6 - Site-Wide Historic Fill		
N/A	GW_DUP01_date	Duplicate	TBD	QA/QC	Duplicate	
	RIMW##_MSMSD_date	MS/MSD			Matrix Spike/Matrix Spike Duplicate	
	GW_FB01_date	Field Blank	NA		Field Blank	
	GW_TB01_date	Trip Blank			Trip Blank	TCL VOCs
	GW_TB02_date	Trip Blank			Trip Blank	
	GW_TB03_date	Trip Blank			Trip Blank	
SOIL VAPOR						
1	RISV01_date	RISV01		Evaluate for potential off-site soil vapor migration	Minimum of 5 feet bgs or 2 foot above water table (whichever is shallower)	VOCs by USEPA Method TO-15
2	RISV02_date	RISV02				
3	RISV03_date	RISV03				
4	RISV04_date	RISV04				
5	RISV05_date	RISV05				
6	RISV06_date	RISV06				
7	RISV07_date	RISV07				
8	RISV14_date	RISV14				

Preliminary Areas of Concern (PAOCs):
PAOC 1 - Chlorinated Solvents in Shallow Soil
PAOC 2 - Chlorinated Solvents in Groundwater
PAOC 3 - Elevated Mercury in Soil
PAOC 4 - Elevated Lead in Soil
PAOC 5 - Observed Petroleum Impacts
PAOC 6 - Site-wide Historic Fill

Table 1
Proposed Sample Summary
Remedial Investigation Work Plan

Ingraham Street Logistics
450 Johnson Avenue
Brooklyn, NY

Langan Project No. 170588003

Notes:

1. Soil sample depth intervals will be determined in the field.
2. Soil samples to be analyzed for New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules and Regulations (6 NYCRR) Part 375-list compounds.
3. TBD = to be determined
4. VOC = volatile organic compound
5. SVOC = semivolatile organic compound
6. PCB = polychlorinated biphenyl
7. TCL = Target Compound List
8. TAL = Target Analyte List
9. QA/QC = quality assurance/quality control
10. NA = not applicable
11. PFAS = per- and polyfluoroalkyl stubstances limited to the list of compounds designated by NYSDEC (method 1633 40-compound list)
12. USEPA = United States Environmental Protection Agency

Table 2
List of Per- and Polyfluoroalkyl Substances
Remedial Investigation Work Plan

Ingraham Stree Logistics
450 Johnson Avenue
Brooklyn, NY

Langan Project No. 170588003

Compound Name	Analytical Method
Perfluoroalkyl sulfonic acids	USEPA Method 1633
Perfluorobutanesulfonic acid (PFBS)	
Perfluoropentanesulfonic acid (PFPeS)	
Perfluorohexanesulfonic acid (PFHxS)	
Perfluoroheptanesulfonic acid (PFHpS)	
Perfluorooctanesulfonic acid (PFOS)	
Perfluorononanesulfonic acid (PFNS)	
Perfluorodecanesulfonic acid (PFDS)	
Perfluorododecanesulfonic acid (PFDoS)	
Perfluoroalkyl carboxylic acids	
Perfluorobutanoic acid (PFBA)	
Perfluoropentanoic acid (PFPeA)	
Perfluorohexanoic acid (PFHxA)	
Perfluoroheptanoic acid (PFHpA)	
Perfluorooctanoic acid (PFOA)	
Perfluorononanoic acid (PFNA)	
Perfluorodecanoic acid (PFDA)	
Perfluoroundecanoic acid (PFUnA)	
Perfluorododecanoic acid (PFDoA)	
Perfluorotridecanoic acid (PFTrDA)	
Perfluorotetradecanoic acid (PFTeDA)	
Per- and Polyfluoroether carboxylic acids	
Hexafluoropropylene oxide dimer acid (HFPO-DA)	
4,8-Dioxa-3H-perfluorononanoic acid (ADONA)	
Perfluoro-3-methoxypropanoic acid (PFMPA)	
Perfluoro-4-methoxybutanoic acid (PFMBA)	
Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	
Fluorotelomer sulfonic acids	
4:2 Fluorotelomer sulfonic acid (4:2-FTS)	
6:2 Fluorotelomer sulfonic acid (6:2-FTS)	
8:2 Fluorotelomer sulfonic acid (8:2-FTS)	
Fluorotelomer carboxylic acids	
3:3 Fluorotelomer carboxylic acid (3:3 FTCA)	
5:3 Fluorotelomer carboxylic acid (5:3 FTCA)	
7:3 Fluorotelomer carboxylic acid (7:3 FTCA)	
Perfluorooctane sulfonamides	
Perfluorooctane sulfonamide (PFOSA)	
N-methylperfluorooctane sulfonamide (NMeFOSA)	
N-ethylperfluorooctane sulfonamide (NEtFOSA)	
Perfluorooctane sulfonamidoacetic acids	
N-methylperfluorooctane sulfonamidoacetic acid (N-MeFOSAA)	
N-ethylperfluorooctane sulfonamidoacetic acid (N-EtFOSAA)	
Perfluorooctane sulfonamide ethanols	
N-methylperfluorooctane sulfonamidoethanol (MeFOSE)	
N-ethylperfluorooctane sulfonamidoethanol (EtFOSE)	
Ether sulfonic acids	
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (F-53B Major) (9Cl-PF3ONS)	
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor) (11Cl-PF3OUdS)	
Perfluoro(2-ethoxyethane) sulfonic acid (PFEESA)	

Notes:
1. PFAS - per- and polyfluoroalkyl substances

APPENDIX A

PREVIOUS ENVIRONMENTAL REPORTS

PHASE I ENVIRONMENTAL SITE ASSESSMENT
450 Johnson Avenue
Brooklyn, New York

Prepared for:

Prologis, Inc.
Pier 1, Bay 1
San Francisco, California

Prepared by:

Langan Engineering, Environmental, Surveying,
Landscape Architecture and Geology, D.P.C.
21 Penn Plaza
360 West 31st Street, 8th Floor
New York, New York 10001

Mimi S. Raygorodetsky
Senior Associate/Vice President

Robert (Rory) S. Johnston, P.E.
Principal/Vice President

23 August 2019
170588001

LANGAN

LANGAN

Technical Excellence
Practical Experience
Client Responsiveness

August 23, 2019

Ms. Janet Frentzel
Prologis, Inc.
Pier 1, Bay 1
San Francisco, California 94111

Subject: Phase I Environmental Site Assessment
450 Johnson Avenue
Brooklyn, New York
Langan Project: 170588001

Dear Ms. Frentzel:

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan) is submitting this Phase I Environmental Site Assessment (ESA) for the property located at 450 Johnson Avenue in Brooklyn, New York.

We appreciate the opportunity to assist you with this project. If you have questions or need information clarified, please call Mr. Andrew Kerr at 510.874.7015.

Sincerely yours,

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.

Andrew Kerr, P.G. (Calif)
Associate

Robert (Rory) S. Johnston, P.E.
Principal/Vice President

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PHASE I ENVIRONMENTAL SITE ASSESSMENT
450 Johnson Avenue
Brooklyn, Kings County, New York

E1.0 EXECUTIVE SUMMARY

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C (Langan) has performed this Phase I Environmental Site Assessment (ESA) for the property known as:

- 450 Johnson Avenue, Brooklyn, New York

The approximate location of the Site is shown on **Figure 1**, **Appendix A**. This Phase I ESA was performed on behalf of Prologis, Inc. (User) to assist with a possible purchase of the Site.

This Phase I ESA was performed using the guidelines and limitations of the following: 1) ASTM International (ASTM) Practice E1527-13 (Standard Practice for ESAs: Phase I ESA Process), and 2) the United States Environmental Protection Agency's (USEPA) 2006 standards for All Appropriate Inquiry (AAI) Rule (40 CFR Part 312).

The objective of this Phase I ESA was to identify the presence or likely presence of hazardous substances or petroleum products in, on or at a property as defined in ASTM E1527 13 as a Recognized Environmental Condition (REC).

E1.1 Facility Description

General information relative to the Site is outlined below. The approximate locations of Site features and the areas surrounding the Site are depicted on **Figure 2**, **Appendix A**.

The Site is an approximate 0.80-acre area located on the southern side of Johnson Avenue, that includes three land parcels (Lots 17, 21, and 55) within Block 2992. The 450 Johnson Avenue address is formally associated with Lot 21, with alternative addresses of 440 Johnson for Lot 17 and 79 Ingraham Street for Lot 55. The Site is located in an industrial and commercial section of the East Williamsburg neighborhood of Brooklyn; the Site is zoned as M1-2 for light industrial use per the New York City Planning Commission Zoning Map 13b (**Attachment 1**, **Appendix E**).

The Site is developed with three buildings and a parking lot as detailed below:

Lot 17: a two-story 2,500 square foot (ft^2) warehouse and office building, and one-story 7,500 ft^2 warehouse

Lot 21: a one-story 20,000 ft^2 warehouse

Lot 55: a 5,000 ft^2 parking lot

The warehouse portion of the three buildings are interconnected and utilized for one single use: envelope manufacturing. The location of the buildings and parking lot relative to the Site is depicted on **Figure 2**, **Appendix A**.

The Site is owned by JBC Land LLC and has been occupied by Envelope Manufacturers Corp. since at least 1992 for the manufacturing of envelopes.

E1.2 Property History

The Site has been developed since at least 1907 as a lumber yard (1907-1951), an auto garage (1928-1934), for metal working (1933), for paper box manufacturing (1951), as a repair shop (1951), and for envelope manufacturing (1992 - present). The existing buildings were constructed in 1931.

E1.3 Environmental Database and File Review

The review of the environmental database report prepared by Environmental Data Resources, Inc. (EDR) indicates that the Site is listed in five (5) separate State and Federal databases. These include Resource Conservation and Recovery Act (RCRA) – Conditionally Exempt Small Quantity Generators List (CESQG), Facility Index System (FINDS), USEPA Enforcement and Compliance History Online (ECHO), New York Manifest (Manifest), and Aerometric Information Retrieval System (US AIRS). The RCRA-CESQ and NY Manifest listings are associated with the generation of ignitable waste (D001) at the Site. The FINDS and ECHO database listings identified the Site as a RCRA Generator, a US AIRS site and a New York Facility Information System (FIS) site. The US AIR database listing indicated the Site is a permitted air emission facility.

E1.4 Findings

Two RECs and two Business Environmental Risks (BERs) were identified in association with the Site.

REC 1 – Current and Historical Site Use

Historical records indicate the Site has been utilized for a variety of industrial operations between 1907 and the present, including as a lumber yard (1907-1951), an auto garage (1928-1934), a metal working facility (1933), a paper box manufacturing facility (1951), and an envelope manufacturing facility (1992-present).

During the site reconnaissance, a septic holding tank was observed in the northeast corner of Lot 21. One gasoline underground storage tank (UST) has also historically been reported in the northeast corner of Lot 21 (1933), and is presumed removed as the location of the septic tank and former gasoline UST appear consistent with each other. Two fuel oil USTs to support former oil burning boilers were reported at the Site (1912-1990), but were not observed during the site reconnaissance.

REC 2 – Current and Historical Operations of Surrounding Properties

The area surrounding the Site has been used for industrial purposes since at least 1888 through the present. Activities have included rail freight yards, plastics manufacturing, pharmaceutical manufacturing, a coal yard, auto repair shops, metal working, a dry cleaners/laundry, and miscellaneous manufacturing.

One off-site and adjoining (upgradient) property, Ingraham Street Sidewalk GW (case ID No. 224142) is listed in the New York State Voluntary Cleanup Program (VCP) database. Chlorinated volatile organic compounds (VOCs) are constituents of concern in groundwater and soil vapor.

BER 1 – Historic Fill

Based on the findings of previous subsurface investigations in the surrounding areas completed by Langan, it is likely that historic fill is present on the Subject Property. Management and disposal of historic fill material will require special considerations during potential future development of the Subject Property.

BER 2 – Asbestos Containing Material (ACM) and Lead Based Paint (LBP)

A limited survey of building materials identified the presence of ACM materials on the Site, including insulation, mastic, flooring materials, caulk, and roofing materials. No LBP was identified. A full survey of building materials would be required as part of building renovations or demolition relating to future redevelopment of the Site.

1.0 INTRODUCTION

Langan Engineering and Environmental Services, Inc. (Langan) has completed this Phase I Environmental Site Assessment (ESA) for the 450 Johnson Avenue property in Brooklyn, New York (the Site), located as shown in **Figure 1** included in **Appendix A**. This ESA was performed on behalf of Prologis, Inc. (User) to assist with a possible purchase of the Site.

1.1 Purpose

The purpose of this Phase I ESA is to:

(1) Identify Recognized Environmental Conditions (RECs) in connection with the Site, as defined in ASTM International's (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process, Designation E1527-13, which states: the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to any release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment. The term is not intended to include de minimis conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

(2) Utilize the guidelines of United States Environmental Protection Agency (USEPA) 40 Code of Federal Regulations (CFR) Part 312 Subpart C Standards and Practices §312.20 All Appropriate Inquiry (AAI) Rule for the development and implementation of the scope of services.

Phase I ESAs can also categorize identified items as a Business Environmental Risk (BER). A BER is defined by ASTM E1527-13 as "a risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of *commercial real estate*, not necessarily limited to those environmental issues required to be investigated in this practice."

1.2 Scope of Services

This Phase I ESA was conducted utilizing a standard of good commercial and customary practice that is consistent with ASTM E1527-13. Significant scope-of-work additions, deletions, or deviations to ASTM E1527-13 are noted in Section 1.4 of this report. In general, the scope of this assessment consisted of obtaining information from the User; reviewing reasonably

ascertainable information and environmental data relating to the Site; reviewing maps and records maintained by federal, state, and local regulatory agencies; interviewing persons knowledgeable about the Site; and conducting a Site reconnaissance. The specific scope of this assessment included the following:

1. Site reconnaissance to observe the condition of the Site and assess its location with respect to adjoining and surrounding property uses and natural surface features. The reconnaissance included the surrounding roads and observations of surrounding properties from public rights-of-way to identify obvious potential environmental conditions on neighboring properties. The reconnaissance was conducted in a systematic manner focusing on the spatial extent of the Site, and then progressing to adjacent and surrounding properties. Photographs taken as part of the site reconnaissance are provided in **Appendix B**.

2. An interview of Mr. Joseph Matheson, a plant manager at the Site for the past 16 years.

3. As per ASTM E1527-13, questionnaires were provided to the User and Owner to obtain information related to the Site.

4. A review of environmental databases maintained by the USEPA, federal, state, and local agencies within the approximate minimum search distance. Environmental Data Resources, Inc. (EDR) of Shelton, Connecticut prepared the environmental database report, which is included in **Appendix C**.

5. Physical characteristics of the Site were determined through referenced sources for topographic, geologic, soils, and hydrologic data.

6. A review and interpretation of aerial photographs, historical topographic maps, Sanborn Fire Insurance Maps (Sanborn maps), and city directories to identify previous activities on and in the vicinity of the Site. Copies of these historical documentation reports, generated by EDR, are included in **Appendix D**.

7. A review and interpretation of additional historical documentation reports from local county and other records. Pertinent portions of selected reports have been included in **Appendix E**.

8. The performance of a limited hazardous materials survey of accessible portions of the Site's warehouse, office, and roof. This limited survey was performed to identify the presence/absence of asbestos containing material (ACM) and lead based paint (LBP)

materials. A full demolition survey for the presence and quantity of hazardous materials on Site was not conducted. Twenty-five (25) samples were collected for ACM testing and five samples were collected for LBP testing. A memorandum summarizing the limited survey is included in **Appendix F**. Limited desktop or visual evaluations of the potential for radon, lead in drinking water, wetlands and mold material were also conducted as part of this Phase I ESA.

1.3 User Reliance

The User requested no special terms or conditions regarding this Phase I ESA. Langan has prepared this report specifically for the use of the User. Other parties cannot rely on this Phase I ESA, and the conclusions thereof, unless Langan receives a written request from User and Langan issues a "Reliance Letter". The relying party will be subject to the same limitations agreed to by the User.

1.4 Deletions and Deviations

This Phase I ESA has been performed using the guidelines of ASTM Standard E1527-13 (Standard Practice for ESA: Phase I ESA Process). No expressed or implied representation or warranty is included or intended in the report, except that the services were performed within the limits prescribed by the User, and with the customary thoroughness and competence of our profession. Significant deletions and deviations were not made to the above referenced standards.

1.5 Limitations, Assumptions, and Data Gaps

This Phase I ESA was prepared for the Site on behalf of the User. The report is intended to be used in its entirety. Excerpts taken from this report are not necessarily representative of the assessment findings. Langan cannot assume responsibility for use of this report for any property other than the Site addressed herein, or by any other third party without a written authorization from Langan.

Langan's scope of services, as described above, was limited to that agreed to with the User and no other services beyond those explicitly stated are implied. The services performed and agreed upon for this effort comport to those prescribed in the ASTM Standard E1527-13.

Limited sampling of accessible, in-place building materials was also performed for ACM as part of this Phase I ESA. Other environmental sampling (e.g. soil samples from corings or borings, soil gas or vapor samples from probes, and groundwater samples from borings or wells) were not performed.

This Phase I ESA was not intended to be a definitive investigation of all possible environmental impacts at the Site. The purpose of this investigation was limited to determining if there is reason to suspect the possibility of RECs and BERs at the Site. It should be understood that even the most comprehensive Phase I ESA may fail to detect environmental liabilities at a particular property. Therefore, Langan cannot "insure" or "certify" that the Site is free of environmental impacts. No expressed or implied representation or warranty is included or intended in this report, except that our services were performed, within the limits prescribed by the User, with the customary standard of care exercised by professionals performing similar services under similar circumstances within the same jurisdiction.

The findings and opinions provided in this report are based solely on the specific activities as required for the performance of ASTM E1527-13 and are intended exclusively for the purpose stated herein, at the specified Site, as it existed at the time of our Site reconnaissance.

The scope of services performed for this study did not include the following: cultural and historical resources, industrial hygiene, health and safety, ecological resources, endangered species, indoor air quality, and biological agents. Limited desktop or visual evaluations of the potential for radon, lead in drinking water, wetlands, mold, and polychlorinated biphenyl (PCB) containing material was conducted as part of this Phase I ESA.

This Phase I ESA was completed with the following data gaps:

- Complete responses to FOIA requests have not been received.

The above listed data gap is not expected to impact the overall conclusions of this Phase I ESA. If information becomes available which alters the conclusions of this Phase I, an addendum will be issued.

1.6 Consultant Qualifications

The signatures of the environmental professional(s) responsible for this Phase I ESA are provided on the submittal letter and/or cover page of this report.

The qualifications of the environmental professionals that conducted this ESA are presented in the resumes provided in **Appendix G**. Langan declares that, to the best of our professional knowledge and belief, the individuals responsible for this Phase I meet the definition of Environmental Professional as defined in #312.10 of 40 CFR 312. Langan has specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Site.

2.0 SITE DESCRIPTION

2.1 Location and Legal Description

This Site is 450 Johnson Avenue in Brooklyn, Kings County, New York, an approximately 0.80-acre area located on the southern side of Johnson Avenue and northern side of Ingraham Street (see **Figure 2**, **Appendix A**). The Site is officially comprised of Lots 17, 21, and 55 of Block 2992, with Lot 21 associated with the 450 Johnson Avenue address and Lots 17 and 55 associated with the 440 Johnson and 79 Ingraham Street addresses, respectively. The Site is situated in an industrial neighborhood of Brooklyn and, according to the New York City Department of Finance, and is listed with a Building Classification of F4/F5-Factory/Industrial and G6-Garage/Gas Station.

The Site is bound by the following properties:

North	Johnson Avenue, followed by parking lots for FedEx and Long Island Railroad (LIRR) subcontractors
South	Ingraham Street, followed by a parking lot/storage area and one- to two-story industrial/commercial buildings
East	Two four-story commercial/industrial buildings
West	A parking/storage lot and a two-story commercial/industrial building

2.2 Improvements

The overall Site configuration is shown on **Figure 2**, **Appendix A**. The Site occupies a total square footage of approximately 35,000 square feet (ft^2) or 0.80-acres. The Site is developed with three buildings and a parking lot:

- **Lot 17.** A two-story, 2,500 ft^2 warehouse and office building and a one-story, 7,500 ft^2 warehouse (alternative address of 440 Johnson Avenue)
- **Lot 21.** A one-story, 20,000 ft^2 warehouse (alternative address of 450 Johnson Avenue)
- **Lot 55.** A 5,000 ft^2 asphalt paved parking lot (alternative address of 79 Ingraham Street). The parking lot contains parking for approximately 16 vehicles.

The Site is accessed via two loading docks and four doorways on Johnson Avenue, and the parking lot is accessed from Ingraham Street.

2.3 Owner, Site Manager, and Occupant Information

The Site is owned by JBC Land LLC and is currently occupied by Envelope Manufacturers Corp.

2.4 Zoning

According to the New York City Planning Commission Zoning Map 13b (**Attachment E1, Appendix E**), the Site is located in a M1-2 manufacturing area. A M1-2 area is characterized by light industry such as woodworking and auto repair shops, and often serves as a buffer between manufacturing and adjacent residential or commercial areas.

2.5 Utilities

Utilities for the Site are as follows:

- Electricity is provided by Consolidated Edison Company of New York (Con Ed);
- Natural gas is provided by National Grid; and
- Potable water and sanitary sewer are provided by the New York City Water Supply System.

2.6 Current Use

The Site is currently occupied by Envelope Manufacturers Corp. Envelope Manufacturers Corp. was no longer manufacturing at the time of site reconnaissance.

3.0 REGIONAL DESCRIPTION AND PHYSICAL SETTING

3.1 Topography

According to the United States Geological Survey (USGS) 7.5-Minute Series topographic map of Brooklyn, New York (see **Figure 1, Appendix A**), the Site is situated at approximately 20 feet above mean sea level (ft amsl). According to the EDR Radius Map Report, the Site sits at an elevation of approximately 19 ft amsl. During site reconnaissance, Lot 55 was observed to be approximately five feet higher than the surrounding area, and the interior of Lots 17 and 21 were observed to slope slightly down and north towards Johnson Avenue.

3.2 Surface Water

Newtown Creek is a 3.8 mile long tributary leading to the East River. The southern terminus of Newtown Creek, also known as English Kills, is located approximately 250 feet north of the Site. Surface water was not observed within Site boundaries.

3.3 Floodplains

The Site is located in an area that is currently mapped by the Federal Emergency Management Agency (FEMA) Map Service Center as being an area of minimal flood hazard (Zone X). Zone X is defined by FEMA as "areas of minimal flood hazard from the principal source of flood in the area and determined to be outside the 0.2 percent annual chance floodplain". A copy of the map is included in **Attachment E2**, **Appendix E** .

3.4 Geology

Based on a review of the "Bedrock and Engineering Geologic Maps of Kings and Queens Counties, New York, and Parts of Bergen County, New Jersey" by Charles A. Baskerville, et al. the bedrock underlying the Site is the Hartland Formation. The Hartland Formation is comprised of a dark gray, medium to coarse-grained muscovite-biotite-garnet (mica) schist and gray fine-grained quartz-feldspar granulite with biotite and garnet, with localized concentrations of granite and intrusions of coarse-grained granitic pegmatite.

Based on investigations in the area, the Site cover is likely underlain by historic fill.

3.5 Hydrology and Hydrogeology

Groundwater flow is typically topographically influenced, as shallow groundwater tends to originate in areas of topographic highs and flows toward areas of topographic lows, such as rivers,

stream valleys, ponds, and wetlands. A broader, interconnected hydrogeological network often governs groundwater flow at depth or in the bedrock aquifer. Groundwater depth and flow direction are also subject to hydrogeological and anthropogenic variables such as precipitation, evaporation, extent of vegetation cover, and coverage by impervious surfaces. Other factors influencing groundwater include depth to bedrock, the presence of artificial fill, and variability in local geology and groundwater sources or sinks.

Groundwater depth is estimated to be about 7 to 16 feet below ground surface (ft bgs) and groundwater flow is anticipated to the north toward Newtown Creek. A site-specific study of groundwater depth and flow direction has not been identified or conducted.

3.6 Surrounding Properties

The Site is surrounded by industrial and commercial properties, as summarized below:

North / Northeast

100 Knickerbocker Avenue	Parking lot for FedEx Ground Transport vehicles
Johnson Avenue	Parking for LIRR subcontractors

South

82-86 Ingraham Street	A one-story and a two-story industrial building
88 Ingraham Street	A one-story and a two-story industrial building

East

474 Johnson Avenue	Four-story commercial and industrial building
91 Ingraham Street	Four-story commercial and industrial building

West

431 Johnson Avenue	Two-story commercial/industrial building
71 Ingraham Street	Two-story commercial/industrial building
75 Ingraham Street	Industrial storage lot

Many of the buildings noted above included more than one business, with few markings or identification of business name or type. Some information regarding occupants for nearby buildings on Johnson Avenue is included in the City Directory report included in **Appendix D**.

4.0 SITE AND REGIONAL HISTORY

The Site is located in an industrial neighborhood of Brooklyn, New York that was historically used for agriculture until the mid-1800s. By 1907, industrial, commercial and residential development were present in the surrounding area.

Previous occupants of the Site based on information provided by the EDR City Directory report include auto garages and manufacturers of envelopes. A summary is included in **Section 4.4**.

4.1 Aerial Photographs

Langan reviewed 16 aerial photographs provided by EDR to help evaluate past uses and relevant characteristics of the Site and surrounding properties:

- July 01, 1924
- January 01, 1941
- April 21, 1951
- January 04, 1954
- April 12, 1961
- February 23, 1966
- October 19, 1974
- October 29, 1976
- July 25, 1980
- March 26, 1984
- March 09, 1991
- April 04, 1994
- 2006 (date unreported by EDR)
- 2009 (date unreported by EDR)
- 2013 (date unreported by EDR)
- 2017 (date unreported by EDR)

EDR's Aerial Photo Decade Package report, which contains a copy of each photo, is provided in **Appendix D**. Features noted in the photographs are discussed below:

1924 Photograph. Lots 17 and 55 of the Site appear developed. Lot 21 is undeveloped. The area surrounding the site is characterized by industrial and residential development including rail yards and vacant land. The southern terminus of Newtown Creek is located approximately 250 feet north of the Site.

1941 Photograph. Lot 21 is occupied by an industrial building covering the entirety of the lot. The configuration of Lot 21 remains largely the same in aerials photographs to present day. Many vacant areas to the north and northeast of the Site have been improved with industrial development.

1951 Photograph. Parking and material storage is depicted at Lot 55; this use remains largely the same in aerial photographs to present day. The southern terminus of Newtown Creek has been widened to the west and east.

1961-1966 Photographs. The earlier widening of Newtown Creek to the west and east has been partially filled in.

1974-2017 Photographs. The Site appears as it does today and is developed with the two buildings on Lots 17 and 21 and a paved lot used for parking and storage on Lot 55. Surrounding properties are developed with buildings that appear in the current building configuration.

4.2 Topographic Maps

Langan reviewed historical topographic maps from EDR for the years: 1897, 1898, 1899, 1947, 1956, 1967, 1979, 1955 and 2013. A copy of EDR's Historical Topo Map Report is provided in **Appendix D**.

The following information was obtained about the Site and/or the immediate areas near the Site from the topographic maps:

1897-1947 Maps	The Site and surrounding properties to the west, south, and east are located in a densely developed area. The surrounding properties to the north appear undeveloped. The Site is situated at approximately 20 ft amsl. Newtown Creek is located north of the Site.
1947 Map	A rectangular, one-story building on Lot 21 is depicted in the same configuration it appears in present day. The Varick Ave Freight Yard is located east of the Site, and Bushwick Terminal is located west of the Site. The L subway line is present approximately 240 feet south of the Site, running beneath Harrison Place. Elevations in the area remain general similar to that of the previous maps.
1956 Map	Structures are not depicted on-site and on several nearby properties, based on map emphasis and/or detail. Select industrial and institutional buildings remain present in surrounding areas.
1967 Map	Two large industrial buildings are present northwest of the Site across Johnson Avenue.
1979-1995 Maps	Three industrial buildings are present northeast of the Site across Johnson Avenue.

2013 Map No structures are depicted on this topographic map.

4.3 Sanborn Maps

Langan reviewed historical Sanborn Fire Insurance maps from EDR for the years: 1888, 1907, 1933, 1951, 1965, 1968, 1977, 1979, 1980, 1981, 1982, 1986, 1987, 1988, 1989, 1990, 1991, 1993, 1994, 1995, 2001, 2002, 2003, 2004, 2005, 2006 and 2007. A copy of EDR's Sanborn Fire Insurance maps are provided in **Appendix D**. Features noted in the maps are discussed below:

1888. The Site and surrounding areas were undeveloped. Newtown Creek is visible north of the Site.

1907. Lots 17 and 55 were labeled "Borough Lumber Co.: 2nd Hand Lumber, and Lot 21 was undeveloped. Surrounding properties were labeled as being used for coal storage, construction supply storage, as an ice depot, as a wagon building facility and for wood working. The southern terminus of Newtown Creek has been widened to the east and west and appears channelized.

1933. Lot 21 was improved with a one-story auto garage with a gasoline tank in the northeast corner of the building. Lot 17 was used for metal working, wood working, and lumber storage. Lot 55 was occupied with a one-story lumber shed and office. Surrounding property use included casket manufacturing, a coal yard and a paint spraying facility.

1951. The building on Lot 21 was occupied by a paper box manufacturer. The Lot 17 building was occupied by a warehouse and a repair shop. Lot 55 was unimproved and used for as lumber storage. Surrounding property use included casket manufacturing, drum and barrel cleaning, dry cleaning, metal works and a paint spraying facility.

1965 – 1968. The building on Lot 21 was used as a plastic products warehouse. The building on Lot 17 was used for baled feather storage. Lot 55 was unimproved and used for storage. Surrounding property use included auto repair, casket manufacturing, laundry, metal works, a paint spraying facility and plastics manufacturing.

1977 – 1986. Lot 55 was improved with a one-story commercial building and otherwise used for parking. The configuration and usage of Lots 17 and 21 remained the same as the 1965-1968 maps. Surrounding property use included auto repair, casket manufacturing, laundry, metal working, a paint spraying facility and pharmaceutical manufacturing.

1987 – 1991. Lots 17 and 21 were occupied by a warehouse and a building used for storage. Surrounding property use included auto repair, casket manufacturing, laundry, metal working, a paint spraying facility and pharmaceutical manufacturing.

1991 – 1995. Lots 17 and 21 were occupied by a manufacturing facility and a building used for storage. Surrounding property use included laundry, metal working and a paint spraying facility.

2001 – 2007. The building previously shown on Lot 55 was demolished. The configuration and usage of Lots 17 and 21 remained the same as the 1991-1995 maps. Surrounding property use included laundry, metal working and a paint spraying facility.

4.4 Historic Site Occupants (City Directory Review)

Langan reviewed a city directory search and abstract provided by EDR. For each address, the directory lists the name of the corresponding occupant at approximate five year intervals. Business directories including city, cross reference, and telephone directories were reviewed, if available, for the years spanning 1928 through 2014. The City Directory Report is included in **Appendix D**. A summary of the occupant listings for the Site addresses is below:

Address	Reported Year	Reported By	Occupant
450 Johnson Ave	1992-2005	EDR	Envelope Manufacturers Corp
	1985	EDR	Consolidated Spring Corp
	1976-1980	EDR	Folio Printing Corp.
	1934	EDR	Johnson Ingraham Garage
	1928	EDR	Stagg H Garage

4.5 Historic Site Ownership

Historical ownership of the Site according to information retrieved from Automated City Register Information System (ACRIS) website (http://www.nyc.gov/html/dof/html/jump/acris.shtml), is summarized below by lot.

Date	Party 1	Party 2
Lot 17		
1/15/1981	Louis Puro and Jacob Puro	Gerald J. Levy, c/o/ Brunel, Cochrane & Levy, Inc.
2/25/1981	Gerald J. Levy, c/o/ Brunel, Cochrane & Levy, Inc.	Doogle Associates
3/26/1981	Michael L. Puro	Gerald J. Levy, c/o/ Brunel, Cochrane & Levy, Inc.
4/17/1981	Gerald J. Levy, c/o/ Brunel, Cochrane & Levy, Inc.	Doogle Associates
12/20/1988	Doogle Associates	Robert Harper
12/17/2012	Robert Harper	JBC Land LLC
Lot 21		
1/15/1981	Louis Puro and Jacob Puro	Gerald J. Levy, c/o/ Brunel, Cochrane & Levy, Inc.
2/25/1981	Gerald J. Levy, c/o/ Brunel, Cochrane & Levy, Inc.	Doogle Associates
3/26/1981	Michael L. Puro	Gerald J. Levy, c/o/ Brunel, Cochrane & Levy, Inc.
4/17/1981	Gerald J. Levy, c/o/ Brunel, Cochrane & Levy, Inc.	Doogle Associates
1/23/2006	New York City Industrial Development Agency	Robert C. Harper
12/17/2012	Robert C. Harper	JBC Land LLC
Lot 55		
1/23/2006	New York City Industrial Development Agency	Robert C. Harper
12/17/2012	Robert C. Harper	JBC Land LLC

A printout of the information from the ACRIS website is included as **Attachment E3** in **Appendix E**.

4.6 Environmental Orders, Liens, Use Limitations

Langan reviewed an environmental lien and activity use limitation report provided by EDR. Langan did not identify environmental orders, liens, or use limitations associated with the Site. The Environmental Lien and AUL Search is included in **Appendix D**.

4.7 Valuation Reductions for Environmental Issues

Langan has not identified established, public reductions in the valuation of the Site for environmental issues.

4.8 Prior Assessments

Langan was provided with one previous Phase I ESA report for the Site. A summary of assessment findings is provided below.

Phase I ESA – May 21, 2019

A Phase I ESA was performed by HydroTech Environmental Engineering and Geology, DPC in May 2019 (HydroTech, 2019) for Mr. Robert Harper. The assessment identified the following RECs:

- A suspected gasoline UST on Lot 21;
- Historical site use as a metal foundry and for envelope production;
- Potential vapor intrusion at the Site; and
- The presence of groundwater monitoring wells in the sidewalks on the north and south sides of the Site, with additional groundwater monitoring wells on nearby properties to the east and south.

The report also discussed an area where drums were cleaned using solvents and stored, but did not present its location. The drums were reportedly disposed of by an approved waste handler monthly. The report further described the suspected gasoline UST as 'decommissioned' according to the former Site owner, indicating it may be abandoned in place. Additionally, peeling paint was observed on the first floor of Lot 21, and based on the age of building construction (1931), the report concluded it may be LBP.

During the site reconnaissance, twelve monitoring wells were observed in the sidewalks immediately adjoining the Site, six along Johnson Avenue and six along Ingraham Street. The drum storage area described in the Hydrotech Phase I was not identified, however drum storage was observed throughout the site. Additional information is provided in Section 5.4. Selected portions of this Phase I ESA report are included in **Attachment E5**, **Appendix E**.

5.0 SITE RECONNAISSANCE AND INTERVIEWS

The site reconnaissance was performed on July 10, 2019 by Deirdre Casey of Langan. The Site reconnaissance was conducted in a systematic manner, focusing first on the interior of the warehouse located on Lots 17 and 21 inspecting the storage area, manufacturing areas, office space and roof, and finishing with the parking lot on Lot 55 and adjoining properties. The weather on the day of the site reconnaissance was sunny with an approximate ambient temperature of 85 degrees Fahrenheit. Photographs from the site reconnaissance visit are provided in **Appendix B**.

The assessment of the adjacent and surrounding properties was limited to identifying, if possible, indications of past or current use that may involve the use, storage, disposal, or generation of hazardous substances or petroleum products. The assessment was also intended to collect information the general topography of the surrounding area.

5.1 Interviews

Langan interviewed Mr. Joseph Matheson during the site reconnaissance. Mr. Matheson is a plant manager at the Envelope Manufacturers Corp and has worked at the Site for 16 years.

5.2 Site Features and General Reconnaissance Observations

The Site is located in an industrial and commercial section of the East Williamsburg neighborhood of Brooklyn, New York. The locations of select environmental observations discussed in the following sections as encountered during the Site reconnaissance are identified on **Figure 3**, **Appendix A**.

Site Use

The Site is owned by JBC Land LLC and is occupied by Envelope Manufacturers Corp. Lot 17 was improved with a two story warehouse and office building and a one-story warehouse, Lot 21 is improved with a one-story warehouse and Lot 55 is improved with an asphalt-paved parking lot. The warehouse portion of the three buildings were interconnected and utilized for a single use, envelope manufacturing. The existing buildings on Lot 17 and 21 were constructed in 1931. The warehouse space on Lot 17 was primarily utilized for storage and the warehouse space on Lot 21 was primarily utilized for envelope production. Envelope Manufacturers Corp. was in the process of ceasing operations at the time of site reconnaissance and production was no longer taking place. Some chemical and material storage was still occurring at the time of the Site

Reconnaissance, as discussed in Section 5.4 and the other subsections of this 'site features' portion of the report below.

Structures

The Site occupied a total square footage of approximately 35,000 ft^2 or 0.80 acres and was developed with an asphalt-paved parking lot and three buildings. Two boiler rooms were observed on the Site, one in the central part of Lot 17 and one in a partial cellar in the northeast corner of Lot 21. The partial cellar is accessible through a sidewalk hatch on Johnson Avenue.

Overall Condition / Upkeep

Cracks were observed throughout the building slab and isolated staining was observed on the slab underneath large equipment. Paint appeared to be peeling from ceiling supports and walls. Limited areas of adhesive and ink staining were observed on the production area floor. Additional information on this condition is presented in the *Stained Soil and/or Surfaces* section and Section 5.6 below.

Vaults

Langan observed a tank of unknown size in a subsurface vault located in the northeast corner of Lot 21 that is likely indicative of a septic tank. Pipes from the south (assumed to be a floor drain connection) and the east (assumed to be a restroom connection) were connected to the tank. The vault was constructed of stone and mortar and a tank access hatch was identified in the vault. An organic odor was noted around the vault. While the tank appeared to be a septic tank, Mr. Matheson indicated the facility is connected to the New York City Department of Environmental Protection (NYCDEP) sewer and that the presumed septic tank may be a holding tank for site waste water prior to discharge to the NYCDEP sewer system. The vault and vault interior are identified in **Photos #16** and **#17, Appendix B**. The septic holding tank was observed in a location, consistent with the former location of a gasoline tank noted on the 1933 Sanborn map.

Odors

Organic odors were noted in the area of the presumed septic tank vault, located in the northeastern part of Lot 21.

Pools of Liquids

Langan did not observe pools or ponded liquids at the Site during the reconnaissance.

Pits, Ponds, or Lagoons

Langan observed seven drainage pits and two sump pits during the site reconnaissance. These drainage features are discussed in greater detail in **Section 5.6**.

Stained Soil and/or Surfaces

Large envelope printing and folding machines are located throughout Lot 21. Minor to heavy staining was observed surrounding most machinery. Machinery was staged on top of concrete with no large cracks, breaches, or other pathways to the subsurface. Staining around envelope machinery is featured in **Photo #5**, **Appendix B**. Three areas of ink staining were observed on Lot 21. According to Mr. Matheson, all inks used on-site are water based. Ink staining on Lot 21 is featured in **Photo #6, Appendix B.**

The concrete floor in the remainder of the warehouse was generally free of staining and in average condition.

Lot 55 was a fully asphalt-paved lot. A recycling compactor staged on top a concrete pad was observed in the northeast corner of the parking lot. No staining or other evidence of a discharge was observed on the asphalt or the recycling compactor pad.

Stressed Vegetation

No stressed vegetation was observed at the Site during the Site reconnaissance.

Abandoned Equipment / Waste

The facility was no longer operational at the time of site reconnaissance. All equipment was inactive and tagged for auction.

5.3 Stormwater

Stormwater catch basins were not observed within the Site boundary. One stormwater catch basin was observed immediately adjoining the Site along Johnson Avenue. Additional stormwater catch basins were observed further along Johnson Avenue. These catch basins drain to the NYCDEP sewer system. Staining and indications of a release were not observed near catch basins.

5.4 Material & Waste Storage

No dumpsters were present onsite. Mr. Matheson indicated that during past production at the facility, solid waste generated on-site was collected in a box staged on a forklift. The box was loaded into a box truck periodically for off-site disposal.

Chemicals were observed to be stored near machinery on Lot 21, in a mechanical maintenance area, and in an office. Chemicals in the mechanical maintenance area were staged on shelves, in cabinets, or on wooden pallets on top of a concrete floor with no staining or other evidence of a release. Cleaning supplies including bleach products an insecticides were observed in the office area.

Chemical storage observed on-site is summarized in the table below:

Chemical	Size	Quantity
Toluene	1-gallon pail	1
Ethyl Alcohol	55-gallon drum	1
Lubricant	5-gallon bucket	3
	14-ounce tube	22
Hydraulic Oil	5-gallon bucket	2
	7-gallon bucket	1
	15-gallon bucket	5
	55-gallon drum	3
SS-80 Electric Solvent Degreaser	15-gallon bucket	1
WD-40	5-gallon bucket	2
Fire Extinguisher	10-pound can	10
Water Based Ink	5-gallon bucket	15
Ink Defoamer	54-gallon bucket	1
Acrylic	1-gallon pail	2
Repair Compound	8.6-ounce can	11
Belt Conditioner	11-ounce can	16
Adhesive	275-gallon tote	2
	3-gallon jug	28
Cooling Water Treatment	15-gallon drum	4
Lubricant/Coolant	5-gallon bucket	4
Waste Oil	5-gallon bucket	9
Motor Oil	1.5-gallon jug	12
Speedy Cleaner	55-gallon drum	1

5.5 Storage Tanks

Underground Storage Tanks (USTs):

As discussed in **Section 5.2**, a presumed septic holding tank of an unknown size was identified in a subsurface vault in the northeast corner of Lot 21. This tank was observed in approximately the same location as a gasoline tank noted on the 1933 Sanborn map.

A partial cellar boiler room was located on the northeast corner of the Site. No evidence of an aboveground storage tank (AST) or UST was observed in this area.

A liquid level measurement gauge (a petrometer) and associated piping were observed on a wall within the boiler room located on Lot 17. A concrete patch near the petrometer was noted, which may represent the location of a former UST. The piping and concrete patch are identified in **Photos #18** and **#19, Appendix B.**

Aboveground Storage Tanks (ASTs):

Langan did not observe ASTs during site reconnaissance.

5.6 Wastewater Discharges

Septic Systems

Langan observed a presumed septic tank in the northeast corner of Lot 21. This tank is discussed in greater detail in **Section 5.2**.

Wastewater

According to Mr. Matheson, all wastewater generated on-site is discharged to the NYCDEP sewer.

A collection of drainage features were observed inside the buildings on the property, including seven floor drains, seven drainage pits, four roof drains, two sump pits, and one trench drain. Sediment and debris was observed in the floor drains and drainage pits, preventing the collection of much information about the construction, routing, and/or disposition. Observations that were possible included the following:

- The drainage and sump pits appeared to be constructed of concrete including a concrete base, and floor drains appeared to be connected to subsurface piping.
- One drainage pit located in the southwestern part of Lot 17 was observed to contain a

sewer clean out (**Photo #11**, **Appendix B**).

- Roof drains were observed extending from the roof to the subsurface through a network of pipes that are presumed to connect with the NYCDEP sewer system.
- Two sump pits were observed in the partial basement on Lot 21 and were partially filled with water (**Photo #15**, **Appendix B**).
- The sump pits appeared to be constructed of concrete including a concrete base.
- A trench drain was observed along the northern boundary of Lot 17 at the opening of the loading bay. This drain appeared to be clogged with sediment and no longer functional.
- Staining was observed around one floor drain in the central part of Lot 21. Staining was purple in color and interpreted as a mix of printing ink and waste adhesive (**Photo #6**, **Appendix B**).

Two stormwater drains were observed on Lot 55 that are presumed to connect with the NYCDEP sewer system. No staining, odors or other evidence of a release was observed around these drains.

5.7 Air Emissions

Langan did not observe air emissions at the time of the Site reconnaissance. Exhaust vents for both boilers were observed on the building roof. Additional ventilation fan exhaust points were observed on the roof. The Lot 17 boiler exhaust and exhaust fans are identified on **Photo #21**, **Appendix B**.

5.8 PCBs

Four dry-type electrical transformers were observed at the Site. All four transformers were staged on concrete with no staining or other evidence of a release in the surrounding area. A dry type transformer identified in the northeast corner of Lot 21 is identified in **Photo #9**, **Appendix B**.

Three hydraulically powered scissor lift tables were observed on Lot 21. These lifts were powered by hydraulic oil reservoirs located on the legs of the lift and installed in a concrete depression on the floor. The concrete beneath the hydraulic reservoirs appeared to be in good condition with no staining or other indications of a release. A typical hydraulic scissor lift table is identified in **Photo #20**, **Appendix B**.

5.9 Groundwater Wells

Langan did not observe environmental monitoring wells within the Site during the reconnaissance, however monitoring wells were observed in the sidewalks immediately adjoining the Site to the north and south. Six monitoring wells were observed along Ingraham Street, and six were observed along Johnson Avenue. The wells are associated with two adjoining regulatory sites, 88 Ingraham Realty Corp/Popular Uniform (VCP Site No. V00170) and Ingraham Street Sidewalk Groundwater Project (NY SHWS Site Code 224142). Additional information about these sites is provided in Section 6.1.2.

6.0 ENVIRONMENTAL RECORDS REVIEW

6.1 Federal and State Database Review

Langan reviewed an environmental database search report, prepared by EDR, for the Site and surrounding area. The EDR report is a listing of properties identified on select federal and state standard source environmental databases within the approximate search radius specified by ASTM Standard Practice for E1527-13. This information is reported to Langan by EDR, and to EDR by government sources; therefore, neither Langan nor EDR can verify the completeness or accuracy of the database information. Langan reviewed each environmental database on a record-by-record basis to estimate if certain Sites identified in the report are suspected to represent a potential impact to the Site. A copy of regulatory database information was provided by EDR and is included in **Appendix C**.

Langan also reviewed "Orphan Sites" listed within the report. Orphan Sites are those sites that could not be mapped due to inadequate address information. Any Orphan Sites that were identified by Langan within the ASTM search radii, either during the site reconnaissance or by cross-referencing to mapped listings, are addressed in the discussion below.

The Site address 450 Johnson Avenue is listed in five (5) separate state and federal databases. These include Resource Conservation Recovery Act (RCRA) – Conditionally Exempt Small Quantity Generators (CESQG), Aerometric Information Retrieval System (US AIRS), Facility Index System (FINDS), Enforcement Compliance History Online (ECHO), and NY Manifest.

The following summary table lists the number of properties by database within the prescribed search radius appearing in the EDR Radius Map Report:

Database (Date of Government Version)	Minimum Search Area	Site Listed	Cases Within Search Area
Federal			
Superfund Enterprise Management System Archive (SEMS and SEMS-ARCHIVE) (06/06/2019)	1/2 mile radius	No	1
Resource Conservation and Recovery Act –Large Quantity Generators (RCRA –LQG) (03/27/2019)	Target Property and Adjoining Properties	No	0
RCRA –Small Quantity Generators (RCRA –SQG) (03/27/2019)	Target Property and Adjoining Properties	No	2
RCRA – Conditionally Exempt small Quantity Generators List (CESQG) (03/27/2019)	Target Property and Adjoining Properties	Yes	0

Database (Date of Government Version)	Minimum Search Area	Site Listed	Cases Within Search Area
Enforcement Compliance History Online (ECHO) (04/09/2019)	Target property	Yes	0
US Institutional Controls and Engineering Controls (05/29/2019)	½ mile radius	No	0
State, Local, and Tribal			
NY SWF/LF (Solid Waste Facility Directory) (04/01/2019)	1/2 mile radius	No	19
NY Leaking Tanks (LTANKS) (05/14/2019)	1/2 mile radius	No	40
New York Historic Leaking Tanks (HIST-LTANKS) (07/07/2005)	1/2 mile radius	No	0
Petroleum Bulk Storage Facilities (PBS) Underground Storage Tank (UST) and Aboveground Storage Tanks (AST) Databases (03/27/2019)	Adjoining Properties	No	5
New York State Hazardous Waste Sites (NY SHWS) (05/15/2019)	1 mile radius	No	12*
Additional Environmental Sources			
US Brownfields (06/04/2019)	1/2 mile radius	No	0
New York Manifest (NY Manifest) (05/01/2019)	1/4 mile radius	Yes, 1	90
New York Brownfields (05/13/2019)	1/2 mile radius	No	6*
New York Voluntary Clean Up Site (NY VCP) (02/18/2019)	1/2 mile radius	No	8*
Integrated Compliance Information System (ICIS) (04/08/2019)	1/8 mile radius	No	0
New York Institutional Control, Engineering Control (NY INST/ENG CONTROL) (05/15/2019)	1/2 mile radius	No	4
Other Ascertainable Records			
RCRA NonGen/NLR (3/1/2018)	Target Property and Adjoining Properties	No	1
Formerly Used Defense Sites (FUDS) (05/21/2019)	1 mile radius	No	0
Facility Index System (FINDS)/FRS (06/05/2019)	Target Property	Yes	0
New York SPILLS (NY SPILLS) (05/14/2019)	1/8 mile radius	No	13
US AIRS (09/26/2017)	1/8 mile radius	Yes	0
NY DRYCLEANERS (06/10/2019)	1/4 mile radius	No	2
EDR High Risk Historical Records			
EDR Hist MGP	1/2 mile radius	No	3
EDR Hist Auto	1/8 mile radius	No	1
EDR Hist Cleaner	1/8 mile radius	No	1

**Of seven orphan sites identified in the EDR report, five were located within the applicable search radii. These include one VCP site, 1 NY Brownfields listing, and four SHWS listings.*

A description of the reviewed databases is provided in the EDR Radius Map Report **(Appendix C)**. Supplementary information was identified in EPA and New York State Department of Environmental Conservation (NYSDEC) Online Databases (**Attachment E5, Appendix E**). A summary of Site database listings and other properties identified within the prescribed search area is presented below.

6.1.1 Site Listings

A summary of the Site listings is included below.

Envelope Manufacturing Corp – 450 Johnson Avenue
(RCRA-CESQG, NY Manifest, FINDS, ECHO and US AIRS)

The USEPA regulates hazardous waste under RCRA, which identifies and tracks hazardous waste from the point of generation to the point of disposal. RCRA permitted Treatment, Storage, Disposal (RCRA-TSD) facilities are those which treat, store, and/or dispose of hazardous waste. Conditionally Exempt Small Quantity Generators (CESQG) generate no more than 2,100 pounds of hazardous waste per month.

Envelope Manufacturing Corp (EPA ID No. NYD987006996) is identified as a RCRA-SQG (generated more than 100 kg but less than 1,000 kg per month) from 1992 to 2006 and a RCRA-CESQG from 2006 to present. Waste types consist of D001 (ignitable wastes). No violations were identified.

The Site was listed in FINDS and ECHO databases for its listing as a RCRA-CESQG, a US AIRS regulated site and a New York Facility Information System (FIS) site. The US AIRS listing is related to a facility-wide permit for miscellaneous objects that can potentially release air emissions. The Site was in compliance with its permit as of the most recent update on May 7, 2014. The FIS is the NYSDEC information system for tracking environmental facility information found across the state, it does not necessarily indicate the presence of an environmental condition of concern.

The Site is also listed in the NY MANIFEST database which tracks hazardous waste manifest information under EPA ID No. NYD987006996. Two manifests were identified - one for an unreported waste, and one for D001 non-listed ignitable wastes. No violations or enforcement actions are associated with the listing.

These listings appear to be related to historical operations on the Site.

6.1.2 Neighboring Property Listings

Langan reviewed the EDR listings of off-site facilities, NYSDEC and USEPA Databases for additional information of nearby properties. The following three adjacent properties or cases in the near vicinity of the Site are those most likely to represent potential environmental concerns to the Site. Locations of each Site or case are included on **Figure 3**, **Appendix A**.

Newtown Creek (230 feet North of the Site)
(SEMS, ID NYN000206282)

The Newtown Creek is a tidal arm of the New York-New Jersey Harbor estuary. Industrial development along the Newtown Creek and its tributaries since the 1800's included the filling of former marsh areas. Former industrial activities included oil refining, copper smelting, fertilizer production, ship building, saw mills, and coal yards. Industrial pollution and dumping have contributed to current contamination levels. The entirety of the Newtown Creek was designated as a Federal Superfund site in 2010. Sediment contamination includes volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), metals, and polychlorinated biphenyl (PCBs). The USEPA is currently executing characterization studies, and a final remedy has not yet been selected. Potentially responsible parties (PRP) were identified as contributors to contamination at Newtown Creek and included oil refineries, gas companies, electric companies adjoining the Newtown Creek. The Site was not included as a PRP. Based on the nature of the contaminants, down-gradient location, and its distance, the listing does not represent a concern for the Site.

88 Ingraham Realty Corp/Popular Uniform – 88 Ingraham St (Nearby Property to South) (NY ENG/INST Controls, RCRA-SQG [EPA ID No. NYD020562838], NY VCP [VCP Site No. V00170], NY Manifest)

This listing is related to the former Popular Hand Laundry property immediately south of the Site across Ingraham Street. Contaminants of concern include VOCs, SVOCs and metals in soil, soil vapor and groundwater. According to a December 2017 Fact Sheet issued by the NYSDEC, the 88 Ingraham Realty property achieved cleanup requirements at the site.

This property is also listed as a RCRA-LQG from 1985 to 1999, a RCRA-NonGen from 1999 to 2011 and a RCRA-SQG from 2011 to present. Waste consisted of F002 (spent halogenated solvent. One written informal violation was assigned to this generator on March 30, 1987 and compliance was achieved on the same day. The Site is also listed in the NY MANIFEST under EPA ID No. NYD020592838. One manifest was identified for the transport of PCE (D039), TCE (D040) and spent halogenated solvents (F002). No violations or enforcement actions are associated with the listing.

Off-site investigation related to this listing is discussed below as the Ingraham Street Sidewalk property.

Ingraham Street Sidewalk Groundwater Project (Southern Adjoining Area)
(NY SHWS Site, Code 224142)

An orphan SHWS listing for "Ingraham Street Sidewalk GW" was identified during off-site investigations related to the 88 Ingraham Realty Corp VCP site (V00170). This SHWS listing identifies three monitoring wells across from 88 Ingraham Street, indicating the sidewalk adjoining the Site to the south. Groundwater sampling identified VOCs exceeding applicable groundwater standards. Indoor air samples were not collected.

Due to the location and immediate adjacency of this listing to the Site and the presence of contaminants in groundwater, the potential of groundwater and soil vapor impacts migrating to the Site exists.

6.1.3 Orphan Listings

According to EDR, an orphan listing is a property that cannot be mapped due to poor or inadequate address information. There were seven orphan listing identified by the EDR search. Two listings were outside the applicable search radius for the identified databases, two were located approximately 0.1 miles north east and cross gradient, and two were described as not qualifying for the listed database. The remaining site, Ingraham Street Sidewalk GW, is discussed above.

6.2 Local Agency Review

Langan submitted Freedom of Information Act (FOIA) Requests on June 21, 2019 to the United States Environmental Protection Agency (USEPA), New York State Department of Environmental Conservation (NYSDEC), New York State Department of Health (NYSDOH), New York City Department of Environmental Protection (NYCDEP), New York City Department of Health (NYCDOH) and the Fire Department of New York (FDNY). To date, complete responses have not been received from the NYSDEC. The USEPA, NYSDOH and NYCDOH did not identify responsive records. Copies of FOIA requests and responses are provided in **Attachment E6**, **Appendix E**. Selected portions of three offsite reports, are included in **Attachment E5**. A list of documents received from each agency is below:

NYSDEC

- Five access stipulation agreements for 85-89 Harrison Place from March 2012 to May 2014 as part of the Ingraham Sidewalk SHWS (site code 224142) investigation.

- An undated tag map for groundwater analytical results on the 88 Ingraham site and off-site wells, an undated and highlighted Sanborn Map, and a Well Drilling and Development Plan figure by Tyree Environmental Corp for 88 Ingraham Street dated October 8, 2006.
- A Site Work Plan by Shaw Infrastructure & Environmental Engineering of NY, P.C. (Shaw) dated October 21, 2013 for the Ingraham Sidewalk SHWS (site code 224142) investigation.
    - Appendix J of this report includes NYCDEP figures depicting a Relief combined sewer line transecting Ingraham Street to Johnson Avenue, that appears to project across the site near the Lot 17 and 55 boundary. The approximate location of the line is shown on **Figure 3**. Appendix J is included in **Attachment E5** in **Appendix E**, with the map also includes as **Attachment E9** in **Appendix E**.
- A Site Characterization Report by Shaw dated February 2015 for the Ingraham Sidewalk SHWS (site code 224142) investigation.

NYCDEP

- A Division of Emergency Response and Technical Assessment (DERTA) FOIL report for an incident that occurred at Lot 21 on January 17, 2011 was provided. The Incident involved a service line causing a smoking manhole that lead to elevated carbon monoxide. The electrical pull pox provided a conduit for carbon monoxide fumes to enter the Lot 21 building.
- A DERTA FOIL report for an incident that occurred at 88 Ingraham Street, the southern adjoining property, on August 6, 2010. The incident involved the identification and removal of an abandoned drum of non-hazardous waste water.
- A DEP Complaint system general inquiry report for a complaint that occurred at 88 Ingraham Street, the southern adjoining property, on November 9, 1998. This complaint involved the storage of hazardous chemicals on-site following cessation of operations. This complaint was noted as "no further action required; remediation complete".

FDNY

- Records for Block 2992, Lot 17 (440 Johnson Avenue) that indicate the presence of a 1,080-gallon no. 2 fuel oil UST on February 3, 1998 when there was a conversion from heating oil to natural gas.
- Records for Block 2992, Lot 21 (450 Johnson Avenue) indicating the presence of a 2,500-gallon no. 2 fuel oil tank on January 8, 1993 when there was a conversion from heating oil to natural gas.

- No records for tanks at Block 2992, Lot 55 (79 Ingraham Street).

The Site Characterization Report by Shaw for the Ingraham Sidewalk SHWS indicated that chlorinated VOCs above NYSDEC Title 6 of the Official Compilation of New York Codes, Rules and Regulations (NYCRR) Part 703.5 and the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values for Class GA Water (NYSDEC SGVs) Elevated soil vapor concentrations were identified in up-gradient monitoring wells on Ingraham Street and down-gradient monitoring wells on Johnson Avenue. Selected portions of the Shaw report, are included in **Attachment E5**.

Online Database Review

Langan conducted a review of the online databases maintained by various New York City departments. Information obtained from each database are described by department below.

New York City Department of Buildings

Langan conducted a records search through the NYCDOB online query system on June 21, 2019. The Site is comprised of three individual lots, the details of each are provided below:

Address	Block, Lot	Building Identification Number (BIN)	Department of Finance Classification
440-448 Johnson Avenue	Block 2992, Lot 17	3325627	F5 – Factory/Industrial
450 Johnson Avenue, 83-89 Ingraham Street	Block 2992, Lot 21	3070612	F4 – Factory/Industrial
79-81 Ingraham Street	Block 2992, Lot 55	3070616	G7 – Garage/Gas Station

Certificates of occupancy (CO) were identified for all three lots. Details for each are provided below by lot:

- Block 2992, Lot 17 (440 Johnson Avenue)
  - CO No. 51554 dated July 12, 1928 lists a one-story building used for 'ordinary use' and 'factory'. The owner is noted as NKC Holding.
- Block 2992, Lot 21 (450 Johnson Avenue)
  - CO No. 46299 dated September 1, 1927 lists the one-story building a "boiler room for factory". The first floor use, second floor use and owner name are illegible.
  - CO No. 104798 dated March 18, 1942 lists a boiler room in the cellar and a factory on the ground floor. No owner is noted.

- Block 2992, Lot 55 (79 Ingraham Street)
    - CO No. 82338 dated May 7, 1937 lists the building use as an 'office'. The owner name is illegible.
    - CO No. 82916 dated June 17, 1937 lists a "stone cutting shop in connection with stone yard" on the first floor. No owner is noted.

A copy of the NYCDOB property profile report and records are included in **Attachment E7, Appendix E**.

Actions and Relevant Observations

The NYCDOB portal lists the following actions, jobs and violations for each lot:

- Lot 17 had one DOB violation, one jobs, and 40 actions.
    - The actions were related to alterations, building notice, certificate of occupancy, docket, oil burner application, new building, plumbing and a DOB violation.
        - New building actions were dated 1902, 1905, 1928, 1946, and 1949, predating site development observed in Sanborn Maps.
        - Two applications for No. 2 fuel oil burner were filed in 1912 and 1946.
- Lot 21 had ten DOB violations, one ECB violation, three jobs, and 38 actions.
    - The actions were related to alterations, building notice, construction, elevator, electric signage, oil burner applications, new buildings, plumbing and DOB violations.
        - The new building actions were dated 1923 and 1924, around the time of site development. The oil burner applications were dated 1955 and 1965.
        - An alteration dated 1933 was labelled "GASTANK" indicating a possible install date for the gasoline UST identified in the 1933 Sanborn Map.
- Lot 55 had 12 actions and no violation or jobs
    - The actions were related to alterations, certificates of occupancy and new buildings. The new building actions were dated 1936, around the time of site development.

No information regarding current gasoline and fuel tank size or status was available; fuel oil and/or gasoline USTs may exist at the Site.

New York City Planning Commission

According to the New York City Planning Commission (NYCPC) Zoning Map 13b **(Attachment E1**, **Appendix E)**, the Site is located in a M1-2 manufacturing area. A M1-2 area is characterized by light industry such as woodworking and auto repair shops, and often serves as a buffer between manufacturing and adjacent residential or commercial areas. A copy of the zoning map is included in **Attachment E1**, **Appendix E**.

Historical industrial use for the Site and surrounding area was identified during review of NYCPC documents. However the uses were non-specific, therefore, no RECs were specifically identified for the Site.

NYCDEP Clean Air Tracking System (CATS)

Langan conducted a records search through the NYCDEP CATS online query system on June 21, 2019. Records were identified for Lots 17 and 21. One boiler record for Lot 17 details a certificate to operate an industrial boiler that expired in April 2018. The fuel type was not provided. Records for seven boilers at Lot 21 were identified. These records detail the registration cancellation of two industrial process equipment permits the expiration of one industrial permit, the cancellation of a natural gas powered boiler registration, the cancellation of two No. 2 fuel powered boilers, and the current registration of one natural gas powered boiler.

A copy of NYCDEP CATS records are provided in **Attachment E8, Appendix E**.

7.0 SUPPLEMENTAL CONSIDERATIONS

7.1 Wetlands

Wetlands were not observed within Site boundaries. The NYSDEC Environmental Resource Mapper identifies riverine, estuarine and marine deepwater areas mapped approximately 230 feet north of the Site in the Newtown Creek as shown on **Figure 2, Appendix A.**

7.2 Asbestos

Potential ACM building materials were identified within the Site buildings during the Site reconnaissance. Twenty-five (25) non-destructive samples were collected from the warehouse, office, roof, and building exterior including insulation, plaster, joint compounds, mastic, ceiling panels, flooring materials, caulk, gypsum board, flue cement, and roofing materials. Seven (7) materials sampled were identified to be assumed ACM material including insulation, mastic, flooring materials, caulk and roofing materials. A summary of results and quantity estimates is provided in **Appendix F**.

7.3 Lead-In-Paint

The use of lead in household paint was banned by the U.S. Environmental Protection Agency (EPA) effective January 1, 1978. The EPA and the U.S. Department of Housing and Urban Development (HUD) consider lead-based paint as containing a lead concentration equal to or greater than 1.0 milligram per square centimeter (mg/cm^2) or 0.5% lead by weight, as defined by Title X of the 1992 Housing and Community Development Act. Five (5) non-destructive samples were collected from paint throughout the warehouse space and the office. Material sampled was determined to be non-LBP. A summary of results is provided in **Appendix F**.

7.4 Lead-In Drinking Water

Lead has historically been used in pipes, solder, and fittings used in water distribution systems and building plumbing. In 1986, EPA banned the use of lead at concentrations exceeding 0.2% lead in solder and 8% lead in other plumbing fittings. The EPA action level for lead in public drinking water is 0.015 parts per million (ppm) or 15 parts per billion (ppb).

Municipal water service is provided to the Site by New York City. Potable water is obtained from 19 reservoirs and three controlled lakes within portions of Hudson County and Catskill Mountains. Based upon review of the New York City 2018 Drinking Water Supply and Quality Report, the municipal water supply meets all current criteria established by the Safe Drinking Water

Act (SDWA) and local municipal drinking water standards, including those for lead. As such, no further assessment for lead was conducted.

7.5 Radon

According to the USEPA Radon Zone Map, the Site is located in Zone 3, which indicates a predicted average indoor radon screening level less than 2 pCi/L. According to the EDR Report, 51 radon tests have been conducted in Kings County with results indicating that 100 percent of living areas and 88 percent of basements have radon concentrations less than 4 pCi/L, which is the USEPA action level for mitigation. Based on the non-residential use scenario, it is Langan's opinion that radon impacts to the subject buildings are unlikely.

7.6 Mold

Potential mold conditions were not observed during the Site reconnaissance.

8.0 FINDINGS AND RECOMMENDATIONS

Langan's findings from the Phase I ESA are summarized below.

8.1 Known or Suspect RECs and BERs

Two RECs and two BERs were identified in association with the Site. The RECs and BERs include:

REC 1 – Current and Historical Site Use

Historical records indicate the Site has been utilized for a variety of industrial operations between 1907 and the present, including as a lumber yard (1907-1951), an auto garage (1928-1934), a metal working facility (1933), a paper box manufacturing facility (1951), and an envelope manufacturing facility (1992-present).

During the site reconnaissance, a septic holding tank was observed in the northeast corner of Lot 21. One gasoline underground storage tank (UST) has also historically been reported in the northeast corner of Lot 21 (1933), and is presumed removed as the location of the septic tank and former gasoline UST appear consistent with each other. Two fuel oil USTs to support former oil burning boilers were reported at the Site (1912-1990), but appear now removed.

REC 2 – Current and Historical Operations of Surrounding Properties

The area surrounding the Site has been used for industrial purposes since at least 1888 through the present. Activities include rail freight yards, plastics manufacturing, pharmaceutical manufacturing, a coal yard, auto repair shops, metal working, a dry cleaners/laundry and miscellaneous manufacturing.

One off-site and adjoining (upgradient) property, Ingraham Street Sidewalk GW (New York State Hazardous Waste Site [SHWS] ID No. 224142) is listed in the New York State VCP database. Chlorinated VOCs are constituents of concern in groundwater and soil vapor.

BER 1 – Presumed Historic Fill

Based on the findings of previous subsurface investigations in the surrounding areas completed by Langan, it is likely that historic fill is present on the Subject Property. Management and disposal of historic fill material will require special considerations during potential future development of the Subject Property.

BER 2 – Asbestos Containing Material (ACM) and Lead Based Paint (LBP)

A limited survey of building materials identified the presence of ACM materials on the Site, including insulation, mastic, flooring materials, caulk, and roofing materials. No LBP was identified. A full survey of building materials would be required as part of building renovations or demolition relating to future redevelopment of the Site.

8.2 Other Items

The staining noted on the concrete slab surrounding large machinery and around one floor drain is considered de minimis, given that they were atop concrete in average condition with no large cracks, breaches or other pathways to the subsurface.

8.3 Conclusion

Langan conducted this Phase I ESA with a standard of commercial and customary practice using the local standard of case that is consistent with ASTM E1527-13.

REFERENCES

The sources below were referenced during the performance of this Phase I ESA:

Guidance Documents

ASTM E 1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process;

40 CFR Part 312, Standards and Practices for All Appropriate Inquiry, Federal Register, Volume 70, Number 210 dated 1 November 2005;

Databases / Online Information

FEMA, Flood Map Service Center map and online database, https://msc.fema.gov/portal/ Accessed June 21, 2019

NYSDEC Environmental Resource Mapper, http://www.dec.ny.gov/gis/erm/, Accessed June 24, 2019.

Reports / Work Products

Environmental Data Resources, Inc (EDR). – Environmental Database Search Report: Inquiry Number: 5684962
450 Johnson Avenue, Brooklyn, NY 11237

The EDR – Radius Map™ Report with GeoCheck® dated June 17, 2019;
The EDR – Aerial Photo Decade Package dated June 17, 2019;
The EDR – Historical Topographical Map Report dated June 17, 2019;
The EDR – Certified Sanborn® Map Report dated June 19, 2019; and
The EDR – City Directory Abstract dated June 18, 2019.
The EDR – Environmental Lien and AUL Search dated June 19, 2019

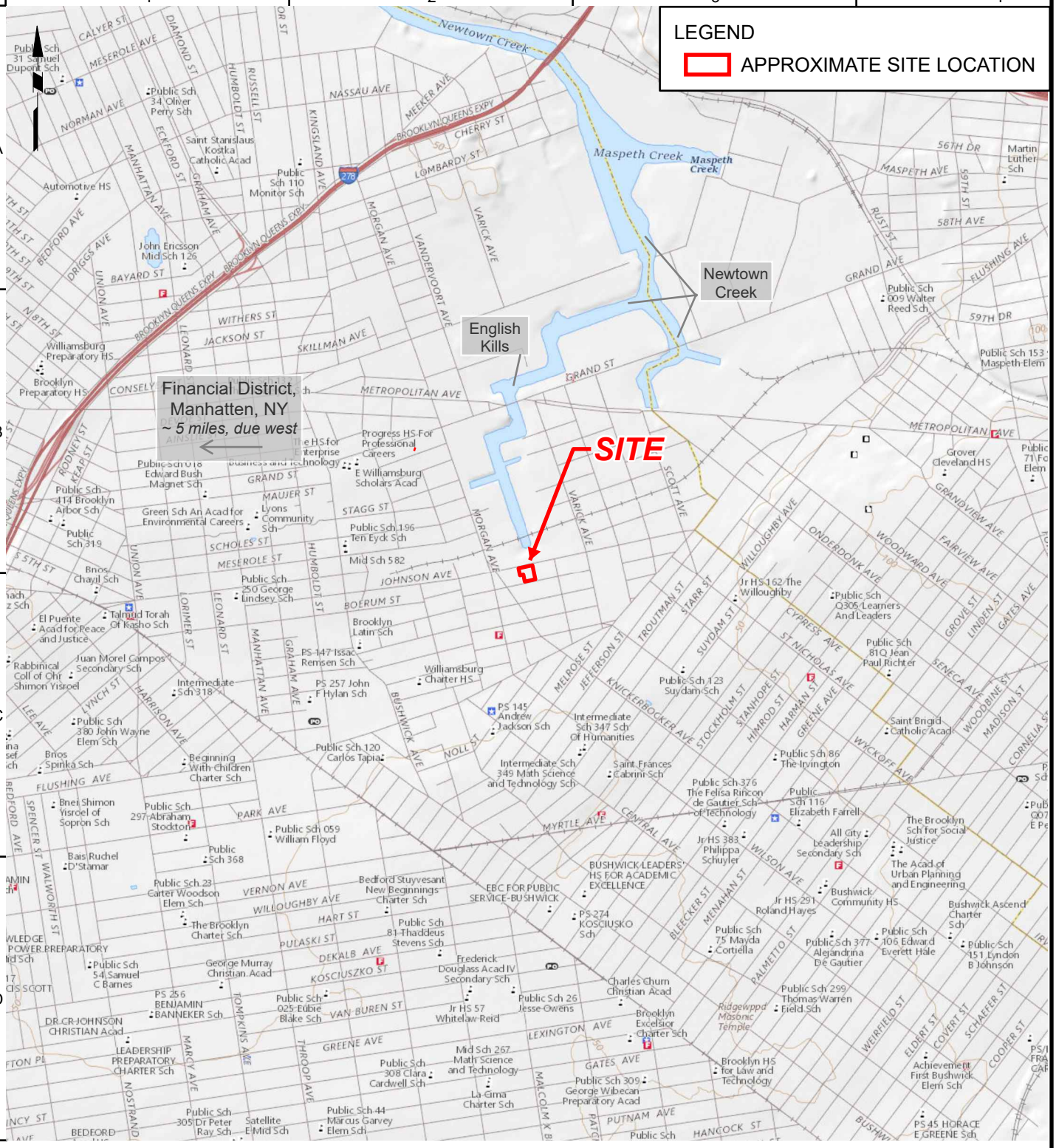
HydroTech Environmental Engineering and Geology DPC (Hydrotech), 2019. Phase I Environmental Site Assessment Report, 440-450 Johnson Avenue & 79 Ingraham Street, Brooklyn, New York 11237, prepared for Mr. Robert Harper, May.

Weston Solutions, Inc. (Weston), 2009, Expanded Site Inspection Report, Newtown Creek, Brooklyn/Queens, New York; Volume 1 of 4, prepared for the United States Environmental Protection Agency, July.

Shaw Infrastructure & Environmental Engineering of NY, P.C. (Shaw), 2013. Site Work Plan, prepared for the NYSDEC, October 21.

Shaw, 2015, Final Site Characterization Report, Rev. 2, prepared for the NYSDEC, February.

APPENDIX A
FIGURES



NOTES:
1. BASEMAP ADAPTED FROM UNITED STATES GEOLOGICAL SURVEY (USGS) 7.5-MINUTE SERIES TOPOGRAPHICAL MAPS, BROOKLYN, NEW YORK, QUADRANGLE, DATED 2016.

2,000 0 2,000
SCALE IN FEET

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Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
Langan International LLC

Collectively known as Langan

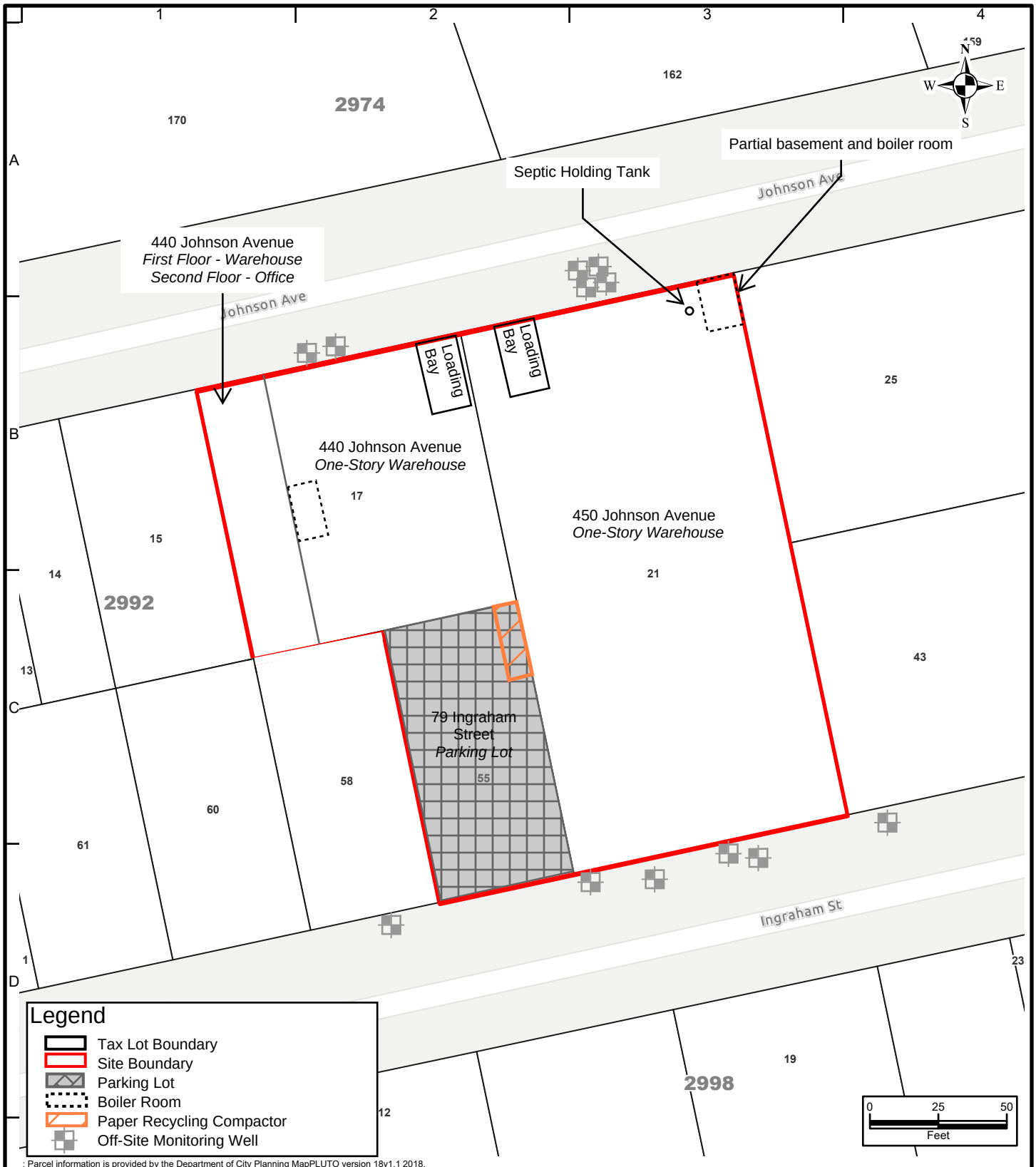
Project
450 JOHNSON AVENUE
BLOCK No. 2992, LOT No. 17, 21, 55
BROOKLYN
KINGS COUNTY NEW YORK

Figure Title
SITE LOCATION MAP

Project No. 170588001	Figure No. 1
Date 6/21/2019	
Scale 1"=2,000'	
Drawn By AB	
Submission Date 6/21/2019	

© 2019 Langan

Path: \\langan.com\data\NYC\data0\170588001\Project Data\ArcGIS\APRX\170588001.aprx Date: 6/21/2019 User: abakhtin Time: 6:00 PM



; Parcel information is provided by the Department of City Planning MapPLUTO version 18v1.1 2018.

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Project
450 Johnson Avenue
BROOKLYN
KINGS COUNTY NEW YORK

SITE PLAN

Spatial

Project No. 170588001	Figure 2
Date 8/2/2019	
Scale 1:50	
Drawn By Site Analyzer	
Submission Date 08/02/2019	Sheet 2 of 3

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REC 1 – Current and Historical Site Usage
-Lumber yard (1907-1951)
-Auto garage (1928-1934) with associated UST (1933)
-Metal working (1933)
-Paper box manufacturing (1951)
-Envelope manufacturing (1992-Present)
-Two fuel oil boilers (1912-1990)

REC 2 - Current and Historical Operations of Surrounding Properties
-Coal Yard (1907-1933)
-Plastic product manufacturing (1965-1968)
-Pharmaceutical manufacturing (1977-1987)

Sump pits

Floor drains/pits

blocked fill port/vent pipe

Boiler room - indications of a UST

Potential combined sewer overflow line
(location is approximate and estimated per map included in Appendix E, Attachment E9)

REC 2 - Current and Historical Operations of Surrounding Properties
-Clothing and shoe manufacturing (1928-2014)
-Paint spraying facility (1933-2007)

REC 2 - Current and Historical Operations of Surrounding Properties
-Auto repair (1968)

REC 2 - Current and Historical Operations of Surrounding Properties
-Lumber Yard (1907)
-Drum and barrel cleaning and storage (1951)

REC 2 - Current and Historical Operations of Surrounding Properties
-Casket manufacturing (1933-1991)

REC 2 - Current and Historical Operations of Surrounding Properties
-Auto Repair (1979-1989)

REC 2 - Current and Historical Operations of Surrounding Properties
-Ingraham Street Sidewalk GW (SHWS ID no. 224142)

REC 2 - Current and Historical Operations of Surrounding Properties
-Metal Works (1951-2007)

REC 2 - Current and Historical Operations of Surrounding Properties
-Dry cleaning (1951)
-Laundry (1968-2007)
- 88 Ingraham Realty Corp/Popular Uniform (NYSDEC VCP ID No. V00170)

Newtown Creek

Johnson Ave

Ingraham St

Harrison Pl

Grattan St

Knickerbocker Ave

MTA-
Morgan Ave

Gilbert

office

REC Boundaries
Estimated REC Boundaries
UST Location
Floor drains / sumps

Legend
Site Boundary

0 75 150
Feet

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Langan International LLC
Collectively known as Langan

Project
450 Johnson Avenue
BROOKLYN
KINGS COUNTY NEW YORK

Drawing Title
Environmental Items and Recognized Conditions Map

Project No. 170588001	Figure 3
Date 6/26/2019	
Scale 1:150	
Drawn By Site Analyzer	
Submission Date 06/26/2019	Sheet 3 of 3

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Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community; Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community

APPENDIX B
SITE VISIT PHOTOGRAPHS

Photographs from 10-July-2019 Site Visit
Phase I Environmental Site Assessment
450 Johnson Avenue, Brooklyn, NY

Photo Log Organization

Photos 01 - 02	Overall Site
Photos 03 - 28	450 Johnson (Lots 17, 21 and 55)
Photos 29 - 33	Adjacent Parcels

Overall Site

Photograph 1. View of the Site from Johnson Avenue (facing southeast).

Photograph 2. View of the Site from Ingraham Street (facing northwest).

Lot 11 (498 Johnson Avenue)

Photograph 3. View of warehouse interior from loading bay on Lot 21 (facing south-southwest).

Photograph 4. Storage area on ground floor of the two-story building on Lot17 (facing north).

Photograph 5. Typical staining on concrete surrounding machinery on Lot 21 (facing southeast).

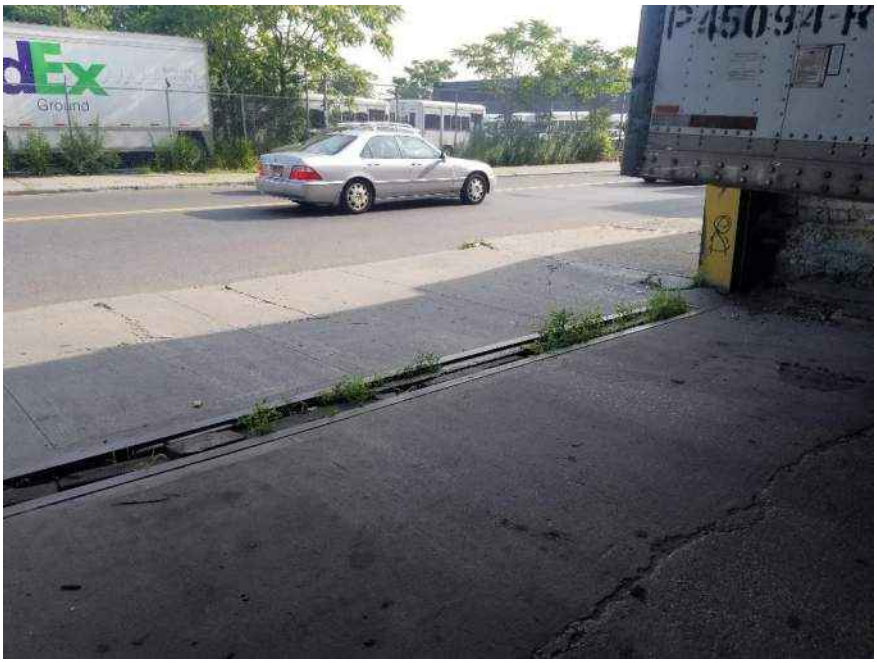
Photograph 6. Ink and adhesive staining near a floor drain on Lot 21 (facing south).

Photograph 7. Example chemical storage near loading bay on Lot 17 (facing east).

Photograph 8. Example chemical storage in central part of Lot 21 (facing north).

Photograph 9. Dry type transformer located on the eastern part of Lot 21 (facing north).

Photograph 10. View of staining beneath an air compressor on Lot 18-7 (facing northeast).



Photograph 11. View of trench drain along loading bay on Lot 17, facing Johnson Avenue (facing northeast).

Photograph 12. View of drainage pit with sewer cleanout on Lot 17.

Photograph 13. Interior of boiler room in central part of Lot 17 (facing south).

Photograph 14. View of sidewalk access hatch to partial cellar boiler room on northeast part of Lot 21 (facing east).

Photograph 15. View of boiler room in the partial cellar on Lot 21 (facing south).

Photograph 16. Sump pit and pump in the southwestern corner of the partial basement boiler room on Lot 21 (facing south).

Photograph 17. Vault access located in the northeast part of Lot 21 (facing north).

Photograph 18. Septic holding tank access hatch within vault located on the northeast part of Lot 21.

Photograph 19. Termination of feed and return lines formerly connected to a previous fuel oil powered boiler in the boiler room located on Lot 17

Photograph 20. Presumed UST removal patch in concrete adjoining terminated feed and return lines from the boiler room on Lot 17 (facing northeast).

Photograph 21. Hydraulically powered scissor lift table with hydraulic reservoir in Lot 21.

Photograph 22. General roof view, terra cotta shingles demarcating the boundary between Lots 17 and 22 (facing south-southeast).

Photograph 23. View of Lot 17 boiler exhaust and exhaust fans on roof (facing west-southwest).

Photograph 24. General view off office area on the second floor on Lot 17 (facing south).

Photograph 26. General view of Lot 55 (facing north).

Photograph 27. View of monitoring wells in the sidewalk immediately north of the Subject Property along Johnson Avenue (facing east).

Photograph 28. View of monitoring wells in the sidewalk immediately south of the Subject Property along Ingraham Street (facing east).

Adjacent Parcels

Photograph 29. View of northern adjoining property (Block 2974, Lot 162) across Johnson Avenue (facing north).

Photograph 30. View of northeastern adjoining property (Block 2992, Lot 25) separated by rollup gate on bottom left (facing southeast).

Photograph 31. View of southern adjoining property (Block 2998, Lot 19) across Ingraham Street (former Popular Hand Laundry, facing southeast).

Photograph 32. View of southeastern adjoining property (Block 2992, Lot 43) along Ingraham Street (facing west).

Photograph 33. View of southeastern adjoining property (Block 2992, Lot 58) along Ingraham Street (facing west).

APPENDIX C
EDR DATABASE REPORT

450 Johnson Avenue
450 Johnson Avenue
Brooklyn, NY 11237

Inquiry Number: 5684962.2s
June 17, 2019

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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SECTION	PAGE
Executive Summary	ES1
Overview Map	2
Detail Map	3
Map Findings Summary	4
Map Findings	8
Orphan Summary	1041
Government Records Searched/Data Currency Tracking	GR-1

GEOCHECK ADDENDUM

Physical Setting Source Addendum	A-1
Physical Setting Source Summary	A-2
Physical Setting Source Map	A-8
Physical Setting Source Map Findings	A-9
Physical Setting Source Records Searched	PSGR-1

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

450 JOHNSON AVENUE
BROOKLYN, NY 11237

COORDINATES

Latitude (North):	40.7077110 - 40° 42' 27.75''
Longitude (West):	73.9302740 - 73° 55' 48.98''
Universal Tranverse Mercator:	Zone 18
UTM X (Meters):	590365.1
UTM Y (Meters):	4506650.0
Elevation:	19 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5940597 BROOKLYN, NY
Version Date:	2013

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20150522
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
450 JOHNSON AVENUE
BROOKLYN, NY 11237

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	ENVELOPE MANUFACTURI	450 JOHNSON AVE	RCRA-CESQG, FINDS, ECHO, NY MANIFEST		TP
A2	ENVELOPE MANUFACTURI	450 JOHNSON AVE	US AIRS		TP
A3	LW SLEEPWELL INC-456	456-474 JOHNSON AVEN	FINDS	Lower	1 ft.
A4	POPULAR UNIFORM	88 INGRAHAM STREET #	NY DRYCLEANERS	Higher	72, 0.014, SSE
A5	88 INGRAHAM REALTY C	88 INGRAHAM ST	PA MANIFEST	Higher	72, 0.014, SSE
A6	88 INGRAHAM REALTY C	88 INGRAHAM ST	RCRA-SQG, NY ENG CONTROLS, NY INST CONTROL, NY...	Higher	72, 0.014, SSE
A7	POPULAR HAND	88 INGRAHAM ST	EDR Hist Cleaner	Higher	72, 0.014, SSE
A8	POPULAR UNIFORM	88 INGRAHAM STREET	NY UST	Higher	72, 0.014, SSE
A9	AMERICAN MEDICAL RES	78 INGRAHAM STREET	NJ MANIFEST	Higher	78, 0.015, SSW
A10	AMERICAN MEDICAL RES	78 INGRAHAM ST	RCRA-SQG, FINDS, ECHO, NY MANIFEST	Higher	78, 0.015, SSW
A11	TWENTIETH CENTURY CO	474 JOHNSON AVE	RCRA NonGen / NLR, FINDS, ECHO, NY MANIFEST	Lower	100, 0.019, NE
B12	CON EDISON	428 JOHNSON AV	NY MANIFEST	Higher	110, 0.021, West
C13	VANGUARD ENVIRONMENT	465 JOHNSON AVE	RCRA NonGen / NLR	Lower	151, 0.029, NNE
B14	BASIC ADHESIVES INC	25 KNICKERBOCKER AVE	NY CBS, RCRA NonGen / NLR, ICIS, FINDS, ECHO, NY...	Higher	158, 0.030, WSW
B15	BASIC ADHESIVES INC	25 KNICKERBOCKER AVE	NY CBS UST	Higher	158, 0.030, WSW
A16	480 JOHNSON LLC	480 JOHNSON AVENUE	NY AST	Lower	158, 0.030, ENE
B17	ALL PRO REMOVALS LLC	407 JOHNSON AVE	RCRA-LQG	Lower	160, 0.030, West
D18	27 KNICKERBOCKER REA	27 KNICKERBOCKER AVE	NY UST	Higher	189, 0.036, SW
A19	J & R AFFILIATES	109 INGRAHAM STREET	NY AST	Higher	193, 0.037, East
C20	CON EDISON	486 JOHNSON AVE	NY MANIFEST	Lower	216, 0.041, ENE
D21	SPILL NUMBER 0406955	KNICKERBOCKER/INGRAM	NY Spills	Higher	224, 0.042, SSW
B22	NATIONWIDE CHEMICAL	395 JOHNSON AVENUE	NY CBS, NY CBS AST	Lower	229, 0.043, West
B23	ROBINWOOD MFG CO	1 KNICKERBOCKER AVE	RCRA NonGen / NLR	Lower	234, 0.044, West
B24	IFO AUTO RADIATOR	3 KNICKERBOCKER AVE	NY Spills	Higher	236, 0.045, West
B25	NYSDEC #224142 - ING	KNICKERBOCKER AVE &	RCRA-SQG, NY MANIFEST	Higher	252, 0.048, WSW
E26	HYMEL PORTER REALTY	88 PORTER AVENUE	NY UST	Lower	304, 0.058, East
E27	UNOCCUPIED WAREHOUSE	88 PORTER AVENUE	NY LTANKS	Lower	304, 0.058, East
E28	CORNELL BEVERAGES IN	105 HARRISON PLACE	NY LTANKS, NY UST	Higher	307, 0.058, SE
D29	RAPID READY MIX SUPP	46 KNICKERBOCKER AVE	NY AST	Higher	320, 0.061, SW
C30	VERIZON MANHOLE 262	JOHNSON & PORTER AVE	RCRA NonGen / NLR	Lower	324, 0.061, ENE
C31	CON EDISON	JOHNSON AVE & PORTER	NY MANIFEST	Lower	324, 0.061, ENE
C32	CON EDISON	JOHNSON & PORTER AV	NY MANIFEST	Lower	324, 0.061, ENE
E33	INGRAHM STREET	INGRAHM STREET/PORTE	NY Spills	Lower	325, 0.062, East
D34	U. S. WASTE MANAGEME	48 KNICKERBOCKER (69	NY SWF/LF	Higher	326, 0.062, SW
B35	KNICKERBOCKER & JOHN	KNICKERBOCKER AVE #6	NY Spills	Lower	328, 0.062, West
E36	CORNISH MINI MILLS	121 INGRAHAM ST	NY LTANKS	Lower	338, 0.064, East
E37	CORNISH KNIT GOODS	PORTER AVE	RCRA-CESQG, NY UST, FINDS, ECHO, NY MANIFEST	Lower	338, 0.064, East
E38	CORNISH KNIT GOODS/C	121 INGRAHAM ST./89	NY ENG CONTROLS, NY INST CONTROL, NY VCP	Lower	338, 0.064, East
F39	CON EDISON SERVICE B	104 HARRISON PL	RCRA NonGen / NLR, NY MANIFEST	Higher	380, 0.072, SE

MAPPED SITES SUMMARY

Target Property Address:
450 JOHNSON AVENUE
BROOKLYN, NY 11237

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
F40	CON EDISON	104 HARRISON PL	NY MANIFEST	Higher	380, 0.072, SE
E41	PORTER AVENUE TRANSI	89-111 PORTER AVENUE	NY UST	Lower	389, 0.074, ENE
E42	PETER JAY SHARP CENT	89 W PORTER AVENUE	PA MANIFEST	Lower	389, 0.074, ENE
E43	CENTER FOR OPPORTUNI	89 PORTER AVE	NY Spills	Lower	389, 0.074, ENE
G44	SPILL NUMBER 0303242	MORGAN AV/JOHNSON AV	NY Spills	Lower	391, 0.074, West
G45	0282-BOX	MORGAN /JOHNSON AVE	NY Spills	Lower	391, 0.074, West
G46	VAULT 7037	MORGAN AVE& JOHNSON	NY Spills	Lower	391, 0.074, West
G47	VAULT 3640	MORGAN AVE & JOHNSON	NY Spills	Lower	391, 0.074, West
G48	CON EDISON - VS 7037	E/S MORGAN JAVE. 114	RCRA NonGen / NLR, NY MANIFEST	Lower	400, 0.076, West
D49	HARRISON KNIKERBOCKE	54 KNICKERBOCKER AVE	NY AST	Higher	401, 0.076, SSW
E50	ADVERTISING CRAFTSMA	65 PORTER AVE	NY AST	Higher	414, 0.078, ESE
E51	VOILA BAKERY	65 PORTER AVENUE	NY UST	Higher	414, 0.078, ESE
H52	MILHAN REALTY CORP	40 INGRAHAM ST	RCRA NonGen / NLR, FINDS, ECHO, NY MANIFEST	Higher	429, 0.081, WSW
H53	40 INGRAHAM ST	40 INGRAHAM STREET	NY AST	Higher	429, 0.081, WSW
D54	CON EDISON	54 HARRISON PL	NY MANIFEST	Higher	430, 0.081, SSW
D55	CON EDISON	54 HARRISON PL	NJ MANIFEST	Higher	430, 0.081, SSW
D56	CON EDISON	54 HARRISON PL	RCRA NonGen / NLR, FINDS, ECHO	Higher	430, 0.081, SSW
D57	B.B. BODY AND AUTO R	52 HARRISON PLACE	NY AST	Higher	446, 0.084, SSW
G58	CON EDISON SERVICE B	99 MORGAN AVE	RCRA NonGen / NLR, NY MANIFEST	Higher	461, 0.087, WSW
G59	CON EDISON	99 MORGAN AVE	NY MANIFEST	Higher	461, 0.087, WSW
F60	CON ED	89 GRATTAN ST	NY MANIFEST	Higher	465, 0.088, SSE
F61	CON EDISON	89 GRATTAN ST	RCRA NonGen / NLR	Higher	465, 0.088, SSE
F62	CON EDISON	89 GRATTAN ST	NJ MANIFEST	Higher	465, 0.088, SSE
I63	IDEAL SERVICENTER	66 KNICKERBOCKER AV	EDR Hist Auto	Higher	477, 0.090, SSW
I64	66-78 KNICKERBOCKER	66-78 KNICKERBOCKER	NY UST	Higher	477, 0.090, SSW
F65	CON EDISON SERVICE B	103 GRATTAN ST	RCRA NonGen / NLR	Higher	491, 0.093, SSE
F66	CON EDISON	103 GRATTAN ST	NY MANIFEST	Higher	491, 0.093, SSE
J67	100 MORGAN AVENUE	100 MORGAN AVE	NY LTANKS	Lower	498, 0.094, WNW
J68	ENVELOPE CONVERTORS	100 MORGAN AVE	RCRA NonGen / NLR, FINDS, ECHO, NY MANIFEST	Lower	498, 0.094, WNW
J69	FED EX	100 MORGAN AVE	NY Spills	Lower	498, 0.094, WNW
J70	STEEL LOS	100 MORGAN AVENUE	NY UST, NY AST	Lower	498, 0.094, WNW
H71	MTA NYCT - MORGAN AV	HARRISON PLACE & MOR	NY MANIFEST	Higher	513, 0.097, SW
H72	MTA NYCT - MORGAN AV	HARRISON PLACE & MOR	RCRA-SQG	Higher	513, 0.097, SW
H73	MTA NYCT - MORGAN AV	HARRISON PLACE & MOR	NJ MANIFEST	Higher	513, 0.097, SW
K74	WASTE MANAGEMENT OF	101 VARICK AVE	NY SWRCY, NY Spills, NY SPDES	Lower	520, 0.098, NE
K75	101 VARICK, WASTE MA	101 VARICK AVENUE	NY UST	Lower	520, 0.098, NE
L76	JOYVA VACANT LOT	498 JOHNSON AVENUE	NY VCP	Lower	543, 0.103, ENE
G77	KORNBLUM, SIDNEY	394 JOHNSON AVE.	SEMS-ARCHIVE, LEAD SMELTERS	Higher	556, 0.105, West
H78	CON EDISON	23 INGRAHAM ST	NY MANIFEST	Higher	583, 0.110, WSW

MAPPED SITES SUMMARY

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MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
H79	CON EDISON SERVICE B	23 INGRAHAM ST	RCRA NonGen / NLR	Higher	583, 0.110, WSW
G80	388 JOHNSON AVE.	388 JOHNSON AVE	NY Spills	Lower	593, 0.112, West
I81	CON EDISON SERVICE B	60 GRATTAN ST	RCRA NonGen / NLR	Higher	602, 0.114, South
I82	CON EDISON	60 GRATTAN ST	NY MANIFEST	Higher	602, 0.114, South
M83	132 HARRISON PLACE	132 HARRISON PLACE	NY UST, NY AST	Higher	613, 0.116, ESE
J84	MOOTCH & MUCK DIST.	134 MORGAN AVE	NY Spills	Lower	628, 0.119, NW
J85	140 MORGAN AVE. WHSE	140 MORGAN AVENUE	NY UST	Lower	661, 0.125, NW
J86	140 MORGAN AVE/BROOK	140 MORGAN AVENUE	NY LTANKS, NY Spills	Lower	661, 0.125, NW
N87	CON EDISON SERVICE B	36 PORTER AVE	RCRA NonGen / NLR	Higher	663, 0.126, SE
N88	CON EDISON	36 PORTER AV	NY MANIFEST	Higher	663, 0.126, SE
O89	SUPERIOR HOLDING LLC	375 JOHNSON AVE	NY UST	Lower	686, 0.130, West
O90	SUPERIOR HOLDING LLC	375 JOHNSON AVE	NY AST	Lower	686, 0.130, West
J91	MORGAN TERMINAL	200 MORGAN AVE	NY HSWDS	Lower	687, 0.130, WNW
P92	FORMER JAYER PLATING	2 INGRAHAM STREET	NY HSWDS	Higher	722, 0.137, WSW
P93	2 INGRAHAM STREET -	2 INGRAHAM ST	NY SHWS, NY VCP, NY BROWNFIELDS	Higher	722, 0.137, WSW
N94	CON EDISON SERVICE B	95 THAMES ST	RCRA NonGen / NLR, FINDS	Higher	728, 0.138, SSE
N95	CON EDISION	95 THAMES ST	NY MANIFEST	Higher	728, 0.138, SSE
O96	ACME CAKE CO INC	374 JOHNSON AVE	NY UST	Lower	730, 0.138, West
M97	DERBY TEXTILE CORPOR	41 VARICK AVENUE	NY LTANKS, NY UST	Lower	743, 0.141, East
N98	CON EDISON	97 THAMES ST	NY MANIFEST	Higher	747, 0.141, SSE
N99	CON EDISON SERVICE B	97 THAMES ST	RCRA NonGen / NLR	Higher	747, 0.141, SSE
N100	BROWNING FERRIS INDU	105-115 THAMES ST	RCRA NonGen / NLR, FINDS, ECHO	Higher	753, 0.143, SSE
N101	CON EDISON MANHOLE:	105 THAMES ST	RCRA NonGen / NLR	Higher	753, 0.143, SSE
N102	CON EDISON	105 THAMES ST	NY MANIFEST	Higher	753, 0.143, SSE
N103	CON EDISON	105 THAMES ST	NY MANIFEST	Higher	753, 0.143, SSE
N104	CON EDISON SERVICE B	105 THAMES ST	RCRA NonGen / NLR	Higher	753, 0.143, SSE
N105	CITYGREEN ORGANICS	105-115 THAMES STREE	NY SWF/LF, NY Financial Assurance	Higher	753, 0.143, SSE
Q106	CON EDISON	47 THAMES ST	NY MANIFEST	Higher	760, 0.144, South
Q107	47 THAMES STREET	47 THAMES ST	NY UST	Higher	760, 0.144, South
Q108	CON EDISON SERVICE B	47 THAMES ST	RCRA NonGen / NLR	Higher	760, 0.144, South
R109	NYNEX	MESSEROLE ST & MORGA	NY MANIFEST	Lower	760, 0.144, NW
L110	JOYVA CORP.	53 VARICK AVENUE	NY UST, NY Spills	Lower	765, 0.145, East
L111	JOYVA CORPORATION	53 VARICK AVE	NY LTANKS	Lower	765, 0.145, East
M112	CON EDISON	33 VARICK AVE	NY MANIFEST	Higher	798, 0.151, ESE
M113	CON EDISON MANHOLE:	33 VARICK AVE	RCRA NonGen / NLR	Higher	798, 0.151, ESE
S114	CON EDISON SERVICE B	17 GRATTAN ST	RCRA NonGen / NLR, FINDS	Higher	803, 0.152, SW
S115	CON EDISON	17 GRATTAN ST	NY MANIFEST	Higher	803, 0.152, SW
Q116	CONSOLIDATED EDISON	VANDERVOORT PL & THA	NY MANIFEST	Higher	806, 0.153, South
Q117	CONSOLIDATED EDISON	VANDERVOORT PL & THA	NY MANIFEST	Higher	806, 0.153, South

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Q118	CON EDISON MANHOLE 5	THAMES ST & VANDERVO	RCRA NonGen / NLR	Higher	806, 0.153, South
Q119	ENGINE COMPANY 237	43 MORGAN AVENUE	NY AST	Higher	819, 0.155, SSW
M120	CON EDISON - TRANSFO	VARICK AVE & HARRISO	NY MANIFEST	Lower	829, 0.157, ESE
121	JFC INTERNATIONAL IN	40 VARICK AVENUE	NY UST	Lower	842, 0.159, East
R122	FOROX TECHNICAL CORP	154 MORGAN AVE	RCRA NonGen / NLR, FINDS, ECHO	Lower	850, 0.161, NW
R123	GREEN OFFICE SYSTEMS	154 MORGAN AVENUE	RCRA-SQG	Lower	850, 0.161, NW
N124	CON EDISON MANHOLE:	PORTER AVE & THAMES	RCRA NonGen / NLR, FINDS	Higher	851, 0.161, SE
N125	CON EDISON	125 THAMES ST	NJ MANIFEST	Higher	865, 0.164, SE
N126	CON EDISON	125 THAMES ST	RCRA NonGen / NLR, FINDS, ECHO	Higher	865, 0.164, SE
N127	CON EDISON SERVICE B	125 THAMES ST	RCRA NonGen / NLR, NY MANIFEST	Higher	865, 0.164, SE
S128	CON EDISON	18 GRATTAN ST	RCRA NonGen / NLR, FINDS, ECHO	Higher	874, 0.166, SW
S129	CON EDISON	18 GRATTAN ST	NJ MANIFEST	Higher	874, 0.166, SW
S130	CON EDISON	18 GRATTAN ST	NY MANIFEST	Higher	874, 0.166, SW
T131	CON EDISON	VARICK AVE	NY MANIFEST	Lower	887, 0.168, NE
T132	CON EDISON - MANHOLE	VARICK AVE	RCRA-LQG	Lower	887, 0.168, NE
T133	ENEQUIST CHEMICAL	100 VARICK AVENUE	NY AST	Lower	892, 0.169, NE
T134	EMEQUIFT CHEMICAL CO	100 VARICK AVE	NY LTANKS	Lower	892, 0.169, NE
T135	ENEQUIST CHEMICAL CO	100 VARICK AVE.	RCRA-LQG, NY CBS AST, FINDS, ECHO, PA MANIFEST, NJ...	Lower	892, 0.169, NE
T136	ENEQUIST CHEMICAL CO	100 VARICK AVENUE	NY CBS, NY Spills	Lower	892, 0.169, NE
Q137	CON EDISON SERVICE B	MORGAN AVE & THAMES	RCRA NonGen / NLR, FINDS	Higher	899, 0.170, SSW
Q138	CON EDISON	MORGAN AVE & THAMES	NY MANIFEST	Higher	899, 0.170, SSW
Q139	CON EDISON	52 THAMES ST	NY MANIFEST	Higher	914, 0.173, South
Q140	CON EDISON SERVICE B	52 THAMES ST	RCRA NonGen / NLR	Higher	914, 0.173, South
Q141	CON EDISON SERVICE B	52 THAMES ST	RCRA NonGen / NLR, FINDS	Higher	914, 0.173, South
Q142	CON EDISION	52 THAMES ST	NY MANIFEST	Higher	914, 0.173, South
R143	MORGAN SCHOLES PROPE	165 MORGAN AVENSUE	NY AST	Lower	916, 0.173, NW
P144	MILHAW REALTY CORPOR	2-40 INGRAHAM STREET	NY AST	Higher	928, 0.176, WSW
U145	CON EDISON	120 KNICKERBOCKER AV	NY MANIFEST	Higher	965, 0.183, SSE
U146	CON EDISON SERVICE B	120 KNICKERBOCKER AV	RCRA NonGen / NLR, FINDS	Higher	965, 0.183, SSE
U147	CON EDISON - MANHOLE	1087 FLUSHING AVE	NY MANIFEST	Higher	967, 0.183, SSE
U148	1087 FLUSHING AVE	1087 FLUSHING AVENUE	NY UST	Higher	967, 0.183, SSE
V149	AINSLEY LAMP MAN CO	1099 FLUSHING AVE	RCRA NonGen / NLR, NY MANIFEST	Higher	978, 0.185, SE
Q150	CON EDISON SERVICE B	26 MORGAN AVE	RCRA NonGen / NLR	Higher	978, 0.185, SSW
Q151	CON EDISON	26 MORGAN AVE	NY MANIFEST	Higher	978, 0.185, SSW
S152	56-72 BOGART ST	56-72 BOGART STREET	NY LTANKS, NY UST	Lower	981, 0.186, SW
W153	CON EDISON	141 THAMES ST	NY MANIFEST	Higher	985, 0.187, SE
154	SMR MESEROLE CORP.	350 MESEROLE STREET	NY AST	Lower	988, 0.187, WNW
S155	OCEAN CASKET CO INC	17 THAMES ST	RCRA NonGen / NLR, FINDS, ECHO	Higher	988, 0.187, SSW
S156	CONSOLIDATED EDISON	SEIGEL ST & BOGART S	NY MANIFEST	Lower	999, 0.189, SW

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V157	CON EDISON SERVICE B	1115 FLUSHING AVE	RCRA NonGen / NLR, FINDS	Higher	1000, 0.189, SE
V158	CON EDISON	1115 FLUSHING AVE	NY MANIFEST	Higher	1000, 0.189, SE
R159	RAVENWARE CO INC	360 SCHOLES ST	RCRA NonGen / NLR, FINDS, ECHO	Lower	1018, 0.193, NW
X160	WASTE MANAGEMENT OF	123 VARICK AVE	RCRA-SQG, US AIRS, PA MANIFEST, NJ MANIFEST, NY...	Lower	1033, 0.196, NNE
X161	COOPER RECYCLING COR	123 VARICK AVENUE	NY SWF/LF, NY Spills, NY Financial Assurance, NY...	Lower	1033, 0.196, NNE
X162	WASTE MANAGEMENT OF	123 VARICK AVENUE	NY AST	Lower	1033, 0.196, NNE
V163	NYNEX	FLUSHING AVE & POTTE	NY MANIFEST	Higher	1033, 0.196, SSE
X164	CON EDISON	VARICK ST & MESEROLE	NY MANIFEST	Lower	1038, 0.197, NNE
X165	CON EDISON	VARICK & MESEROLE ST	NY MANIFEST	Lower	1038, 0.197, NNE
X166	CON EDISON	VARICK ST & MESEROLE	NY MANIFEST	Lower	1038, 0.197, NNE
X167	CON EDISON	VARICK AND MESEROLE	NY MANIFEST	Lower	1038, 0.197, NNE
X168	CON EDISON	VARICK & MESEROLE ST	RCRA NonGen / NLR	Lower	1038, 0.197, NNE
X169	CON EDISON	VARICK & MESEROLE ST	NY MANIFEST	Lower	1038, 0.197, NNE
X170	CON EDISON	W SIDE VARICK ST	NJ MANIFEST	Lower	1038, 0.197, NNE
X171	CON EDISON	VARICK & MESEROLE ST	NJ MANIFEST	Lower	1038, 0.197, NNE
X172	CON EDISON	VARICK ST & MESEROLE	RCRA NonGen / NLR, FINDS, ECHO	Lower	1038, 0.197, NNE
X173	CON EDISON	VARICK AND MESEROLE	RCRA NonGen / NLR, FINDS, ECHO	Lower	1038, 0.197, NNE
U174	FLUSHING DRY CLEANER	1065 FLUSHING AVENUE	NY DRYCLEANERS	Higher	1039, 0.197, South
S175	SERVICE PRINTS LTD	1 GRATHAM ST	RCRA NonGen / NLR, FINDS, ECHO, NY MANIFEST	Lower	1040, 0.197, SW
Y176	180 MORGAN LLC	180 MORGAN AVENUE	NY AST	Lower	1044, 0.198, NW
W177	FL MINI MART, CORP	1127 FLUSHING AVENUE	NY UST	Higher	1050, 0.199, SE
U178	GEIS SERVICE STATION	1070 FLUSHING AVENUE	NY UST	Higher	1051, 0.199, SSE
Z179	BROCHO V'HATZLOCHO C	538 JOHNSON AVENUE	NY AST	Lower	1076, 0.204, ENE
Z180	THE PRINTHOUSE INC	538 JOHNSON AVE	RCRA-LQG, NJ MANIFEST, NY MANIFEST	Lower	1076, 0.204, ENE
Z181	ARCHITECTURAL COATIN	538 JOHNSON AVE - GR	RCRA-CESQG, NY MANIFEST	Lower	1076, 0.204, ENE
Z182	ARCHITECTURAL COATIN	538 JOHNSON AVENUE	PA MANIFEST	Lower	1076, 0.204, ENE
Z183	THE PURCHASE INC	538 JOHNSON AVE	PA MANIFEST	Lower	1076, 0.204, ENE
AA184	CON EDISON	338 JOHNSON AVE	NY MANIFEST	Lower	1085, 0.205, West
AA185	CON EDISON SERVICE B	338 JOHNSON AVE	RCRA NonGen / NLR, FINDS	Lower	1085, 0.205, West
AB186	CON EDISON	16 MORGAN AVE	NY MANIFEST	Higher	1090, 0.206, South
AB187	CON EDISON MANHOLE:	16 MORGAN AVE	RCRA NonGen / NLR	Higher	1090, 0.206, South
AC188	A M KNITWEAR CORP	315 SEIGEL ST	NY AST	Lower	1098, 0.208, SW
T189	WOOD-TEX PANELS INC	108 VARICK STREET	RCRA NonGen / NLR, FINDS, ECHO, NY MANIFEST	Lower	1111, 0.210, NE
V190	AMBATO AUTO SERVICES	1090 FLUSHING AVENUE	NY AST	Higher	1115, 0.211, SE
AD191	SCHOLES ST. STATION	SCHOLES ST 7 BOGART	EDR MGP	Lower	1120, 0.212, WNW
AB192	CON EDISON SERVICE B	12 MORGAN AVE	RCRA NonGen / NLR	Higher	1144, 0.217, South
AB193	CON EDISON	12 MORGAN AVE	NY MANIFEST	Higher	1144, 0.217, South
X194	HI-TECH RESOURCE REC	130 VARICK AVENUE	NY SWF/LF, NY Financial Assurance	Lower	1144, 0.217, NNE
X195	HI-TECH RESOURCE REC	130 VARICK AVE	RCRA NonGen / NLR	Lower	1144, 0.217, NNE

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AE196	CON EDISON	40 BOGART ST	NY MANIFEST	Higher	1144, 0.217, SW
AE197	CON EDISON SERVICE B	40 BOGART ST	RCRA NonGen / NLR	Higher	1144, 0.217, SW
Z198	DSNY BK DISTRICT 3 G	525 JOHNSON AVENUE	NY UST, NY Spills	Lower	1149, 0.218, ENE
Z199	NYC DEPT OF SANITATI	525 JOHNSON AVE BK-N	RCRA NonGen / NLR, ECHO	Lower	1149, 0.218, ENE
Y200	CON EDISON	179 MORGAN AVE	NY MANIFEST	Lower	1155, 0.219, NW
Y201	CON EDISON - SERVICE	179 MORGAN AVE	RCRA-LQG	Lower	1155, 0.219, NW
Y202	CON EDISON - SERVICE	179 MORGAN AVE	NJ MANIFEST	Lower	1155, 0.219, NW
Y203	RAINBOW POLYBAG-MORG	179 MORGAN AVE	RCRA-CESQG, US AIRS, FINDS, ECHO, NY MANIFEST	Lower	1155, 0.219, NW
AD204	APT COMPLEX	349 SCHOLES ST	NY LTANKS	Lower	1157, 0.219, NW
AD205	349 SCHOLES ST.	349 SCHOLES STREET	NY UST	Lower	1157, 0.219, NW
AC206	353 MCKIBBIN STREET	353 MCKIBBIN STREET	NY ENG CONTROLS, NY INST CONTROL, NY BROWNFIELDS	Lower	1170, 0.222, WSW
U207	CON EDISON	157 GEORGE ST OPP OF	NJ MANIFEST	Higher	1170, 0.222, SSE
U208	CON EDISON	157 GEORGE ST	NY MANIFEST	Higher	1170, 0.222, SSE
U209	CON EDISON	157 GEORGE ST OPP OF	RCRA NonGen / NLR	Higher	1170, 0.222, SSE
AA210	ADM REALTY CORP. LLC	318 BOERUM STREET	NY UST	Lower	1189, 0.225, WSW
AA211	UNITED TRANSIT MIX I	318 BOERUM ST	NY LTANKS, NY SPDES	Lower	1189, 0.225, WSW
AA212	UNITED TRANSIT MIX I	318 BOERUM STREET	NY AST	Lower	1189, 0.225, WSW
AA213	ALVIN J. BART & SONS	333 JOHNSON AVENUE	NY UST	Lower	1202, 0.228, West
AA214	BERLINER & MARX, INC	330 JOHNSON AVENUE	NY AST	Lower	1209, 0.229, West
Y215	NYC DEP HAZ MAT	200 MORGAN AVENUE	NY MOSF, NY LIENS, NY Spills, NY MANIFEST	Lower	1211, 0.229, NNW
Y216	MORGAN OIL TERMINALS	200 MORGAN AVE	NY MOSF UST, RCRA NonGen / NLR, FINDS, ECHO, NY...	Lower	1211, 0.229, NNW
AF217	HYGIENE INDUSTRIES D	1177 FLUSHING AVE	RCRA NonGen / NLR, FINDS, ECHO, NY MANIFEST	Higher	1215, 0.230, ESE
AA218	CON EDISON	317 BOERUM ST	NY MANIFEST	Lower	1215, 0.230, WSW
AA219	CON EDISON MANHOLE:	317 BOERUM ST	RCRA NonGen / NLR	Lower	1215, 0.230, WSW
W220	CON EDISON MANHOLE 5	IRVING AVE & MELROSE	RCRA NonGen / NLR, NY MANIFEST	Higher	1218, 0.231, ESE
AF221	UNIVERSAL USED AUTO	1175 FLUSHING AVE	NY SWF/LF, NY Spills	Higher	1228, 0.233, ESE
AF222	UNIVERSAL USED AUTO	1175 FLUSHING AVENUE	NY UST	Higher	1228, 0.233, ESE
X223	CON EDISON	SCHOLES & VARICK	RCRA NonGen / NLR, NY MANIFEST	Lower	1231, 0.233, NNE
Y224	CON EDISON - MANHOLE	STAGG ST & MORGAN AV	NJ MANIFEST	Lower	1234, 0.234, NW
Y225	CON EDISON - MANHOLE	STAGG ST & MORGAN AV	RCRA-LQG	Lower	1234, 0.234, NW
Y226	CON EDISON	MORGAN AVE & STAGG S	RCRA NonGen / NLR	Lower	1234, 0.234, NW
Y227	CON EDISON	MORGAN AVE & STAGG S	RCRA NonGen / NLR	Lower	1234, 0.234, NW
Y228	CON EDISON	MORGAN AVE & STAGG S	NY MANIFEST	Lower	1234, 0.234, NW
Y229	CON EDISON	MORGAN AVE & STAGG S	NJ MANIFEST	Lower	1234, 0.234, NW
Y230	CON EDISON	STAGG ST & MORGAN AV	NY MANIFEST	Lower	1234, 0.234, NW
AG231	BOARS HEAD PROVISION	151 KNICKERBOCKER AV	NY UST	Higher	1240, 0.235, SSE
AA232	TWIN MARQUIS, INC.	328 JOHNSON AVENUE	NY AST	Lower	1242, 0.235, West
AH233	CON EDISON	139 GEORGE ST	NY MANIFEST	Higher	1242, 0.235, SSE
AH234	CON EDISON SERVICE B	139 GEORGE ST	RCRA NonGen / NLR, FINDS	Higher	1242, 0.235, SSE

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AD235	CON EDISON - MANHOLE	333 SCHOLES ST	NY MANIFEST	Lower	1250, 0.237, WNW
AD236	CON EDISON - MANHOLE	333 SCHOLES ST	RCRA-LQG	Lower	1250, 0.237, WNW
AI237	106 STEWART AVE	106 STEWART AVE	NY UST	Lower	1272, 0.241, ENE
AG238	CON EDISION	156 GEORGE ST	NY MANIFEST	Higher	1273, 0.241, SSE
AG239	CON EDISON MANHOLE:	156 GEORGE ST	RCRA NonGen / NLR, FINDS	Higher	1273, 0.241, SSE
AE240	CON EDISON	28 BOGART ST	NJ MANIFEST	Higher	1286, 0.244, SSW
AE241	CON EDISON	28 BOGART ST	RCRA NonGen / NLR	Higher	1286, 0.244, SSW
AE242	CON EDISON	28 BOGART ST	NY MANIFEST	Higher	1286, 0.244, SSW
AB243	CON EDISON	1006 FLUSHING AVE	NY MANIFEST	Higher	1293, 0.245, South
AB244	CON EDISON SERVICE B	1006 FLUSHING AVE	RCRA NonGen / NLR, NY MANIFEST	Higher	1293, 0.245, South
AB245	CON EDISON	WILSON AVE & FLUSHIN	RCRA NonGen / NLR, FINDS, ECHO	Higher	1295, 0.245, South
AB246	CON EDISON	WILSON AVE & FLUSHIN	NJ MANIFEST	Higher	1295, 0.245, South
AB247	CON EDISON	WILSON AVE & FLUSHIN	NY MANIFEST	Higher	1295, 0.245, South
AB248	CON EDISON	FLUSHING AVE & MORGA	NY MANIFEST	Higher	1295, 0.245, South
AB249	NYNEX	FLUSHING & MORGAN AV	NY MANIFEST	Higher	1295, 0.245, South
AB250	CON EDISON MANHOLE:	FLUSHING AVE & MORGA	RCRA NonGen / NLR	Higher	1295, 0.245, South
251	SABIN METAL CORP	316 MESEROLE STREET	NY UST	Higher	1296, 0.245, WNW
AJ252	FRANK BRUNKHORST CO.	24 ROCK STREET	NY AST	Higher	1298, 0.246, SSW
AJ253	FRANK BRUNCKHORST CO	24 ROCK ST	RCRA NonGen / NLR, FINDS, ECHO, NY MANIFEST	Higher	1298, 0.246, SSW
AJ254	FRANK BRUNKHORST CO.	24 ROCK STREET	NY UST	Higher	1298, 0.246, SSW
AG255	CON EDISON	154 KNICKERBOCKER AV	NY MANIFEST	Higher	1298, 0.246, SSE
AG256	CON EDISON SERVICE B	154 KNICKERBOCKER AV	RCRA NonGen / NLR	Higher	1298, 0.246, SSE
AK257	UNIVERSAL SCRAP PROC	27 STEWART AVE	NY SWF/LF, NY Spills, NY SPDES	Lower	1309, 0.248, ESE
AK258	UNIVERSAL SCRAP PROC	27 STEWART AVENUE	NY AST	Lower	1309, 0.248, ESE
AL259	304 BOERUM ST. LLC	304 BOERUM ST	NY AST	Lower	1314, 0.249, WSW
AL260	304 BOERUM ST. LLC	304 BOERUM ST	NY UST	Lower	1314, 0.249, WSW
AM261	DSNY BK DISTRICT 1/4	161 VARICK AVENUE	NY UST	Lower	1316, 0.249, NNE
AM262	NYC DEPART OF SANITA	VARICK AVE	NY LTANKS, NY Spills, NY MANIFEST	Lower	1316, 0.249, NNE
AM263	NYC DEPT OF SANITATI	VARICK AVE	RCRA-CESQG	Lower	1316, 0.249, NNE
AA264	CON EDISON	328 JOHNSON AVE & WH	RCRA NonGen / NLR, NJ MANIFEST, NY MANIFEST	Lower	1317, 0.249, West
AF265	FORMER UNIVERSAL SCR	1181 FLUSHING AVENUE	NY BROWNFIELDS, NY Spills	Lower	1325, 0.251, ESE
AI266	NEO-RAY PRODUCTIONS	537 JOHNSON AVE	RCRA-CESQG, NY LTANKS, NY UST, ICIS, US AIRS,...	Lower	1328, 0.252, ENE
267	HI TECH HOLDINGS LLC	492 SCHOLES STREET	NY SWRCY	Lower	1338, 0.253, NNE
AM268	VARICK AVENUE	165 VARICK AVENUE	NY SHWS	Lower	1339, 0.254, NNE
AM269	VARICK AVENUE	165 VARICK AVENUE	NY HSWDS	Lower	1339, 0.254, NNE
270	10-85 IRVING AVE.	10-85 IRVING AVENUE	NY LTANKS	Higher	1396, 0.264, SE
271	DANGELO AUTO SALES &	582 JOHNSON AVE	NY SWF/LF	Lower	1456, 0.276, ENE
AN272	FRITO LAY	202-218 MORGAN AVENU	NY ENG CONTROLS, NY INST CONTROL, NY BROWNFIELDS	Lower	1481, 0.280, NW
AN273	FRITO-LAY	202-218 MORGAN AVE	NY SWF/LF, NY Spills, NY MANIFEST	Lower	1481, 0.280, NW

MAPPED SITES SUMMARY

Target Property Address:
450 JOHNSON AVENUE
BROOKLYN, NY 11237

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
AO274	147 NOLL STREET	147 NOLL ST	NY LTANKS	Higher	1503, 0.285, South
275	CAL OSTLUND INC	185 RANDOLPH STREET	NY LTANKS, RCRA NonGen / NLR, FINDS, ECHO, NY...	Lower	1549, 0.293, ENE
276	APT BUILDING TANK	85 MEADOW STREET	NY LTANKS	Lower	1571, 0.298, North
AO277	GALANTE; INC.	144 NOLL STREET	NY SWRCY	Higher	1620, 0.307, South
278	114 FORREST STREET	114 FORREST STREET	NY LTANKS	Higher	1641, 0.311, SSW
279	RAM AUTO WRECKERS	230 COOK STREET	NY SWF/LF	Higher	1687, 0.320, SSW
280	APARTMENT BUILDING	35 MEADOW STREET	NY LTANKS	Higher	1764, 0.334, NW
281	METRO NEW YORK SERVI	222 MORGAN AVE	NY SWF/LF, NY LTANKS, NY SPDES	Lower	1785, 0.338, NNW
AP282	COOPER TANK & WELDIN	215 MOORE STREET	NY LTANKS	Lower	1810, 0.343, SW
AP283	CRESCENT SMELTING WO	232 SEIGEL	SEMS-ARCHIVE, LEAD SMELTERS	Lower	1814, 0.344, WSW
284	WMNY VARICK 1 TRANSF	215 VARICK AVENUE	NY SWF/LF, NY Financial Assurance	Lower	1826, 0.346, North
285	CASALINO INTERIOR DE	213 MEADOW ST	NY SWF/LF, NY Spills	Lower	1882, 0.356, NNE
AQ286	MARC KATZMAN	255 MCKIBBON ST	NY LTANKS	Lower	1887, 0.357, WSW
287	AAA ALLOYS OF AMERIC	12 WYCKOFF AVE	SEMS-ARCHIVE, LEAD SMELTERS	Higher	1911, 0.362, ESE
288	CLOSED-LACKOF RECENT	268 JOHNSON AVENUE	NY LTANKS, NY Spills	Higher	1912, 0.362, West
289	345 TENEYCK STREET	345 TENEYCK STREET	NY LTANKS	Higher	1929, 0.365, NW
AP290	COOPER TANK RECYCLIN	201-203 MOORE STREET	NY SWF/LF	Lower	1975, 0.374, WSW
AR291	MESEROLE STREET RECY	568 MESEROLE STREET	NY SWRCY	Lower	1988, 0.377, NE
AQ292	ANCHOR METAL CO.	244 BOERUM STREET	SEMS-ARCHIVE, LEAD SMELTERS	Lower	2021, 0.383, WSW
AS293	BAYSIDE FUEL OIL DEP	1100 GRAND STREET	NY MOSF UST, NY MOSF AST	Lower	2098, 0.397, NNW
AS294	BAYSIDE FUEL OIL DEP	1100 GRAND STREET	NY MOSF, NY Spills, NY SPDES	Lower	2098, 0.397, NNW
295	DURITE S&V & MAINT.	250 MORGAN AVE	NY SWF/LF	Lower	2103, 0.398, NNW
AT296	COMMERCIAL PROPERTY	1-7 BUSHWICK PLACE	NY LTANKS, NY Spills	Higher	2111, 0.400, West
297	F & W WOODWORK CO	1267 FLUSHING AVE	NY LTANKS, NY Spills, RCRA NonGen / NLR, NY...	Lower	2112, 0.400, ENE
298	TECHNICAL METAL FINI	214 STARR STREET	SEMS-ARCHIVE, NY SHWS	Higher	2141, 0.405, ESE
AR299	ALLOCCO RECYCLING (6	606 MESEROLE STREET	NY SWRCY	Lower	2162, 0.409, NE
300	308 MAUJER ST	308 MAUJER ST	NY LTANKS	Higher	2182, 0.413, NW
AU301	NEW TOWN AUTO SALES	1074 GRAND STREET	NY SWF/LF, NY SPDES	Lower	2197, 0.416, NNW
AV302	BROWNING FERRIS	72 SCOTT AVE	NY SWF/LF, NY LTANKS, NY CBS, NY CBS AST, NY...	Lower	2229, 0.422, ENE
AW303	ALLOCCO RECYCLING LT	575 SCHOLES STREET	NY SWRCY, NY Spills	Lower	2232, 0.423, NE
AV304	ROLET FOOD PRODUCTS	70 SCOTT AVE	NY LTANKS	Lower	2237, 0.424, ENE
305	83 BUSHWICK PLACE	83 BUSHWICK PLACE	NY VCP	Higher	2256, 0.427, West
306	MIRAMARS DRY CLEANER	103 WILSON AVE	RCRA-SQG, NY LTANKS, ICIS, US AIRS, NY MANIFEST	Higher	2267, 0.429, SSE
307	BROOKLYN SCRAP METAL	171 COOK ST.	SEMS-ARCHIVE, LEAD SMELTERS	Higher	2296, 0.435, SW
AW308	BFI (598-636 SCHOLES	598-636 SCHOLES STRE	NY SWF/LF	Lower	2322, 0.440, NE
AW309	BFI (598-636 SCHOLES	598-636 SCHOLES STRE	NY SWRCY, NY Spills	Lower	2322, 0.440, NE
AT310	SPILL NUMBER 0003338	232 MESROLE ST	NY LTANKS	Higher	2366, 0.448, West
311	APARTMENT BLDG - TTF	49 WYCKOFF AVE	NY LTANKS	Higher	2372, 0.449, ESE
AV312	255 RANDOLPH STREET	255 RANDOLPH STREET	NY BROWNFIELDS	Lower	2372, 0.449, ENE

MAPPED SITES SUMMARY

Target Property Address:
450 JOHNSON AVENUE
BROOKLYN, NY 11237

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
AW313	GADS INC	594 SCHOLES STREET	NY SWF/LF	Lower	2380, 0.451, NE
AX314	902-908 FLUSHING AVE	902-908 FLUSHING AVE	NY VCP	Higher	2385, 0.452, SW
AY315	SUNSHINE BISCUITS IN	1251 METROPOLITAN AV	NY LTANKS, NY UST	Lower	2414, 0.457, NNE
AU316	CLOSED-LACKOF RECENT	1105 METROPOLITAN AV	NY LTANKS	Lower	2423, 0.459, NNW
317	EMPIRE WAREHOUSE	1312-1324 FLUSHING A	NY LTANKS	Higher	2481, 0.470, ENE
AY318	MANYA CORPORATION F.	235 GARDNER AVENUE	NY LTANKS, NY UST, NY CBS	Lower	2490, 0.472, NNE
319	1101 METROPOLITAN AV	1101 METROPOLITAN AV	NY LTANKS	Lower	2526, 0.478, NNW
320	CONSOLIDATED CARPET	1157 GRAND ST	NY LTANKS	Lower	2556, 0.484, North
AZ321	NEWTOWN CREEK	SOUTH END OF IVY HIL	NPL, SEMS, RCRA-SQG, PRP, NY MANIFEST	Lower	2568, 0.486, North
BA322	BORINQUEN HOUSES	300 BUSHWICK AVENUE	NY LTANKS, NY UST	Higher	2569, 0.487, WSW
AZ323	REPUBLIC MILL 1	DEARBORN STREET	SEMS-ARCHIVE	Lower	2601, 0.493, North
BA324	BORINQUEN HOUSES	330 BUSHWICK AVENUE	NY LTANKS, NY UST, NY Spills	Lower	2616, 0.495, WSW
AX325	11-23 MONTIETH STREE	11-23 MONTIETH STREE	NY VCP	Higher	2621, 0.496, SW
326	WASTE MANAGEMENT OF	1301 METROPOLITAN AV	NY SWF/LF	Lower	2627, 0.498, NNE
327	TOP HAT CLEANERS	152 GRAHAM AVE	RCRA-CESQG, NY SHWS, ICIS, US AIRS, NY MANIFEST	Higher	3344, 0.633, West
328	EQUITY WORKS	MASPETH AND VANDERVO	EDR MGP	Lower	3386, 0.641, NNW
329	BCF OIL REFINING, IN	360 MASPETH AVENUE	SEMS, NY SHWS, RCRA NonGen / NLR, PRP, ECHO, NY...	Lower	3758, 0.712, North
BB330	KEYSPAN - LNG PLANT	287 MASPETH AVENUE	NY SHWS, NY SWF/LF, NY LTANKS, NY MOSF, NY TANKS,...	Lower	4551, 0.862, North
BB331	GREENPOINT	287 MASPETH AVENUE	EDR MGP	Lower	4551, 0.862, North
332	FORMER KLINK COSMO C	364 RICHARDSON STREE	NY SHWS	Higher	4809, 0.911, NNW
333	GOODMAN BROTHERS STE	18 DIVISION PLACE	RCRA-CESQG, NY SHWS, NY UST, NY CBS, NY CBS AST,...	Higher	5113, 0.968, NNW

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 8 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
ENVELOPE MANUFACTURI 450 JOHNSON AVE BROOKLYN, NY 11237	RCRA-CESQG EPA ID:: NYD987006996 FINDS Registry ID:: 110004491853 ECHO Registry ID: 110004491853 NY MANIFEST EPA ID: NYD987006996	NYD987006996
ENVELOPE MANUFACTURI 450 JOHNSON AVE BROOKLYN, NY 11237	US AIRS Database: US AIRS MINOR, Date of Government Version: 10/12/2016	N/A

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing

Federal RCRA CORRACTS facilities list

CORRACTS ---------- Corrective Action Report

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF ---------- RCRA - Treatment, Storage and Disposal

Federal institutional controls / engineering controls registries

LUCIS ---- Land Use Control Information System
US ENG CONTROLS ---- Engineering Controls Sites List
US INST CONTROL ---- Sites with Institutional Controls

Federal ERNS list

ERNS ---- Emergency Response Notification System

State and tribal leaking storage tank lists

INDIAN LUST ---- Leaking Underground Storage Tanks on Indian Land
NY HIST LTANKS ---- Listing of Leaking Storage Tanks

State and tribal registered storage tank lists

FEMA UST ---- Underground Storage Tank Listing
INDIAN UST ---- Underground Storage Tanks on Indian Land

State and tribal institutional control / engineering control registries

NY RES DECL ---- Restrictive Declarations Listing

State and tribal voluntary cleanup sites

INDIAN VCP ---- Voluntary Cleanup Priority Listing

State and tribal Brownfields sites

NY ERP ---- Environmental Restoration Program Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

NY SWTIRE ---- Registered Waste Tire Storage & Facility List
INDIAN ODI ---- Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9 ---- Torres Martinez Reservation Illegal Dump Site Locations
ODI ---- Open Dump Inventory
IHS OPEN DUMPS ---- Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ---- Delisted National Clandestine Laboratory Register
NY DEL SHWS ---- Delisted Registry Sites
US CDL ---- National Clandestine Laboratory Register
NY PFAS ---- PFAS Contamination Site Location Listing

Local Lists of Registered Storage Tanks

NY HIST UST ---- Historical Petroleum Bulk Storage Database

NY HIST AST - Historical Petroleum Bulk Storage Database

Local Land Records

LIENS 2 - CERCLA Lien Information

Records of Emergency Release Reports

HMIRS - Hazardous Materials Information Reporting System
NY Hist Spills - SPILLS Database
NY SPILLS 90 - SPILLS 90 data from FirstSearch
NY SPILLS 80 - SPILLS 80 data from FirstSearch

Other Ascertainable Records

FUDS - Formerly Used Defense Sites
DOD - Department of Defense Sites
SCRD DRYCLEANERS - State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR - Financial Assurance Information
EPA WATCH LIST - EPA WATCH LIST
2020 COR ACTION - 2020 Corrective Action Program List
TSCA - Toxic Substances Control Act
TRIS - Toxic Chemical Release Inventory System
SSTS - Section 7 Tracking Systems
ROD - Records Of Decision
RMP - Risk Management Plans
PADS - PCB Activity Database System
FTTS - FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS - Material Licensing Tracking System
COAL ASH DOE - Steam-Electric Plant Operation Data
COAL ASH EPA - Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER - PCB Transformer Registration Database
RADINFO - Radiation Information Database
HIST FTTS - FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS - Incident and Accident Data
CONSENT - Superfund (CERCLA) Consent Decrees
INDIAN RESERV - Indian Reservations
FUSRAP - Formerly Utilized Sites Remedial Action Program
UMTRA - Uranium Mill Tailings Sites
US MINES - Mines Master Index File
ABANDONED MINES - Abandoned Mines
DOCKET HWC - Hazardous Waste Compliance Docket Listing
UXO - Unexploded Ordnance Sites
FUELS PROGRAM - EPA Fuels Program Registered Listing
NY COAL ASH - Coal Ash Disposal Site Listing
NY E DESIGNATION - E DESIGNATION SITE LISTING
NY VAPOR REOPENED - Vapor Intrusion Legacy Site List
NY UIC - Underground Injection Control Wells
NY COOLING TOWERS - Registered Cooling Towers

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

NY RGA HWS - Recovered Government Archive State Hazardous Waste Facilities List

EXECUTIVE SUMMARY

NY RGA LF..... Recovered Government Archive Solid Waste Facilities List

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: Also known as Superfund, the National Priority List database is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund program. The source of this database is the U.S. EPA.

A review of the NPL list, as provided by EDR, and dated 04/11/2019 has revealed that there is 1 NPL site within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
NEWTOWN CREEK Cerclis ID:: 206282 EPA Id: NYN000206282	***SOUTH END OF IVY HIL***	***N 1/4 - 1/2 (0.486 mi.)***	***AZ321***	***960***

Federal CERCLIS list

SEMS: SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

A review of the SEMS list, as provided by EDR, and dated 04/11/2019 has revealed that there is 1 SEMS site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
NEWTOWN CREEK Site ID: 0206282 EPA Id: NYN000206282	***SOUTH END OF IVY HIL***	***N 1/4 - 1/2 (0.486 mi.)***	***AZ321***	***960***

EXECUTIVE SUMMARY

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

A review of the SEMS-ARCHIVE list, as provided by EDR, and dated 04/11/2019 has revealed that there are 7 SEMS-ARCHIVE sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
KORNBLUM, SIDNEY	***394 JOHNSON AVE.***	***W 0 - 1/8 (0.105 mi.)***	***G77***	***225***
AAA ALLOYS OF AMERIC	***12 WYCKOFF AVE***	***ESE 1/4 - 1/2 (0.362 mi.)***	***287***	***862***
TECHNICAL METAL FINI	***214 STARR STREET***	***ESE 1/4 - 1/2 (0.405 mi.)***	***298***	***897***
Site ID: 0202279				
EPA Id: NYD980780894				
BROOKLYN SCRAP METAL	***171 COOK ST.***	***SW 1/4 - 1/2 (0.435 mi.)***	***307***	***934***

Lower Elevation	Address	Direction / Distance	Map ID	Page
CRESCENT SMELTING WO	***232 SEIGEL***	***WSW 1/4 - 1/2 (0.344 mi.)***	***AP283***	***856***
ANCHOR METAL CO.	***244 BOERUM STREET***	***WSW 1/4 - 1/2 (0.383 mi.)***	***AQ292***	***873***
REPUBLIC MILL 1	DEARBORN STREET	N 1/4 - 1/2 (0.493 mi.)	AZ323	973

Federal RCRA generators list

RCRA-LQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

A review of the RCRA-LQG list, as provided by EDR, and dated 03/25/2019 has revealed that there are 7 RCRA-LQG sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
ALL PRO REMOVALS LLC	407 JOHNSON AVE	W 0 - 1/8 (0.030 mi.)	B17	65
EPA ID:: NYR000156497				
CON EDISON - MANHOLE	VARICK AVE	NE 1/8 - 1/4 (0.168 mi.)	T132	325
EPA ID:: NYP004287884				
ENEQUIST CHEMICAL CO	***100 VARICK AVE.***	***NE 1/8 - 1/4 (0.169 mi.)***	***T135***	***329***
EPA ID:: NYD002028827				
THE PRINTHOUSE INC	***538 JOHNSON AVE***	***ENE 1/8 - 1/4 (0.204 mi.)***	***Z180***	***461***

EPA ID:: NYR000143248				
CON EDISON - SERVICE EPA ID:: NYP004715157	179 MORGAN AVE	NW 1/8 - 1/4 (0.219 mi.)	Y201	527
CON EDISON - MANHOLE EPA ID:: NYP004735478	STAGG ST & MORGAN AV	NW 1/8 - 1/4 (0.234 mi.)	Y225	680
CON EDISON - MANHOLE EPA ID:: NYP005152632	333 SCHOLES ST	WNW 1/8 - 1/4 (0.237 mi.)	AD236	696

RCRA-SQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 03/25/2019 has revealed that there are 6 RCRA-SQG sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
88 INGRAHAM REALTY C EPA ID:: NYD020592838	***88 INGRAHAM ST***	***SSE 0 - 1/8 (0.014 mi.)***	***A6***	***15***
AMERICAN MEDICAL RES EPA ID:: NYR000078105	***78 INGRAHAM ST***	***SSW 0 - 1/8 (0.015 mi.)***	***A10***	***46***
NYSDEC #224142 - ING EPA ID:: NYR000180075	***KNICKERBOCKER AVE &***	***WSW 0 - 1/8 (0.048 mi.)***	***B25***	***86***
MTA NYCT - MORGAN AV EPA ID:: NYR000163543	HARRISON PLACE & MOR	SW 0 - 1/8 (0.097 mi.)	H72	213

Lower Elevation	Address	Direction / Distance	Map ID	Page
GREEN OFFICE SYSTEMS EPA ID:: NYR000163840	154 MORGAN AVENUE	NW 1/8 - 1/4 (0.161 mi.)	R123	311
WASTE MANAGEMENT OF EPA ID:: NYD982744815	***123 VARICK AVE***	***NNE 1/8 - 1/4 (0.196 mi.)***	***X160***	***392***

RCRA-CESQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

A review of the RCRA-CESQG list, as provided by EDR, and dated 03/25/2019 has revealed that there are 4 RCRA-CESQG sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
CORNISH KNIT GOODS EPA ID:: NYD001683457	***PORTER AVE***	***E 0 - 1/8 (0.064 mi.)***	***E37***	***108***
ARCHITECTURAL COATIN	***538 JOHNSON AVE - GR***	***ENE 1/8 - 1/4 (0.204 mi.)***	***Z181***	***472***

EPA ID:: NYR000168104				
RAINBOW POLYBAG-MORG	***179 MORGAN AVE***	***NW 1/8 - 1/4 (0.219 mi.)***	***Y203***	***530***
EPA ID:: NYD084090414				
NYC DEPT OF SANITATI	VARICK AVE	NNE 1/8 - 1/4 (0.249 mi.)	AM263	755
EPA ID:: NYR000109116				

State- and tribal - equivalent CERCLIS

NY SHWS: The State Hazardous Waste Sites records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. The data come from the Department of Environmental Conservation's Inactive Hazardous waste Disposal Sites in New York State.

A review of the NY SHWS list, as provided by EDR, and dated 05/13/2019 has revealed that there are 8 NY SHWS sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
2 INGRAHAM STREET -	***2 INGRAHAM ST***	***WSW 1/8 - 1/4 (0.137 mi.)***	***P93***	***258***
Site Code: 57074				
TECHNICAL METAL FINI	***214 STARR STREET***	***ESE 1/4 - 1/2 (0.405 mi.)***	***298***	***897***
Site Code: 57764				
TOP HAT CLEANERS	***152 GRAHAM AVE***	***W 1/2 - 1 (0.633 mi.)***	***327***	***980***
Site Code: 504341				
FORMER KLINK COSMO C	364 RICHARDSON STREE	NNW 1/2 - 1 (0.911 mi.)	332	1017
Site Code: 405851				
Class Code: Significant threat to the public health or environment - action required.				
GOODMAN BROTHERS STE	***18 DIVISION PLACE***	***NNW 1/2 - 1 (0.968 mi.)***	***333***	***1021***
Site Code: 505634				
Class Code: Significant threat to the public health or environment - action required.				

Lower Elevation	Address	Direction / Distance	Map ID	Page
VARICK AVENUE	165 VARICK AVENUE	NNE 1/4 - 1/2 (0.254 mi.)	AM268	784
Site Code: 55914				
BCF OIL REFINING, IN	***360 MASPETH AVENUE***	***N 1/2 - 1 (0.712 mi.)***	***329***	***989***
Site Code: 56747				
KEYSPAN - LNG PLANT	***287 MASPETH AVENUE***	***N 1/2 - 1 (0.862 mi.)***	***BB330***	***996***
Site Code: 372971				
Class Code: Significant threat to the public health or environment - action required.				

State and tribal landfill and/or solid waste disposal site lists

NY SWF/LF: The Solid Waste Facilities/Landfill Sites records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. The data come from the list.

A review of the NY SWF/LF list, as provided by EDR, and dated 12/31/2018 has revealed that there are

EXECUTIVE SUMMARY

19 NY SWF/LF sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
U. S. WASTE MANAGEME	48 KNICKERBOCKER (69	SW 0 - 1/8 (0.062 mi.)	D34	105
CITYGREEN ORGANICS	***105-115 THAMES STREE***	***SSE 1/8 - 1/4 (0.143 mi.)***	***N105***	***283***
UNIVERSAL USED AUTO	***1175 FLUSHING AVE***	***ESE 1/8 - 1/4 (0.233 mi.)***	***AF221***	***657***
RAM AUTO WRECKERS	230 COOK STREET	SSW 1/4 - 1/2 (0.320 mi.)	279	838

Lower Elevation	Address	Direction / Distance	Map ID	Page
COOPER RECYCLING COR	***123 VARICK AVENUE***	***NNE 1/8 - 1/4 (0.196 mi.)***	***X161***	***400***
HI-TECH RESOURCE REC	***130 VARICK AVENUE***	***NNE 1/8 - 1/4 (0.217 mi.)***	***X194***	***501***
UNIVERSAL SCRAP PROC	***27 STEWART AVE***	***ESE 1/8 - 1/4 (0.248 mi.)***	***AK257***	***733***
DANGELO AUTO SALES &	582 JOHNSON AVE	ENE 1/4 - 1/2 (0.276 mi.)	271	789
FRITO-LAY	***202-218 MORGAN AVE***	***NW 1/4 - 1/2 (0.280 mi.)***	***AN273***	***825***
METRO NEW YORK SERVI	***222 MORGAN AVE***	***NNW 1/4 - 1/2 (0.338 mi.)***	***281***	***841***
WMNY VARICK 1 TRANSF	***215 VARICK AVENUE***	***N 1/4 - 1/2 (0.346 mi.)***	***284***	***857***
CASALINO INTERIOR DE	***213 MEADOW ST***	***NNE 1/4 - 1/2 (0.356 mi.)***	***285***	***858***
COOPER TANK RECYCLIN	201-203 MOORE STREET	WSW 1/4 - 1/2 (0.374 mi.)	AP290	871
DURITE S&V & MAINT.	250 MORGAN AVE	NNW 1/4 - 1/2 (0.398 mi.)	295	888
NEW TOWN AUTO SALES	***1074 GRAND STREET***	***NNW 1/4 - 1/2 (0.416 mi.)***	***AU301***	***902***
BROWNING FERRIS	***72 SCOTT AVE***	***ENE 1/4 - 1/2 (0.422 mi.)***	***AV302***	***904***
BFI (598-636 SCHOLES	598-636 SCHOLES STRE	NE 1/4 - 1/2 (0.440 mi.)	AW308	934
GADS INC	594 SCHOLES STREET	NE 1/4 - 1/2 (0.451 mi.)	AW313	942
WASTE MANAGEMENT OF	1301 METROPOLITAN AV	NNE 1/4 - 1/2 (0.498 mi.)	326	979

State and tribal leaking storage tank lists

NY LTANKS: Leaking Storage Tank Incident Reports. These records contain an inventory of reported leaking storage tank incidents reported from 4/1/86 through the most recent update. They can be either leaking underground storage tanks or leaking aboveground storage tanks. The causes of the incidents are tank test failures, tank failures or tank overfills

A review of the NY LTANKS list, as provided by EDR, and dated 05/13/2019 has revealed that there are 40 NY LTANKS sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CORNELL BEVERAGES IN	***105 HARRISON PLACE***	***SE 0 - 1/8 (0.058 mi.)***	***E28***	***93***
Spill Number/Closed Date: 0706869 / 2008-10-17				
Spill Number/Closed Date: 9610865 / 2008-10-17				
Site ID: 387468				
Site ID: 92955				
Spill Date: 2007-09-20				
Spill Date: 1996-12-03				
10-85 IRVING AVE.	10-85 IRVING AVENUE	SE 1/4 - 1/2 (0.264 mi.)	270	788
Spill Number/Closed Date: 9008571 / 1992-09-30				
Site ID: 286633				
Spill Date: 1990-11-05				
147 NOLL STREET	147 NOLL ST	S 1/4 - 1/2 (0.285 mi.)	AO274	828
Spill Number/Closed Date: 0006735 / 2002-12-06				
Site ID: 234507				
Spill Date: 2000-09-07				
114 FORREST STREET	114 FORREST STREET	SSW 1/4 - 1/2 (0.311 mi.)	278	837

Spill Number/Closed Date: 0302890 / 2003-10-30
Site ID: 200453
Spill Date: 2003-06-18

APARTMENT BUILDING	35 MEADOW STREET	NW 1/4 - 1/2 (0.334 mi.)	280	839
Spill Number/Closed Date: 0601731 / 2006-08-29 Site ID: 364030 Spill Date: 2006-05-16				
CLOSED-LACKOF RECENT	***268 JOHNSON AVENUE***	***W 1/4 - 1/2 (0.362 mi.)***	***288***	***863***
Spill Number/Closed Date: 8904846 / 2008-05-06 Spill Number/Closed Date: 9913444 / 2009-01-14 Site ID: 148418 Site ID: 195776 Spill Date: 1989-08-14 Spill Date: 2000-02-28				
345 TENEYCK STREET	345 TENEYCK STREET	NW 1/4 - 1/2 (0.365 mi.)	289	870
Spill Number/Closed Date: 9210082 / 1992-12-01 Site ID: 300237 Spill Date: 1992-12-01				
COMMERCIAL PROPERTY	***1-7 BUSHWICK PLACE***	***W 1/4 - 1/2 (0.400 mi.)***	***AT296***	***889***
Spill Number/Closed Date: 0300112 / 2004-03-24 Site ID: 80495 Spill Date: 2003-04-02				
308 MAUJER ST	308 MAUJER ST	NW 1/4 - 1/2 (0.413 mi.)	300	901
Spill Number/Closed Date: 0305120 / 2006-01-31 Site ID: 144741 Spill Date: 2003-08-14				
MIRAMARS DRY CLEANER	***103 WILSON AVE***	***SSE 1/4 - 1/2 (0.429 mi.)***	***306***	***923***
Spill Number/Closed Date: 9611402 / 2003-06-16 Site ID: 128554 Spill Date: 1996-12-16				
SPILL NUMBER 0003338	232 MESROLE ST	W 1/4 - 1/2 (0.448 mi.)	AT310	937
Spill Number/Closed Date: 0003338 / 2003-04-10 Site ID: 202905 Spill Date: 2000-06-17				
APARTMENT BLDG - TTF	49 WYCKOFF AVE	ESE 1/4 - 1/2 (0.449 mi.)	311	938
Spill Number/Closed Date: 1009563 / 2018-08-10 Site ID: 443122 Spill Date: 2010-12-07				
EMPIRE WAREHOUSE	1312-1324 FLUSHING A	ENE 1/4 - 1/2 (0.470 mi.)	317	949
Spill Number/Closed Date: 9903972 / 2000-08-23 Site ID: 111006 Spill Date: 1999-07-06				
BORINQUEN HOUSES	***300 BUSHWICK AVENUE***	***WSW 1/4 - 1/2 (0.487 mi.)***	***BA322***	***967***
Spill Number/Closed Date: 9711478 / 1998-02-02 Spill Number/Closed Date: 9010701 / 1998-01-13 Spill Number/Closed Date: 9712046 / 2004-02-06 Site ID: 191464 Site ID: 191530 Site ID: 191531 Spill Date: 1998-01-13 Spill Date: 1991-01-07				

Spill Date: 1998-01-28

Lower Elevation	Address	Direction / Distance	Map ID	Page
UNOCCUPIED WAREHOUSE Spill Number/Closed Date: 0210928 / 2014-11-19 Site ID: 209777 Spill Date: 2003-01-31	88 PORTER AVENUE	E 0 - 1/8 (0.058 mi.)	E27	92
CORNISH MINI MILLS Spill Number/Closed Date: 9600503 / 1996-11-22 Site ID: 239705 Spill Date: 1996-04-11	121 INGRAHAM ST	E 0 - 1/8 (0.064 mi.)	E36	107
100 MORGAN AVENUE Spill Number/Closed Date: 9909719 / 2000-11-20 Site ID: 328581 Spill Date: 1999-11-10	100 MORGAN AVE	WNW 0 - 1/8 (0.094 mi.)	J67	200
140 MORGAN AVE/BROOK Spill Number/Closed Date: 8910515 / 1990-02-03 Site ID: 113471 Spill Date: 1990-01-30	***140 MORGAN AVENUE***	***NW 1/8 - 1/4 (0.125 mi.)***	***J86***	***241***
DERBY TEXTILE CORPOR Spill Number/Closed Date: 9713513 / 2004-08-18 Site ID: 331363 Spill Date: 1998-03-05	***41 VARICK AVENUE***	***E 1/8 - 1/4 (0.141 mi.)***	***M97***	***270***
JOYVA CORPORATION Spill Number/Closed Date: 0302698 / 2003-07-23 Site ID: 303353 Spill Date: 2003-06-13	53 VARICK AVE	E 1/8 - 1/4 (0.145 mi.)	L111	293
EMEQUIFT CHEMICAL CO Spill Number/Closed Date: 0502445 / 2006-05-31 Site ID: 346803 Spill Date: 2005-05-31	100 VARICK AVE	NE 1/8 - 1/4 (0.169 mi.)	T134	327
56-72 BOGART ST Spill Number/Closed Date: 9709358 / 2005-08-09 Site ID: 153113 Spill Date: 1997-11-12	***56-72 BOGART STREET***	***SW 1/8 - 1/4 (0.186 mi.)***	***S152***	***374***
APT COMPLEX Spill Number/Closed Date: 0300325 / 2004-03-24 Site ID: 117954 Spill Date: 2003-03-12	349 SCHOLES ST	NW 1/8 - 1/4 (0.219 mi.)	AD204	535
UNITED TRANSIT MIX I Spill Number/Closed Date: 0303441 / 2004-04-23 Site ID: 142932 Spill Date: 2003-07-02	***318 BOERUM ST***	***WSW 1/8 - 1/4 (0.225 mi.)***	***AA211***	***591***
NYC DEPART OF SANITA Spill Number/Closed Date: 0305740 / 2003-10-16 Site ID: 158270 Spill Date: 2003-08-29	***VARICK AVE***	***NNE 1/8 - 1/4 (0.249 mi.)***	***AM262***	***750***
NEO-RAY PRODUCTIONS Spill Number/Closed Date: 8806105 / 1992-10-07 Site ID: 155588	***537 JOHNSON AVE***	***ENE 1/4 - 1/2 (0.252 mi.)***	***AI266***	***768***

Spill Date: 1988-10-19

CAL OSTLUND INC	***185 RANDOLPH STREET***	***ENE 1/4 - 1/2 (0.293 mi.)***	***275***	***830***
Spill Number/Closed Date: 0212548 / 2005-12-07				
Site ID: 120041				
Spill Date: 2003-03-20				
APT BUILDING TANK	85 MEADOW STREET	N 1/4 - 1/2 (0.298 mi.)	276	835
Spill Number/Closed Date: 0504662 / 2005-12-09				
Site ID: 349596				
Spill Date: 2005-07-19				
METRO NEW YORK SERVI	***222 MORGAN AVE***	***NNW 1/4 - 1/2 (0.338 mi.)***	***281***	***841***
Spill Number/Closed Date: 0009585 / 2003-08-28				
Spill Number/Closed Date: 9312206 / 1994-01-17				
Site ID: 302888				
Site ID: 302889				
Spill Date: 2000-11-21				
Spill Date: 1994-01-17				
COOPER TANK & WELDIN	215 MOORE STREET	SW 1/4 - 1/2 (0.343 mi.)	AP282	845
Spill Number/Closed Date: 0312904 / 2011-06-06				
Site ID: 305294				
Spill Date: 2004-02-23				
MARC KATZMAN	255 MCKIBBON ST	WSW 1/4 - 1/2 (0.357 mi.)	AQ286	859
Spill Number/Closed Date: 0407643 / 2005-11-30				
Spill Number/Closed Date: 0410531 / 2005-11-30				
Site ID: 332168				
Site ID: 335506				
Spill Date: 2004-10-09				
Spill Date: 2004-12-22				
F & W WOODWORK CO	***1267 FLUSHING AVE***	***ENE 1/4 - 1/2 (0.400 mi.)***	***297***	***893***
Spill Number/Closed Date: 9308847 / 1993-10-21				
Site ID: 60933				
Spill Date: 1993-10-21				
BROWNING FERRIS	***72 SCOTT AVE***	***ENE 1/4 - 1/2 (0.422 mi.)***	***AV302***	***904***
Spill Number/Closed Date: 9703477 / 1997-06-25				
Spill Number/Closed Date: 9708693 / 2004-10-20				
Site ID: 144360				
Site ID: 144361				
Spill Date: 1997-06-20				
Spill Date: 1997-10-24				
ROLET FOOD PRODUCTS	70 SCOTT AVE	ENE 1/4 - 1/2 (0.424 mi.)	AV304	921
Spill Number/Closed Date: 0109443 / 2002-01-14				
Site ID: 179351				
Spill Date: 2001-12-26				
SUNSHINE BISCUITS IN	***1251 METROPOLITAN AV***	***NNE 1/4 - 1/2 (0.457 mi.)***	***AY315***	***943***
Spill Number/Closed Date: 8607890 / 1987-03-25				
Site ID: 110767				
Spill Date: 1987-03-24				
CLOSED-LACKOF RECENT	1105 METROPOLITAN AV	NNW 1/4 - 1/2 (0.459 mi.)	AU316	947
Spill Number/Closed Date: 8802460 / 2003-03-05				
Site ID: 183945				
Spill Date: 1988-06-17				
MANYA CORPORATION F.	***235 GARDNER AVENUE***	***NNE 1/4 - 1/2 (0.472 mi.)***	***AY318***	***950***

Spill Number/Closed Date: 9002646 / 1992-10-02
Spill Number/Closed Date: 9909043 / 2005-10-07
Spill Number/Closed Date: 8808903 / 2004-07-06
Spill Number/Closed Date: 9405227 / 1994-07-17
Site ID: 296438
Site ID: 296439
Site ID: 251434
Site ID: 251435
Spill Date: 1990-06-06
Spill Date: 1999-10-25
Spill Date: 1989-02-14
Spill Date: 1994-07-17

1101 METROPOLITAN AV Spill Number/Closed Date: 9800642 / 2006-05-17 Site ID: 190461 Spill Date: 1998-04-15	1101 METROPOLITAN AV	NNW 1/4 - 1/2 (0.478 mi.)	319	957
CONSOLIDATED CARPET Spill Number/Closed Date: 9511303 / 2006-02-07 Site ID: 193820 Spill Date: 1995-12-07	1157 GRAND ST	N 1/4 - 1/2 (0.484 mi.)	320	958
BORINQUEN HOUSES Spill Number/Closed Date: 9601914 / 2005-12-09 Site ID: 63348 Spill Date: 1996-05-08	***330 BUSHWICK AVENUE***	***WSW 1/4 - 1/2 (0.495 mi.)***	***BA324***	***974***

State and tribal registered storage tank lists

NY UST: The Underground Storage Tank database contains registered USTs. USTs are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA). The data come from the Department of Environmental Conservation's Petroleum Bulk Storage (PBS) Database

A review of the NY UST list, as provided by EDR, has revealed that there are 33 NY UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
POPULAR UNIFORM Database: UST, Date of Government Version: 03/26/2019	88 INGRAHAM STREET	SSE 0 - 1/8 (0.014 mi.)	A8	34
27 KNICKERBOCKER REA Database: UST, Date of Government Version: 03/26/2019	27 KNICKERBOCKER AVE	SW 0 - 1/8 (0.036 mi.)	D18	67
CORNELL BEVERAGES IN Database: UST, Date of Government Version: 03/26/2019	***105 HARRISON PLACE***	***SE 0 - 1/8 (0.058 mi.)***	***E28***	***93***
VOILA BAKERY Database: UST, Date of Government Version: 03/26/2019	65 PORTER AVENUE	ESE 0 - 1/8 (0.078 mi.)	E51	166
66-78 KNICKERBOCKER Database: UST, Date of Government Version: 03/26/2019	66-78 KNICKERBOCKER	SSW 0 - 1/8 (0.090 mi.)	I64	191
132 HARRISON PLACE Database: UST, Date of Government Version: 03/26/2019	***132 HARRISON PLACE***	***ESE 0 - 1/8 (0.116 mi.)***	***M83***	***234***
47 THAMES STREET Database: UST, Date of Government Version: 03/26/2019	47 THAMES ST	S 1/8 - 1/4 (0.144 mi.)	Q107	285
1087 FLUSHING AVE Database: UST, Date of Government Version: 03/26/2019	1087 FLUSHING AVENUE	SSE 1/8 - 1/4 (0.183 mi.)	U148	366

EXECUTIVE SUMMARY

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
FL MINI MART, CORP Database: UST, Date of Government Version: 03/26/2019	1127 FLUSHING AVENUE	SE 1/8 - 1/4 (0.199 mi.)	W177	440
GEIS SERVICE STATION Database: UST, Date of Government Version: 03/26/2019	1070 FLUSHING AVENUE	SSE 1/8 - 1/4 (0.199 mi.)	U178	450
UNIVERSAL USED AUTO Database: UST, Date of Government Version: 03/26/2019	1175 FLUSHING AVENUE	ESE 1/8 - 1/4 (0.233 mi.)	AF222	668
BOARS HEAD PROVISION Database: UST, Date of Government Version: 03/26/2019	151 KNICKERBOCKER AV	SSE 1/8 - 1/4 (0.235 mi.)	AG231	689
SABIN METAL CORP Database: UST, Date of Government Version: 03/26/2019	316 MESEROLE STREET	WNW 1/8 - 1/4 (0.245 mi.)	251	718
FRANK BRUNKHORST CO. Database: UST, Date of Government Version: 03/26/2019	24 ROCK STREET	SSW 1/8 - 1/4 (0.246 mi.)	AJ254	728

Lower Elevation	Address	Direction / Distance	Map ID	Page
HYMEL PORTER REALTY Database: UST, Date of Government Version: 03/26/2019	88 PORTER AVENUE	E 0 - 1/8 (0.058 mi.)	E26	89
CORNISH KNIT GOODS Database: UST, Date of Government Version: 03/26/2019	***PORTER AVE***	***E 0 - 1/8 (0.064 mi.)***	***E37***	***108***
PORTER AVENUE TRANSI Database: UST, Date of Government Version: 03/26/2019	89-111 PORTER AVENUE	ENE 0 - 1/8 (0.074 mi.)	E41	149
STEEL LOS Database: UST, Date of Government Version: 03/26/2019	***100 MORGAN AVENUE***	***WNW 0 - 1/8 (0.094 mi.)***	***J70***	***207***
101 VARICK, WASTE MA Database: UST, Date of Government Version: 03/26/2019	101 VARICK AVENUE	NE 0 - 1/8 (0.098 mi.)	K75	220
140 MORGAN AVE. WHSE Database: UST, Date of Government Version: 03/26/2019	140 MORGAN AVENUE	NW 1/8 - 1/4 (0.125 mi.)	J85	239
SUPERIOR HOLDING LLC Database: UST, Date of Government Version: 03/26/2019	375 JOHNSON AVE	W 1/8 - 1/4 (0.130 mi.)	O89	247
ACME CAKE CO INC Database: UST, Date of Government Version: 03/26/2019	374 JOHNSON AVE	W 1/8 - 1/4 (0.138 mi.)	O96	268
DERBY TEXTILE CORPOR Database: UST, Date of Government Version: 03/26/2019	***41 VARICK AVENUE***	***E 1/8 - 1/4 (0.141 mi.)***	***M97***	***270***
JOYVA CORP. Database: UST, Date of Government Version: 03/26/2019	***53 VARICK AVENUE***	***E 1/8 - 1/4 (0.145 mi.)***	***L110***	***290***
JFC INTERNATIONAL IN Database: UST, Date of Government Version: 03/26/2019	40 VARICK AVENUE	E 1/8 - 1/4 (0.159 mi.)	121	308
56-72 BOGART ST Database: UST, Date of Government Version: 03/26/2019	***56-72 BOGART STREET***	***SW 1/8 - 1/4 (0.186 mi.)***	***S152***	***374***
DSNY BK DISTRICT 3 G Database: UST, Date of Government Version: 03/26/2019	***525 JOHNSON AVENUE***	***ENE 1/8 - 1/4 (0.218 mi.)***	***Z198***	***506***
349 SCHOLES ST. Database: UST, Date of Government Version: 03/26/2019	349 SCHOLES STREET	NW 1/8 - 1/4 (0.219 mi.)	AD205	537
ADM REALTY CORP. LLC Database: UST, Date of Government Version: 03/26/2019	318 BOERUM STREET	WSW 1/8 - 1/4 (0.225 mi.)	AA210	589
ALVIN J. BART & SONS Database: UST, Date of Government Version: 03/26/2019	333 JOHNSON AVENUE	W 1/8 - 1/4 (0.228 mi.)	AA213	597

Lower Elevation	Address	Direction / Distance	Map ID	Page
106 STEWART AVE Database: UST, Date of Government Version: 03/26/2019	106 STEWART AVE	ENE 1/8 - 1/4 (0.241 mi.)	AI237	698
304 BOERUM ST. LLC Database: UST, Date of Government Version: 03/26/2019	304 BOERUM ST	WSW 1/8 - 1/4 (0.249 mi.)	AL260	740
DSNY BK DISTRICT 1/4 Database: UST, Date of Government Version: 03/26/2019	161 VARICK AVENUE	NNE 1/8 - 1/4 (0.249 mi.)	AM261	742

NY CBS UST: Chemical Bulk Storage Database. Registration data collected as required by 6 NYCRR Part 596. It includes facilities storing hazardous substances listed in 6 NYCRR Part 597, in aboveground tanks with capacities of 185 gallons or greater, and/or in underground tanks of any size. Includes facilities registered (and closed) since effective date of CBS regulations (July 15, 1988) through the date request is processed.

A review of the NY CBS UST list, as provided by EDR, and dated 01/01/2002 has revealed that there is 1 NY CBS UST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BASIC ADHESIVES INC Facility Status: 2 Id/Status: 2-000228 Tank Status: 1	25 KNICKERBOCKER AVE	WSW 0 - 1/8 (0.030 mi.)	B15	61

NY MOSF UST: Major Oil Storage Facilities Database. Facilities are licensed pursuant to Article 12 of the Navigation Law, 6 NYCRR Part 610 and 17 NYCRR Part 30. These facilities may be onshore facilities or vessels, with petroleum storage capacities of 400,000 gallons or greater. Includes MOSF's licensed or closed since April 1, 1986, (responsibility was transferred from DOT on October 13, 1985) plus available data obtained from DOT facilities licensed since Article 12 became law on April 1, 1978.

A review of the NY MOSF UST list, as provided by EDR, and dated 01/01/2002 has revealed that there are 2 NY MOSF UST sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
MORGAN OIL TERMINALS	***200 MORGAN AVE***	***NNW 1/8 - 1/4 (0.229 mi.)***	***Y216***	***641***
BAYSIDE FUEL OIL DEP	***1100 GRAND STREET***	***NNW 1/4 - 1/2 (0.397 mi.)***	***AS293***	***874***

NY CBS: These facilities store regulated hazardous substances in aboveground tanks with capacities of 185 gallons or greater, and/or in underground tanks of any size

A review of the NY CBS list, as provided by EDR, and dated 03/26/2019 has revealed that there are 3 NY CBS sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BASIC ADHESIVES INC Facility Status: Unregulated/Closed CBS Number: 2-000228	***25 KNICKERBOCKER AVE***	***WSW 0 - 1/8 (0.030 mi.)***	***B14***	***56***

Lower Elevation	Address	Direction / Distance	Map ID	Page
NATIONWIDE CHEMICAL	***395 JOHNSON AVENUE***	***W 0 - 1/8 (0.043 mi.)***	***B22***	***76***

Facility Status: Unregulated/Closed
CBS Number: 2-000152

ENEQUIST CHEMICAL CO	***100 VARICK AVENUE***	***NE 1/8 - 1/4 (0.169 mi.)***	***T136***	***348***

Facility Status: Unregulated/Closed
CBS Number: 2-000027

NY MOSF: These facilities may be onshore facilities or vessels, with petroleum storage capacities of 400,000 gallons or greater.

A review of the NY MOSF list, as provided by EDR, and dated 03/26/2019 has revealed that there are 2 NY MOSF sites within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
NYC DEP HAZ MAT	***200 MORGAN AVENUE***	***NNW 1/8 - 1/4 (0.229 mi.)***	***Y215***	***603***
Tank Status: Inactive Facility Id: 2-1500				
BAYSIDE FUEL OIL DEP	***1100 GRAND STREET***	***NNW 1/4 - 1/2 (0.397 mi.)***	***AS294***	***884***
Tank Status: Active Facility Id: 2-1280				

NY AST: The Aboveground Storage Tank database contains registered ASTs. The data come from the Department of Environmental Conservation's Petroleum Bulk Storage (PBS) Database.

A review of the NY AST list, as provided by EDR, has revealed that there are 26 NY AST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
J & R AFFILIATES	109 INGRAHAM STREET	E 0 - 1/8 (0.037 mi.)	A19	71
Database: AST, Date of Government Version: 03/26/2019 Facility Id: 2-608335				
RAPID READY MIX SUPP	46 KNICKERBOCKER AVE	SW 0 - 1/8 (0.061 mi.)	D29	98
Database: AST, Date of Government Version: 03/26/2019 Facility Id: 2-610837				
HARRISON KNIKERBOCKE	54 KNICKERBOCKER AVE	SSW 0 - 1/8 (0.076 mi.)	D49	161
Database: AST, Date of Government Version: 03/26/2019 Facility Id: 2-609504				
ADVERTISING CRAFTSMA	65 PORTER AVE	ESE 0 - 1/8 (0.078 mi.)	E50	163
Database: AST, Date of Government Version: 03/26/2019 Facility Id: 2-193003				
40 INGRAHAM ST	40 INGRAHAM STREET	WSW 0 - 1/8 (0.081 mi.)	H53	175
Database: AST, Date of Government Version: 03/26/2019 Facility Id: 2-083879				
B.B. BODY AND AUTO R	52 HARRISON PLACE	SSW 0 - 1/8 (0.084 mi.)	D57	181
Database: AST, Date of Government Version: 03/26/2019 Facility Id: 2-611253				
132 HARRISON PLACE	***132 HARRISON PLACE***	***ESE 0 - 1/8 (0.116 mi.)***	***M83***	***234***
Database: AST, Date of Government Version: 03/26/2019 Facility Id: 2-603715				
ENGINE COMPANY 237	43 MORGAN AVENUE	SSW 1/8 - 1/4 (0.155 mi.)	Q119	304
Database: AST, Date of Government Version: 03/26/2019				

Facility Id: 2-357502

MILHAW REALTY CORPOR Database: AST, Date of Government Version: 03/26/2019 Facility Id: 2-603519	2-40 INGRAHAM STREET	WSW 1/8 - 1/4 (0.176 mi.)	P144	359
AMBATO AUTO SERVICES Database: AST, Date of Government Version: 03/26/2019 Facility Id: 2-610257	1090 FLUSHING AVENUE	SE 1/8 - 1/4 (0.211 mi.)	V190	495
FRANK BRUNKHORST CO. Database: AST, Date of Government Version: 03/26/2019 Facility Id: 2-010642	24 ROCK STREET	SSW 1/8 - 1/4 (0.246 mi.)	AJ252	721

Lower Elevation	Address	Direction / Distance	Map ID	Page
480 JOHNSON LLC Database: AST, Date of Government Version: 03/26/2019 Facility Id: 2-609098	480 JOHNSON AVENUE	ENE 0 - 1/8 (0.030 mi.)	A16	62
STEEL LOS Database: AST, Date of Government Version: 03/26/2019 Facility Id: 2-603123	***100 MORGAN AVENUE***	***WNW 0 - 1/8 (0.094 mi.)***	***J70***	***207***
SUPERIOR HOLDING LLC Database: AST, Date of Government Version: 03/26/2019 Facility Id: 2-607340	375 JOHNSON AVE	W 1/8 - 1/4 (0.130 mi.)	O90	251
ENEQUIST CHEMICAL Database: AST, Date of Government Version: 03/26/2019 Facility Id: 2-233072	100 VARICK AVENUE	NE 1/8 - 1/4 (0.169 mi.)	T133	326
MORGAN SCHOLES PROPE Database: AST, Date of Government Version: 03/26/2019 Facility Id: 2-608698	165 MORGAN AVENSUE	NW 1/8 - 1/4 (0.173 mi.)	R143	357
SMR MESEROLE CORP. Database: AST, Date of Government Version: 03/26/2019 Facility Id: 2-211001	350 MESEROLE STREET	WNW 1/8 - 1/4 (0.187 mi.)	154	379
WASTE MANAGEMENT OF Database: AST, Date of Government Version: 03/26/2019 Facility Id: 2-602618	123 VARICK AVENUE	NNE 1/8 - 1/4 (0.196 mi.)	X162	409
180 MORGAN LLC Database: AST, Date of Government Version: 03/26/2019 Facility Id: 2-608922	180 MORGAN AVENUE	NW 1/8 - 1/4 (0.198 mi.)	Y176	437
BROCHO V'HATZLOCHO C Database: AST, Date of Government Version: 03/26/2019 Facility Id: 2-108693	538 JOHNSON AVENUE	ENE 1/8 - 1/4 (0.204 mi.)	Z179	459
A M KNITWEAR CORP Database: AST, Date of Government Version: 03/26/2019 Facility Id: 2-047430	315 SEIGEL ST	SW 1/8 - 1/4 (0.208 mi.)	AC188	489
UNITED TRANSIT MIX I Database: AST, Date of Government Version: 03/26/2019 Facility Id: 2-612184	318 BOERUM STREET	WSW 1/8 - 1/4 (0.225 mi.)	AA212	593
BERLINER & MARX, INC Database: AST, Date of Government Version: 03/26/2019 Facility Id: 2-600651	330 JOHNSON AVENUE	W 1/8 - 1/4 (0.229 mi.)	AA214	599
TWIN MARQUIS, INC. Database: AST, Date of Government Version: 03/26/2019	328 JOHNSON AVENUE	W 1/8 - 1/4 (0.235 mi.)	AA232	691

Facility Id: 2-604066

UNIVERSAL SCRAP PROC	27 STEWART AVENUE	ESE 1/8 - 1/4 (0.248 mi.)	AK258	736
Database: AST, Date of Government Version: 03/26/2019 Facility Id: 2-611944				
304 BOERUM ST. LLC	304 BOERUM ST	WSW 1/8 - 1/4 (0.249 mi.)	AL259	738
Database: AST, Date of Government Version: 03/26/2019 Facility Id: 2-604506				

NY CBS AST: Chemical Bulk Storage Database. Registration data collected as required by 6 NYCRR Part 596. It includes facilities storing hazardous substances listed in 6 NYCRR Part 597, in aboveground tanks with capacities of 185 gallons or greater, and/or in underground tanks of any size. Includes facilities registered (and closed) since effective date of CBS regulations (July 15, 1988) through the date request is processed.

A review of the NY CBS AST list, as provided by EDR, and dated 01/01/2002 has revealed that there are 2 NY CBS AST sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
NATIONWIDE CHEMICAL Facility Status: 1 Facility Status: 1 CBS Number: 2-000152	***395 JOHNSON AVENUE***	***W 0 - 1/8 (0.043 mi.)***	***B22***	***76***
ENEQUIST CHEMICAL CO Facility Status: 1 Facility Status: 1 CBS Number: 2-000027	***100 VARICK AVE.***	***NE 1/8 - 1/4 (0.169 mi.)***	***T135***	***329***

NY MOSF AST: Major Oil Storage Facilities Database. Facilities are licensed pursuant to Article 12 of the Navigation Law, 6 NYCRR Part 610 and 17 NYCRR Part 30. These facilities may be onshore facilities or vessels, with petroleum storage capacities of 400,000 gallons or greater. Includes MOSF's licensed or closed since April 1, 1986, (responsibility was transferred from DOT on October 13, 1985) plus available data obtained from DOT facilities licensed since Article 12 became law on April 1, 1978.

A review of the NY MOSF AST list, as provided by EDR, and dated 01/01/2002 has revealed that there is 1 NY MOSF AST site within approximately 0.5 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
BAYSIDE FUEL OIL DEP Facility Status: 1 Facility Status: 4	***1100 GRAND STREET***	***NNW 1/4 - 1/2 (0.397 mi.)***	***AS293***	***874***

State and tribal institutional control / engineering control registries

NY ENG CONTROLS: Environmental Remediation sites that have engineering controls in place.

A review of the NY ENG CONTROLS list, as provided by EDR, and dated 05/13/2019 has revealed that

there are 4 NY ENG CONTROLS sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
88 INGRAHAM REALTY C Site Code: 58534	***88 INGRAHAM ST***	***SSE 0 - 1/8 (0.014 mi.)***	***A6***	***15***

Lower Elevation	Address	Direction / Distance	Map ID	Page
CORNISH KNIT GOODS/C Site Code: 58133	***121 INGRAHAM ST./89***	***E 0 - 1/8 (0.064 mi.)***	***E38***	***115***
353 MCKIBBIN STREET Site Code: 333585	***353 MCKIBBIN STREET***	***WSW 1/8 - 1/4 (0.222 mi.)***	***AC206***	***539***
FRITO LAY Site Code: 407689	***202-218 MORGAN AVENU***	***NW 1/4 - 1/2 (0.280 mi.)***	***AN272***	***790***

Environmental Remediation sites that have institutional controls in place.

A review of the NY INST CONTROL list, as provided by EDR, and dated 05/13/2019 has revealed that there are 4 NY INST CONTROL sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
88 INGRAHAM REALTY C Site Code: 58534	***88 INGRAHAM ST***	***SSE 0 - 1/8 (0.014 mi.)***	***A6***	***15***

Lower Elevation	Address	Direction / Distance	Map ID	Page
CORNISH KNIT GOODS/C Site Code: 58133	***121 INGRAHAM ST./89***	***E 0 - 1/8 (0.064 mi.)***	***E38***	***115***
353 MCKIBBIN STREET Site Code: 333585	***353 MCKIBBIN STREET***	***WSW 1/8 - 1/4 (0.222 mi.)***	***AC206***	***539***
FRITO LAY Site Code: 407689	***202-218 MORGAN AVENU***	***NW 1/4 - 1/2 (0.280 mi.)***	***AN272***	***790***

State and tribal voluntary cleanup sites

NY VCP: Voluntary Cleanup Agreements. The voluntary remedial program uses private monies to get contaminated sites remediated to levels allowing for the sites' productive use. The program covers virtually any kind of site and contamination.

A review of the NY VCP list, as provided by EDR, has revealed that there are 7 NY VCP sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
88 INGRAHAM REALTY C Database: VCP, Date of Government Version: 05/13/2019 Site Code: 58534	***88 INGRAHAM ST***	***SSE 0 - 1/8 (0.014 mi.)***	***A6***	***15***
2 INGRAHAM STREET - Database: VCP, Date of Government Version: 05/13/2019	***2 INGRAHAM ST***	***WSW 1/8 - 1/4 (0.137 mi.)***	***P93***	***258***

Site Code: 56868				
83 BUSHWICK PLACE Database: VCP NYC, Date of Government Version: 12/14/2018	83 BUSHWICK PLACE	W 1/4 - 1/2 (0.427 mi.)	305	922
902-908 FLUSHING AVE Database: VCP NYC, Date of Government Version: 12/14/2018	902-908 FLUSHING AVE	SW 1/4 - 1/2 (0.452 mi.)	AX314	942
11-23 MONTIETH STREE Database: VCP NYC, Date of Government Version: 12/14/2018	11-23 MONTIETH STREE	SW 1/4 - 1/2 (0.496 mi.)	AX325	979

Lower Elevation	Address	Direction / Distance	Map ID	Page
CORNISH KNIT GOODS/C Database: VCP, Date of Government Version: 05/13/2019 Site Code: 58133	***121 INGRAHAM ST./89***	***E 0 - 1/8 (0.064 mi.)***	***E38***	***115***
JOYVA VACANT LOT Database: VCP, Date of Government Version: 05/13/2019 Site Code: 56948	498 JOHNSON AVENUE	ENE 0 - 1/8 (0.103 mi.)	L76	224

State and tribal Brownfields sites

NY BROWNFIELDS: Brownfields Site List

A review of the NY BROWNFIELDS list, as provided by EDR, and dated 05/13/2019 has revealed that there are 5 NY BROWNFIELDS sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
2 INGRAHAM STREET - Site Code: 435675 Site Code: 567066	***2 INGRAHAM ST***	***WSW 1/8 - 1/4 (0.137 mi.)***	***P93***	***258***

Lower Elevation	Address	Direction / Distance	Map ID	Page
353 MCKIBBIN STREET Site Code: 446405 Site Code: 333585	***353 MCKIBBIN STREET***	***WSW 1/8 - 1/4 (0.222 mi.)***	***AC206***	***539***
FORMER UNIVERSAL SCR Site Code: 505316	***1181 FLUSHING AVENUE***	***ESE 1/4 - 1/2 (0.251 mi.)***	***AF265***	***760***
FRITO LAY Site Code: 407689	***202-218 MORGAN AVENU***	***NW 1/4 - 1/2 (0.280 mi.)***	***AN272***	***790***
255 RANDOLPH STREET Site Code: 534911	255 RANDOLPH STREET	ENE 1/4 - 1/2 (0.449 mi.)	AV312	940

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Landfill / Solid Waste Disposal Sites

Registered Recycling Facility List from the Department of Environmental Conservation.

A review of the NY SWRCY list, as provided by EDR, and dated 12/31/2018 has revealed that there are 8

NY SWRCY sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
GALANTE; INC.	144 NOLL STREET	S 1/4 - 1/2 (0.307 mi.)	AO277	836

Lower Elevation	Address	Direction / Distance	Map ID	Page
WASTE MANAGEMENT OF	***101 VARICK AVE***	***NE 0 - 1/8 (0.098 mi.)***	***K74***	***216***
HI TECH HOLDINGS LLC	492 SCHOLES STREET	NNE 1/4 - 1/2 (0.253 mi.)	267	784
MESEROLE STREET RECY	568 MESEROLE STREET	NE 1/4 - 1/2 (0.377 mi.)	AR291	872
ALLOCCO RECYCLING (6	606 MESEROLE STREET	NE 1/4 - 1/2 (0.409 mi.)	AR299	900
BROWNING FERRIS	***72 SCOTT AVE***	***ENE 1/4 - 1/2 (0.422 mi.)***	***AV302***	***904***
ALLOCCO RECYCLING LT	***575 SCHOLES STREET***	***NE 1/4 - 1/2 (0.423 mi.)***	***AW303***	***918***
BFI (598-636 SCHOLES	***598-636 SCHOLES STRE***	***NE 1/4 - 1/2 (0.440 mi.)***	***AW309***	***935***

Records of Emergency Release Reports

NY Spills: Data collected on spills reported to NYSDEC. is required by one or more of the following: Article 12 of the Navigation Law, 6 NYCRR Section 613.8 (from PBS regs), or 6 NYCRR Section 595.2 (from CBS regs). It includes spills active as of April 1, 1986, as well as spills occurring since this date.

A review of the NY Spills list, as provided by EDR, and dated 05/13/2019 has revealed that there are 13 NY Spills sites within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SPILL NUMBER 0406955 Spill Number/Closed Date: 0406955 / 2004-09-24 Site ID: 83795 Spill Date: 2004-09-22	KNICKERBOCKER/INGRAM	SSW 0 - 1/8 (0.042 mi.)	D21	75
IFO AUTO RADIATOR Spill Number/Closed Date: 0207179 / 2002-10-11 Site ID: 298995 Spill Date: 2002-10-10	3 KNICKERBOCKER AVE	W 0 - 1/8 (0.045 mi.)	B24	85

Lower Elevation	Address	Direction / Distance	Map ID	Page
INGRAHM STREET Spill Number/Closed Date: 0513812 / 2006-03-10 Site ID: 360360 Spill Date: 2006-03-02	INGRAHM STREET/PORTE	E 0 - 1/8 (0.062 mi.)	E33	104
KNICKERBOCKER & JOHN Spill Number/Closed Date: 9501020 / 1995-04-25 Site ID: 60430 Spill Date: 1995-04-24	KNICKERBOCKER AVE #6	W 0 - 1/8 (0.062 mi.)	B35	106
CENTER FOR OPPORTUNI Spill Number/Closed Date: 0812527 / 2009-02-19 Site ID: 410148 Spill Date: 2009-02-17	89 PORTER AVE	ENE 0 - 1/8 (0.074 mi.)	E43	153
SPILL NUMBER 0303242 Spill Number/Closed Date: 0303242 / 2003-08-18 Site ID: 170448	MORGAN AV/JOHNSON AV	W 0 - 1/8 (0.074 mi.)	G44	154

Spill Date: 2003-06-26

0282-BOX Spill Number/Closed Date: 0600727 / 2006-04-20 Site ID: 362799 Spill Date: 2006-04-19	MORGAN /JOHNSON AVE	W 0 - 1/8 (0.074 mi.)	G45	155
VAULT 7037 Spill Number/Closed Date: 0303199 / 2003-08-18 Site ID: 320774 Spill Date: 2003-06-25	MORGAN AVE& JOHNSON	W 0 - 1/8 (0.074 mi.)	G46	156
VAULT 3640 Spill Number/Closed Date: 0308984 / 2003-12-22 Site ID: 222845 Spill Date: 2003-11-23	MORGAN AVE & JOHNSON	W 0 - 1/8 (0.074 mi.)	G47	157
FED EX Spill Number/Closed Date: 1807604 / 2018-11-20 Site ID: 578371 Spill Date: 2018-10-16	100 MORGAN AVE	WNW 0 - 1/8 (0.094 mi.)	J69	206
WASTE MANAGEMENT OF Spill Number/Closed Date: 0012799 / 2001-03-05 Spill Number/Closed Date: 1001432 / 2010-09-02 Site ID: 329115 Site ID: 434486 Spill Date: 2001-03-03 Spill Date: 2010-05-06	***101 VARICK AVE***	***NE 0 - 1/8 (0.098 mi.)***	***K74***	***216***
388 JOHNSON AVE. Spill Number/Closed Date: 9208256 / 2010-02-05 Site ID: 96172 Spill Date: 1992-09-16	388 JOHNSON AVE	W 0 - 1/8 (0.112 mi.)	G80	229
MOOTCH & MUCK DIST. Spill Number/Closed Date: 9606468 / 1996-08-20 Site ID: 212184 Spill Date: 1996-08-20	134 MORGAN AVE	NW 0 - 1/8 (0.119 mi.)	J84	238

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 03/25/2019 has revealed that there are 67 RCRA NonGen / NLR sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BASIC ADHESIVES INC EPA ID:: NYD072749104	***25 KNICKERBOCKER AVE***	***WSW 0 - 1/8 (0.030 mi.)***	***B14***	***56***
CON EDISON SERVICE B EPA ID:: NYP004361614	***104 HARRISON PL***	***SE 0 - 1/8 (0.072 mi.)***	***F39***	***146***
MILHAN REALTY CORP	***40 INGRAHAM ST***	***WSW 0 - 1/8 (0.081 mi.)***	***H52***	***171***

EPA ID:: NYD986974392				
CON EDISON	***54 HARRISON PL***	***SSW 0 - 1/8 (0.081 mi.)***	***D56***	***179***
EPA ID:: NYP004736997				
CON EDISON SERVICE B	***99 MORGAN AVE***	***WSW 0 - 1/8 (0.087 mi.)***	***G58***	***183***
EPA ID:: NYP004357158				
CON EDISON	89 GRATTAN ST	SSE 0 - 1/8 (0.088 mi.)	F61	188
EPA ID:: NYP004828754				
CON EDISON SERVICE B	103 GRATTAN ST	SSE 0 - 1/8 (0.093 mi.)	F65	198
EPA ID:: NYP004577177				
CON EDISON SERVICE B	23 INGRAHAM ST	WSW 0 - 1/8 (0.110 mi.)	H79	228
EPA ID:: NYP004510293				
CON EDISON SERVICE B	60 GRATTAN ST	S 0 - 1/8 (0.114 mi.)	I81	230
EPA ID:: NYP004541587				
CON EDISON SERVICE B	36 PORTER AVE	SE 1/8 - 1/4 (0.126 mi.)	N87	243
EPA ID:: NYP004544003				
CON EDISON SERVICE B	***95 THAMES ST***	***SSE 1/8 - 1/4 (0.138 mi.)***	***N94***	***266***
EPA ID:: NYP004489514				
CON EDISON SERVICE B	97 THAMES ST	SSE 1/8 - 1/4 (0.141 mi.)	N99	275
EPA ID:: NYP004489605				
BROWNING FERRIS INDU	***105-115 THAMES ST***	***SSE 1/8 - 1/4 (0.143 mi.)***	***N100***	***276***
EPA ID:: NYR000064568				
CON EDISON MANHOLE:	105 THAMES ST	SSE 1/8 - 1/4 (0.143 mi.)	N101	278
EPA ID:: NYP004554564				
CON EDISON SERVICE B	105 THAMES ST	SSE 1/8 - 1/4 (0.143 mi.)	N104	282
EPA ID:: NYP004489613				
CON EDISON SERVICE B	47 THAMES ST	S 1/8 - 1/4 (0.144 mi.)	Q108	288
EPA ID:: NYP004489597				
CON EDISON MANHOLE:	33 VARICK AVE	ESE 1/8 - 1/4 (0.151 mi.)	M113	296
EPA ID:: NYP004508990				
CON EDISON SERVICE B	***17 GRATTAN ST***	***SW 1/8 - 1/4 (0.152 mi.)***	***S114***	***297***
EPA ID:: NYP004517504				
CON EDISON MANHOLE 5	THAMES ST & VANDERVO	S 1/8 - 1/4 (0.153 mi.)	Q118	303
EPA ID:: NYP004139879				
CON EDISON MANHOLE:	***PORTER AVE & THAMES***	***SE 1/8 - 1/4 (0.161 mi.)***	***N124***	***312***
EPA ID:: NYP004531380				
CON EDISON	***125 THAMES ST***	***SE 1/8 - 1/4 (0.164 mi.)***	***N126***	***314***
EPA ID:: NYP004815615				
CON EDISON SERVICE B	***125 THAMES ST***	***SE 1/8 - 1/4 (0.164 mi.)***	***N127***	***316***
EPA ID:: NYP004459764				
CON EDISON	***18 GRATTAN ST***	***SW 1/8 - 1/4 (0.166 mi.)***	***S128***	***319***
EPA ID:: NYP004782272				
CON EDISON SERVICE B	***MORGAN AVE & THAMES***	***SSW 1/8 - 1/4 (0.170 mi.)***	***Q137***	***349***
EPA ID:: NYP004494712				
CON EDISON SERVICE B	52 THAMES ST	S 1/8 - 1/4 (0.173 mi.)	Q140	353
EPA ID:: NYP004489621				
CON EDISON SERVICE B	***52 THAMES ST***	***S 1/8 - 1/4 (0.173 mi.)***	***Q141***	***354***

EPA ID:: NYP004544029				
CON EDISON SERVICE B EPA ID:: NYP004486569	***120 KNICKERBOCKER AV***	***SSE 1/8 - 1/4 (0.183 mi.)***	***U146***	***364***
AINSLEY LAMP MAN CO EPA ID:: NYD001385848	***1099 FLUSHING AVE***	***SE 1/8 - 1/4 (0.185 mi.)***	***V149***	***368***
CON EDISON SERVICE B EPA ID:: NYP004489589	26 MORGAN AVE	SSW 1/8 - 1/4 (0.185 mi.)	Q150	371
OCEAN CASKET CO INC EPA ID:: NYD001323336	***17 THAMES ST***	***SSW 1/8 - 1/4 (0.187 mi.)***	***S155***	***382***
CON EDISON SERVICE B EPA ID:: NYP004577011	***1115 FLUSHING AVE***	***SE 1/8 - 1/4 (0.189 mi.)***	***V157***	***385***
CON EDISON MANHOLE: EPA ID:: NYP004529459	16 MORGAN AVE	S 1/8 - 1/4 (0.206 mi.)	AB187	488
CON EDISON SERVICE B EPA ID:: NYP004486551	12 MORGAN AVE	S 1/8 - 1/4 (0.217 mi.)	AB192	498
CON EDISON SERVICE B EPA ID:: NYP004483798	40 BOGART ST	SW 1/8 - 1/4 (0.217 mi.)	AE197	505
CON EDISON EPA ID:: NYP004799755	157 GEORGE ST OPP OF	SSE 1/8 - 1/4 (0.222 mi.)	U209	587
HYGIENE INDUSTRIES D EPA ID:: NYD986912947	***1177 FLUSHING AVE***	***ESE 1/8 - 1/4 (0.230 mi.)***	***AF217***	***649***
CON EDISON MANHOLE 5 EPA ID:: NYP004141511	***IRVING AVE & MELROSE***	***ESE 1/8 - 1/4 (0.231 mi.)***	***W220***	***655***
CON EDISON SERVICE B EPA ID:: NYP004497079	***139 GEORGE ST***	***SSE 1/8 - 1/4 (0.235 mi.)***	***AH234***	***694***
CON EDISON MANHOLE: EPA ID:: NYP004490074	***156 GEORGE ST***	***SSE 1/8 - 1/4 (0.241 mi.)***	***AG239***	***701***
CON EDISON EPA ID:: NYP004845414	28 BOGART ST	SSW 1/8 - 1/4 (0.244 mi.)	AE241	704
CON EDISON SERVICE B EPA ID:: NYP004371662	***1006 FLUSHING AVE***	***S 1/8 - 1/4 (0.245 mi.)***	***AB244***	***708***
CON EDISON EPA ID:: NYP004766697	***WILSON AVE & FLUSHIN***	***S 1/8 - 1/4 (0.245 mi.)***	***AB245***	***711***
CON EDISON MANHOLE: EPA ID:: NYP004495180	FLUSHING AVE & MORGA	S 1/8 - 1/4 (0.245 mi.)	AB250	717
FRANK BRUNCKHORST CO EPA ID:: NYR000019158	***24 ROCK ST***	***SSW 1/8 - 1/4 (0.246 mi.)***	***AJ253***	***724***
CON EDISON SERVICE B EPA ID:: NYP004488672	154 KNICKERBOCKER AV	SSE 1/8 - 1/4 (0.246 mi.)	AG256	732

Lower Elevation	Address	Direction / Distance	Map ID	Page
TWENTIETH CENTURY CO EPA ID:: NYD001532126	***474 JOHNSON AVE***	***NE 0 - 1/8 (0.019 mi.)***	***A11***	***49***
VANGUARD ENVIRONMENT EPA ID:: NYR000195388	465 JOHNSON AVE	NNE 0 - 1/8 (0.029 mi.)	C13	54
ROBINWOOD MFG CO	1 KNICKERBOCKER AVE	W 0 - 1/8 (0.044 mi.)	B23	83

EPA ID:: NYD987016219				
VERIZON MANHOLE 262 EPA ID:: NYP000963280	JOHNSON & PORTER AVE	ENE 0 - 1/8 (0.061 mi.)	C30	101
CON EDISON - VS 7037 EPA ID:: NYP004112298	***E/S MORGAN JAVE. 114***	***W 0 - 1/8 (0.076 mi.)***	***G48***	***159***
ENVELOPE CONVERTORS EPA ID:: NYD001360635	***100 MORGAN AVE***	***WNW 0 - 1/8 (0.094 mi.)***	***J68***	***201***
FOROX TECHNICAL CORP EPA ID:: NYD115218257	***154 MORGAN AVE***	***NW 1/8 - 1/4 (0.161 mi.)***	***R122***	***309***
RAVENWARE CO INC EPA ID:: NYD001255637	***360 SCHOLES ST***	***NW 1/8 - 1/4 (0.193 mi.)***	***R159***	***389***
CON EDISON EPA ID:: NYP004741039	VARICK & MESEROLE ST	NNE 1/8 - 1/4 (0.197 mi.)	X168	423
CON EDISON EPA ID:: NYP004779476	***VARICK ST & MESEROLE***	***NNE 1/8 - 1/4 (0.197 mi.)***	***X172***	***430***
CON EDISON EPA ID:: NYP004741005	***VARICK AND MESEROLE***	***NNE 1/8 - 1/4 (0.197 mi.)***	***X173***	***432***
SERVICE PRINTS LTD EPA ID:: NYD982182149	***1 GRATHAM ST***	***SW 1/8 - 1/4 (0.197 mi.)***	***S175***	***434***
CON EDISON SERVICE B EPA ID:: NYP004508156	***338 JOHNSON AVE***	***W 1/8 - 1/4 (0.205 mi.)***	***AA185***	***486***
WOOD-TEX PANELS INC EPA ID:: NYD001641489	***108 VARICK STREET***	***NE 1/8 - 1/4 (0.210 mi.)***	***T189***	***491***
HI-TECH RESOURCE REC EPA ID:: NYN008014441	130 VARICK AVE	NNE 1/8 - 1/4 (0.217 mi.)	X195	502
NYC DEPT OF SANITATI EPA ID:: NYD982529703	***525 JOHNSON AVE BK-N***	***ENE 1/8 - 1/4 (0.218 mi.)***	***Z199***	***524***
MORGAN OIL TERMINALS EPA ID:: NYD074359472	***200 MORGAN AVE***	***NNW 1/8 - 1/4 (0.229 mi.)***	***Y216***	***641***
CON EDISON MANHOLE: EPA ID:: NYP004522322	317 BOERUM ST	WSW 1/8 - 1/4 (0.230 mi.)	AA219	654
CON EDISON EPA ID:: NYP004161857	***SCHOLES & VARICK***	***NNE 1/8 - 1/4 (0.233 mi.)***	***X223***	***676***
CON EDISON EPA ID:: NYP004764395	MORGAN AVE & STAGG S	NW 1/8 - 1/4 (0.234 mi.)	Y226	681
CON EDISON EPA ID:: NYP004756722	MORGAN AVE & STAGG S	NW 1/8 - 1/4 (0.234 mi.)	Y227	682
CON EDISON EPA ID:: NYP004185880	***328 JOHNSON AVE & WH***	***W 1/8 - 1/4 (0.249 mi.)***	***AA264***	***757***

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal

Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 02/15/2019 has revealed that there is 1 FINDS site within approximately 0.001 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
LW SLEEPWELL INC-456 Registry ID:: 110019511456	456-474 JOHNSON AVEN	0 - 1/8 (0.000 mi.)	A3	13

NY DRYCLEANERS: A listing of all registered drycleaning facilities.

A review of the NY DRYCLEANERS list, as provided by EDR, and dated 11/05/2018 has revealed that there are 2 NY DRYCLEANERS sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
POPULAR UNIFORM Facility Id: 2-6104-01034	88 INGRAHAM STREET #	SSE 0 - 1/8 (0.014 mi.)	A4	13
FLUSHING DRY CLEANER Facility Id: 2-6104-00998	1065 FLUSHING AVENUE	S 1/8 - 1/4 (0.197 mi.)	U174	434

NY HSWDS: The List includes any known or suspected hazardous substance waste disposal sites. Also included are sites delisted from the Registry of Inactive Hazardous Waste Disposal Sites and non-registry sites that U.S. EPA Preliminary Assessment (PA) reports or Site Investigation (SI) reports were prepared. Hazardous Substance Waste Disposal Sites are eligible to be Superfund sites now that the New York State Superfund has been refinanced and changed. This means that the study inventory has served its purpose and will no longer be maintained as a separate entity The latest version of the study is frozen in time. The sites on the study will not automatically be made superfund sites, rather each site will be further evaluated for listing in the registry. So overtime they will be added to the registry or not.

A review of the NY HSWDS list, as provided by EDR, and dated 01/01/2003 has revealed that there are 3 NY HSWDS sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
FORMER JAYER PLATING Facility Id: HS2044	2 INGRAHAM STREET	WSW 1/8 - 1/4 (0.137 mi.)	P92	256

Lower Elevation	Address	Direction / Distance	Map ID	Page
MORGAN TERMINAL	200 MORGAN AVE	WNW 1/8 - 1/4 (0.130 mi.)	J91	254
VARICK AVENUE Facility Id: HS2043	165 VARICK AVENUE	NNE 1/4 - 1/2 (0.254 mi.)	AM269	786

EXECUTIVE SUMMARY

NY MANIFEST: Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

A review of the NY MANIFEST list, as provided by EDR, and dated 01/01/2019 has revealed that there are 89 NY MANIFEST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
88 INGRAHAM REALTY C EPA ID: NYD020592838	***88 INGRAHAM ST***	***SSE 0 - 1/8 (0.014 mi.)***	***A6***	***15***
AMERICAN MEDICAL RES EPA ID: NYR000078105	***78 INGRAHAM ST***	***SSW 0 - 1/8 (0.015 mi.)***	***A10***	***46***
CON EDISON EPA ID: NYP004712659	428 JOHNSON AV	W 0 - 1/8 (0.021 mi.)	B12	53
BASIC ADHESIVES INC EPA ID: NYD072749104	***25 KNICKERBOCKER AVE***	***WSW 0 - 1/8 (0.030 mi.)***	***B14***	***56***
NYSDEC #224142 - ING EPA ID: NYR000180075	***KNICKERBOCKER AVE &***	***WSW 0 - 1/8 (0.048 mi.)***	***B25***	***86***
CON EDISON SERVICE B EPA ID: NYP004361614	***104 HARRISON PL***	***SE 0 - 1/8 (0.072 mi.)***	***F39***	***146***
CON EDISON EPA ID: NYP004551313	104 HARRISON PL	SE 0 - 1/8 (0.072 mi.)	F40	148
MILHAN REALTY CORP EPA ID: NYD986974392	***40 INGRAHAM ST***	***WSW 0 - 1/8 (0.081 mi.)***	***H52***	***171***
CON EDISON EPA ID: NYP004736997	54 HARRISON PL	SSW 0 - 1/8 (0.081 mi.)	D54	177
CON EDISON SERVICE B EPA ID: NYP004357158	***99 MORGAN AVE***	***WSW 0 - 1/8 (0.087 mi.)***	***G58***	***183***
CON EDISON EPA ID: NYP004368031	99 MORGAN AVE	WSW 0 - 1/8 (0.087 mi.)	G59	185
CON ED EPA ID: NYP004828754	89 GRATTAN ST	SSE 0 - 1/8 (0.088 mi.)	F60	187
CON EDISON EPA ID: NYP004577177	103 GRATTAN ST	SSE 0 - 1/8 (0.093 mi.)	F66	199
MTA NYCT - MORGAN AV EPA ID: NYR000163543	HARRISON PLACE & MOR	SW 0 - 1/8 (0.097 mi.)	H71	212
CON EDISON EPA ID: NYP004510293	23 INGRAHAM ST	WSW 0 - 1/8 (0.110 mi.)	H78	227
CON EDISON EPA ID: NYP004653630 EPA ID: NYP004541587	60 GRATTAN ST	S 0 - 1/8 (0.114 mi.)	I82	231
CON EDISON EPA ID: NYP004500989 EPA ID: NYP004544003	36 PORTER AV	SE 1/8 - 1/4 (0.126 mi.)	N88	244
CON EDISION EPA ID: NYP004489514	95 THAMES ST	SSE 1/8 - 1/4 (0.138 mi.)	N95	267
CON EDISON EPA ID: NYP004489605	97 THAMES ST	SSE 1/8 - 1/4 (0.141 mi.)	N98	274
CON EDISON	105 THAMES ST	SSE 1/8 - 1/4 (0.143 mi.)	N102	279

EPA ID: NYP004554564				
CON EDISON EPA ID: NYP004489613	105 THAMES ST	SSE 1/8 - 1/4 (0.143 mi.)	N103	281
CON EDISON EPA ID: NYP004489597	47 THAMES ST	S 1/8 - 1/4 (0.144 mi.)	Q106	284
CON EDISON EPA ID: NYP004508990	33 VARICK AVE	ESE 1/8 - 1/4 (0.151 mi.)	M112	295
CON EDISON EPA ID: NYP004517504	17 GRATTAN ST	SW 1/8 - 1/4 (0.152 mi.)	S115	298
CONSOLIDATED EDISON EPA ID: NYP004150785	VANDERVOORT PL & THA	S 1/8 - 1/4 (0.153 mi.)	Q116	300
CONSOLIDATED EDISON EPA ID: NYP004134417	VANDERVOORT PL & THA	S 1/8 - 1/4 (0.153 mi.)	Q117	301
CON EDISON SERVICE B EPA ID: NYP004815615 EPA ID: NYP004459764	***125 THAMES ST***	***SE 1/8 - 1/4 (0.164 mi.)***	***N127***	***316***
CON EDISON EPA ID: NYP004782272	18 GRATTAN ST	SW 1/8 - 1/4 (0.166 mi.)	S130	322
CON EDISON EPA ID: NYP004494712	MORGAN AVE & THAMES	SSW 1/8 - 1/4 (0.170 mi.)	Q138	350
CON EDISON EPA ID: NYP004544029	52 THAMES ST	S 1/8 - 1/4 (0.173 mi.)	Q139	352
CON EDISION EPA ID: NYP004489621	52 THAMES ST	S 1/8 - 1/4 (0.173 mi.)	Q142	355
CON EDISON EPA ID: NYP004486569	120 KNICKERBOCKER AV	SSE 1/8 - 1/4 (0.183 mi.)	U145	363
CON EDISON - MANHOLE EPA ID: NYP004894628	1087 FLUSHING AVE	SSE 1/8 - 1/4 (0.183 mi.)	U147	365
AINSLEY LAMP MAN CO EPA ID: NYD001385848	***1099 FLUSHING AVE***	***SE 1/8 - 1/4 (0.185 mi.)***	***V149***	***368***
CON EDISON EPA ID: NYP004489589	26 MORGAN AVE	SSW 1/8 - 1/4 (0.185 mi.)	Q151	372
CON EDISON EPA ID: NYP004624896	141 THAMES ST	SE 1/8 - 1/4 (0.187 mi.)	W153	377
CON EDISON EPA ID: NYP004851586 EPA ID: NYP004577011	1115 FLUSHING AVE	SE 1/8 - 1/4 (0.189 mi.)	V158	386
NYNEX EPA ID: NYP000931741	FLUSHING AVE & POTTE	SSE 1/8 - 1/4 (0.196 mi.)	V163	416
CON EDISON EPA ID: NYP004529459	16 MORGAN AVE	S 1/8 - 1/4 (0.206 mi.)	AB186	487
CON EDISON EPA ID: NYP004486551	12 MORGAN AVE	S 1/8 - 1/4 (0.217 mi.)	AB193	499
CON EDISON EPA ID: NYP004483798	40 BOGART ST	SW 1/8 - 1/4 (0.217 mi.)	AE196	503
CON EDISON EPA ID: NYP004799755	157 GEORGE ST	SSE 1/8 - 1/4 (0.222 mi.)	U208	586
HYGIENE INDUSTRIES D	***1177 FLUSHING AVE***	***ESE 1/8 - 1/4 (0.230 mi.)***	***AF217***	***649***

EPA ID: NYD986912947				
CON EDISON MANHOLE 5 EPA ID: NYP004141511	***IRVING AVE & MELROSE***	***ESE 1/8 - 1/4 (0.231 mi.)***	***W220***	***655***
CON EDISON EPA ID: NYP004497079	139 GEORGE ST	SSE 1/8 - 1/4 (0.235 mi.)	AH233	693
CON EDISION EPA ID: NYP004490074	156 GEORGE ST	SSE 1/8 - 1/4 (0.241 mi.)	AG238	700
CON EDISON EPA ID: NYP004845414	28 BOGART ST	SSW 1/8 - 1/4 (0.244 mi.)	AE242	705
CON EDISON EPA ID: NYP004573903	1006 FLUSHING AVE	S 1/8 - 1/4 (0.245 mi.)	AB243	707
CON EDISON SERVICE B EPA ID: NYP004371662	***1006 FLUSHING AVE***	***S 1/8 - 1/4 (0.245 mi.)***	***AB244***	***708***
CON EDISON EPA ID: NYP004766697	WILSON AVE & FLUSHIN	S 1/8 - 1/4 (0.245 mi.)	AB247	713
CON EDISON EPA ID: NYP004495180	FLUSHING AVE & MORGA	S 1/8 - 1/4 (0.245 mi.)	AB248	715
NYNEX EPA ID: NYP000916072	FLUSHING & MORGAN AV	S 1/8 - 1/4 (0.245 mi.)	AB249	716
FRANK BRUNCKHORST CO EPA ID: NYR000019158	***24 ROCK ST***	***SSW 1/8 - 1/4 (0.246 mi.)***	***AJ253***	***724***
CON EDISON EPA ID: NYP004488672	154 KNICKERBOCKER AV	SSE 1/8 - 1/4 (0.246 mi.)	AG255	731

Lower Elevation	Address	Direction / Distance	Map ID	Page
TWENTIETH CENTURY CO EPA ID: NYD001532126	***474 JOHNSON AVE***	***NE 0 - 1/8 (0.019 mi.)***	***A11***	***49***
CON EDISON EPA ID: NYP004661385	486 JOHNSON AVE	ENE 0 - 1/8 (0.041 mi.)	C20	73
CON EDISON EPA ID: NYP004700027	JOHNSON AVE & PORTER	ENE 0 - 1/8 (0.061 mi.)	C31	102
CON EDISON EPA ID: NYP004670027	JOHNSON & PORTER AV	ENE 0 - 1/8 (0.061 mi.)	C32	103
CORNISH KNIT GOODS EPA ID: NYD001683457	***PORTER AVE***	***E 0 - 1/8 (0.064 mi.)***	***E37***	***108***
CON EDISON - VS 7037 EPA ID: NYP004112298	***E/S MORGAN JAVE. 114***	***W 0 - 1/8 (0.076 mi.)***	***G48***	***159***
ENVELOPE CONVERTORS EPA ID: NYD001360635	***100 MORGAN AVE***	***WNW 0 - 1/8 (0.094 mi.)***	***J68***	***201***
NYNEX EPA ID: NYP000923458	MESSEROLE ST & MORGA	NW 1/8 - 1/4 (0.144 mi.)	R109	289
CON EDISON - TRANSFO EPA ID: NYP005007624	VARICK AVE & HARRISO	ESE 1/8 - 1/4 (0.157 mi.)	M120	308
CON EDISON EPA ID: NYP004287884	VARICK AVE	NE 1/8 - 1/4 (0.168 mi.)	T131	323
ENEQUIST CHEMICAL CO	***100 VARICK AVE.***	***NE 1/8 - 1/4 (0.169 mi.)***	***T135***	***329***

EPA ID: NYD002028827				
CONSOLIDATED EDISON EPA ID: NYP004122073	SEIGEL ST & BOGART S	SW 1/8 - 1/4 (0.189 mi.)	S156	384
WASTE MANAGEMENT OF EPA ID: NYD982744815	***123 VARICK AVE***	***NNE 1/8 - 1/4 (0.196 mi.)***	***X160***	***392***
COOPER RECYCLING COR EPA ID: NYP000889022	***123 VARICK AVENUE***	***NNE 1/8 - 1/4 (0.196 mi.)***	***X161***	***400***
CON EDISON EPA ID: NYP004779625	VARICK ST & MESEROLE	NNE 1/8 - 1/4 (0.197 mi.)	X164	417
CON EDISON EPA ID: NYP004741039	VARICK & MESEROLE ST	NNE 1/8 - 1/4 (0.197 mi.)	X165	419
CON EDISON EPA ID: NYP004779476	VARICK ST & MESEROLE	NNE 1/8 - 1/4 (0.197 mi.)	X166	420
CON EDISON EPA ID: NYP004741005	VARICK AND MESEROLE	NNE 1/8 - 1/4 (0.197 mi.)	X167	422
CON EDISON EPA ID: NYP004741047	VARICK & MESEROLE ST	NNE 1/8 - 1/4 (0.197 mi.)	X169	425
SERVICE PRINTS LTD EPA ID: NYD982182149	***1 GRATHAM ST***	***SW 1/8 - 1/4 (0.197 mi.)***	***S175***	***434***
THE PRINTHOUSE INC EPA ID: NYR000143248	***538 JOHNSON AVE***	***ENE 1/8 - 1/4 (0.204 mi.)***	***Z180***	***461***
ARCHITECTURAL COATIN EPA ID: NYR000168104	***538 JOHNSON AVE - GR***	***ENE 1/8 - 1/4 (0.204 mi.)***	***Z181***	***472***
CON EDISON EPA ID: NYP004508156	338 JOHNSON AVE	W 1/8 - 1/4 (0.205 mi.)	AA184	484
WOOD-TEX PANELS INC EPA ID: NYD001641489	***108 VARICK STREET***	***NE 1/8 - 1/4 (0.210 mi.)***	***T189***	***491***
CON EDISON EPA ID: NYP004715157	179 MORGAN AVE	NW 1/8 - 1/4 (0.219 mi.)	Y200	525
RAINBOW POLYBAG-MORG EPA ID: NYD084090414	***179 MORGAN AVE***	***NW 1/8 - 1/4 (0.219 mi.)***	***Y203***	***530***
NYC DEP HAZ MAT EPA ID: NYP003662657	***200 MORGAN AVENUE***	***NNW 1/8 - 1/4 (0.229 mi.)***	***Y215***	***603***
MORGAN OIL TERMINALS EPA ID: NYD074359472	***200 MORGAN AVE***	***NNW 1/8 - 1/4 (0.229 mi.)***	***Y216***	***641***
CON EDISON EPA ID: NYP004522322	317 BOERUM ST	WSW 1/8 - 1/4 (0.230 mi.)	AA218	653
CON EDISON EPA ID: NYP004161857	***SCHOLES & VARICK***	***NNE 1/8 - 1/4 (0.233 mi.)***	***X223***	***676***
CON EDISON EPA ID: NYP004756722 EPA ID: NYP004764395	MORGAN AVE & STAGG S	NW 1/8 - 1/4 (0.234 mi.)	Y228	683
CON EDISON EPA ID: NYP004735478	STAGG ST & MORGAN AV	NW 1/8 - 1/4 (0.234 mi.)	Y230	687
CON EDISON - MANHOLE EPA ID: NYP005152632	333 SCHOLES ST	WNW 1/8 - 1/4 (0.237 mi.)	AD235	696
NYC DEPART OF SANITA	***VARICK AVE***	***NNE 1/8 - 1/4 (0.249 mi.)***	***AM262***	***750***

EPA ID: NYR000109116

CON EDISON	***328 JOHNSON AVE & WH***	***W 1/8 - 1/4 (0.249 mi.)***	***AA264***	***757***
EPA ID: NYP004185880				

NJ MANIFEST: Hazardous waste manifest information.

A review of the NJ MANIFEST list, as provided by EDR, and dated 12/31/2018 has revealed that there are 18 NJ MANIFEST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
AMERICAN MEDICAL RES EPA Id: NYR000078105	78 INGRAHAM STREET	SSW 0 - 1/8 (0.015 mi.)	A9	36
CON EDISON EPA Id: NYP004736997	54 HARRISON PL	SSW 0 - 1/8 (0.081 mi.)	D55	178
CON EDISON EPA Id: NYP004828754	89 GRATTAN ST	SSE 0 - 1/8 (0.088 mi.)	F62	189
MTA NYCT - MORGAN AV EPA Id: NYR000163543	HARRISON PLACE & MOR	SW 0 - 1/8 (0.097 mi.)	H73	215
CON EDISON EPA Id: NYP004815615	125 THAMES ST	SE 1/8 - 1/4 (0.164 mi.)	N125	313
CON EDISON EPA Id: NYP004782272	18 GRATTAN ST	SW 1/8 - 1/4 (0.166 mi.)	S129	320
CON EDISON EPA Id: NYP004799755	157 GEORGE ST OPP OF	SSE 1/8 - 1/4 (0.222 mi.)	U207	584
CON EDISON EPA Id: NYP004845414	28 BOGART ST	SSW 1/8 - 1/4 (0.244 mi.)	AE240	703
CON EDISON EPA Id: NYP004766697	WILSON AVE & FLUSHIN	S 1/8 - 1/4 (0.245 mi.)	AB246	712

Lower Elevation	Address	Direction / Distance	Map ID	Page
ENEQUIST CHEMICAL CO EPA Id: NYD002028827	***100 VARICK AVE.***	***NE 1/8 - 1/4 (0.169 mi.)***	***T135***	***329***
WASTE MANAGEMENT OF EPA Id: NYD982744815	***123 VARICK AVE***	***NNE 1/8 - 1/4 (0.196 mi.)***	***X160***	***392***
CON EDISON EPA Id: NYP004779625	W SIDE VARICK ST	NNE 1/8 - 1/4 (0.197 mi.)	X170	426
CON EDISON EPA Id: NYP004741039 EPA Id: NYP004741005	VARICK & MESEROLE ST	NNE 1/8 - 1/4 (0.197 mi.)	X171	427
THE PRINTHOUSE INC EPA Id: NYR000143248	***538 JOHNSON AVE***	***ENE 1/8 - 1/4 (0.204 mi.)***	***Z180***	***461***
CON EDISON - SERVICE EPA Id: NYP004715157	179 MORGAN AVE	NW 1/8 - 1/4 (0.219 mi.)	Y202	529
CON EDISON - MANHOLE EPA Id: NYP004735478	STAGG ST & MORGAN AV	NW 1/8 - 1/4 (0.234 mi.)	Y224	678
CON EDISON	MORGAN AVE & STAGG S	NW 1/8 - 1/4 (0.234 mi.)	Y229	686

EPA Id: NYP004764395

CON EDISON	***328 JOHNSON AVE & WH***	***W 1/8 - 1/4 (0.249 mi.)***	***AA264***	***757***
EPA Id: NYP004185880				

PA MANIFEST: Hazardous waste manifest information.

A review of the PA MANIFEST list, as provided by EDR, and dated 12/31/2017 has revealed that there are 6 PA MANIFEST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
88 INGRAHAM REALTY C Generator EPA Id: NYD020592838	88 INGRAHAM ST	SSE 0 - 1/8 (0.014 mi.)	A5	13

Lower Elevation	Address	Direction / Distance	Map ID	Page
PETER JAY SHARP CENT Generator EPA Id: NYD001683457	89 W PORTER AVENUE	ENE 0 - 1/8 (0.074 mi.)	E42	152
ENEQUIST CHEMICAL CO Generator EPA Id: NYD002028827	***100 VARICK AVE.***	***NE 1/8 - 1/4 (0.169 mi.)***	***T135***	***329***
WASTE MANAGEMENT OF Generator EPA Id: NYD982744815	***123 VARICK AVE***	***NNE 1/8 - 1/4 (0.196 mi.)***	***X160***	***392***
ARCHITECTURAL COATIN Generator EPA Id: NYR000168104	538 JOHNSON AVENUE	ENE 1/8 - 1/4 (0.204 mi.)	Z182	475
THE PURCHASE INC Generator EPA Id: NYR000143248	538 JOHNSON AVE	ENE 1/8 - 1/4 (0.204 mi.)	Z183	480

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

A review of the EDR MGP list, as provided by EDR, has revealed that there are 3 EDR MGP sites within approximately 1 mile of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SCHOLES ST. STATION	SCHOLES ST 7 BOGART	WNW 1/8 - 1/4 (0.212 mi.)	AD191	498
EQUITY WORKS	MASPETH AND VANDERVO	NNW 1/2 - 1 (0.641 mi.)	328	989
GREENPOINT	287 MASPETH AVENUE	N 1/2 - 1 (0.862 mi.)	BB331	1017

EXECUTIVE SUMMARY

EDR Hist Auto: EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR Hist Auto list, as provided by EDR, has revealed that there is 1 EDR Hist Auto site within approximately 0.125 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
IDEAL SERVICENTER	66 KNICKERBOCKER AV	SSW 0 - 1/8 (0.090 mi.)	I63	190

EDR Hist Cleaner: EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

A review of the EDR Hist Cleaner list, as provided by EDR, has revealed that there is 1 EDR Hist Cleaner site within approximately 0.125 miles of the target property.

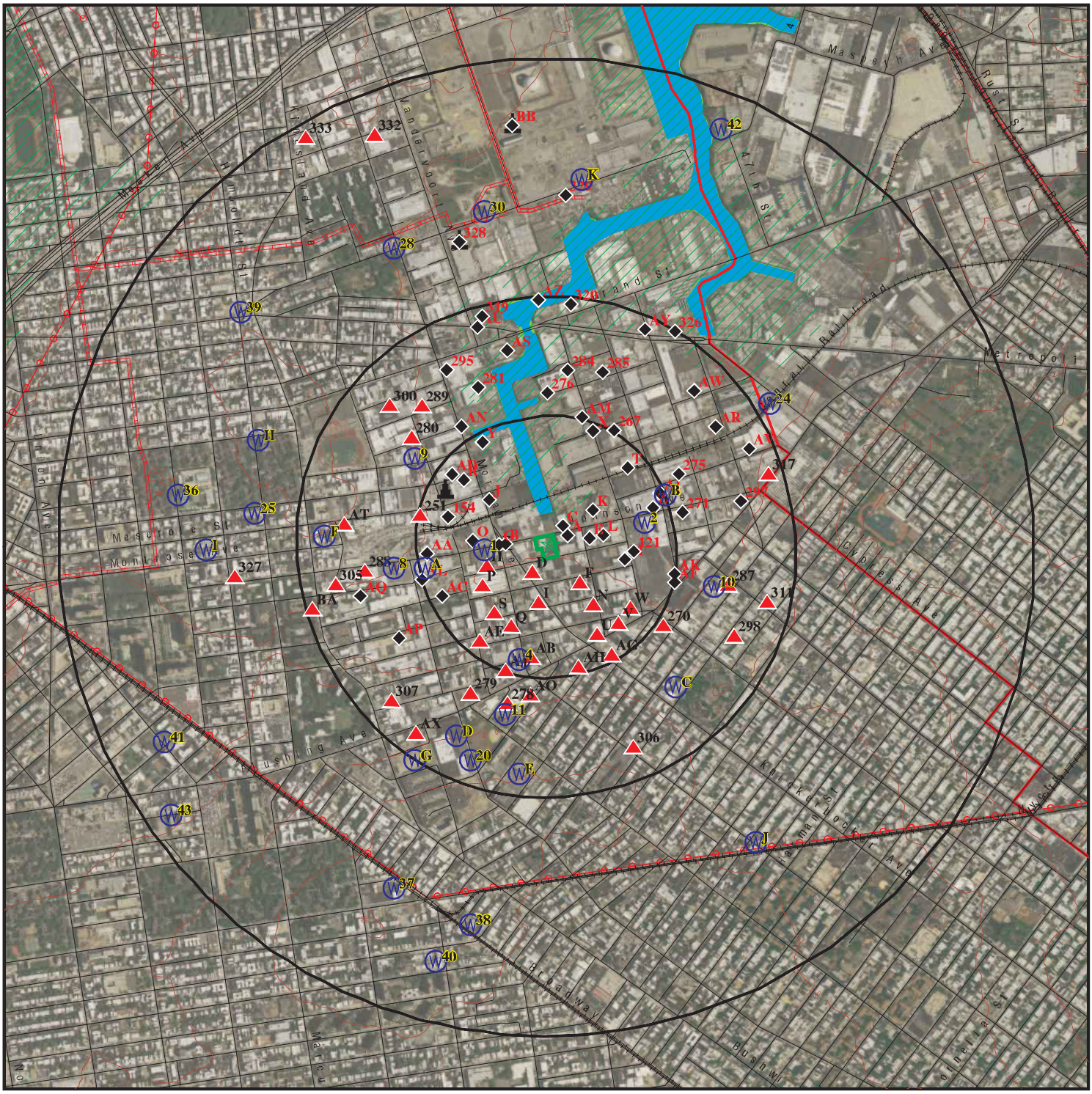
Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
POPULAR HAND	88 INGRAHAM ST	SSE 0 - 1/8 (0.014 mi.)	A7	34

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 7 records.

Site Name	Database(s)
INGRAHAM STREET SIDEWALK GW	NY SHWS
NORTH OF CORNISH KNIT GOODS	NY SHWS
MORGAN OIL TERMINAL	NY SHWS
K - SCHOLES ST. STATION	NY SHWS, NY BROWNFIELDS
WOLFF-ALPORT CHEMICAL COMPANY	NY SHWS
A&G USED AUTO PART D/B/A PARTS ARE	NY SWF/LF
SCHOLES ST. STATION	NY VCP

OVERVIEW MAP - 5684962.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

County Boundary

Power transmission lines

Pipelines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	450 Johnson Avenue	CLIENT:	Langan
ADDRESS:	450 Johnson Avenue Brooklyn NY 11237	CONTACT:	Andrew Kerr
		INQUIRY #:	5684962.2s
LAT/LONG:	40.707711 / 73.930274	DATE:	June 17, 2019 8:16 pm

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DETAIL MAP - 5684962.2S

Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

Indian Reservations BIA

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

0 1/16 1/8 1/4 Miles

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME: 450 Johnson Avenue	CLIENT: Langan
ADDRESS: 450 Johnson Avenue Brooklyn NY 11237	CONTACT: Andrew Kerr
LAT/LONG: 40.707711 / 73.930274	INQUIRY #: 5684962.2s DATE: June 17, 2019 8:18 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	1	0	NR	1
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	0.001		0	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	1	NR	NR	1
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		1	0	6	NR	NR	7
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	0	0	0	NR	0
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Federal RCRA generators list								
RCRA-LQG	0.250		1	6	NR	NR	NR	7
RCRA-SQG	0.250		4	2	NR	NR	NR	6
RCRA-CESQG	0.250	1	1	3	NR	NR	NR	5
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent CERCLIS								
NY SHWS	1.000		0	1	2	5	NR	8
State and tribal landfill and/or solid waste disposal site lists								
NY SWF/LF	0.500		1	5	13	NR	NR	19
State and tribal leaking storage tank lists								
INDIAN LUST	0.500		0	0	0	NR	NR	0
NY LTANKS	0.500		4	8	28	NR	NR	40
NY HIST LTANKS	0.500		0	0	0	NR	NR	0
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
NY UST	0.250		11	22	NR	NR	NR	33
NY CBS UST	0.250		1	0	NR	NR	NR	1
NY MOSF UST	0.500		0	1	1	NR	NR	2
NY CBS	0.250		2	1	NR	NR	NR	3
NY MOSF	0.500		0	1	1	NR	NR	2
NY AST	0.250		9	17	NR	NR	NR	26
NY CBS AST	0.250		1	1	NR	NR	NR	2
NY MOSF AST	0.500		0	0	1	NR	NR	1
INDIAN UST	0.250		0	0	NR	NR	NR	0
NY TANKS	0.250		0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
NY RES DECL	0.125		0	NR	NR	NR	NR	0
NY ENG CONTROLS	0.500		2	1	1	NR	NR	4
NY INST CONTROL	0.500		2	1	1	NR	NR	4
State and tribal voluntary cleanup sites								
NY VCP	0.500		3	1	3	NR	NR	7
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
NY BROWNFIELDS	0.500		0	2	3	NR	NR	5
NY ERP	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
NY SWTIRE	0.500		0	0	0	NR	NR	0
NY SWRCY	0.500		1	0	7	NR	NR	8
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
NY DEL SHWS	1.000		0	0	0	0	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
NY PFAS	0.501		0	0	0	0	NR	0
Local Lists of Registered Storage Tanks								
NY HIST UST	0.250		0	0	NR	NR	NR	0
NY HIST AST	0.001		0	NR	NR	NR	NR	0
Local Land Records								
NY LIENS	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LIENS 2	0.001		0	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0
NY Spills	0.125		13	NR	NR	NR	NR	13
NY Hist Spills	0.125		0	NR	NR	NR	NR	0
NY SPILLS 90	0.125		0	NR	NR	NR	NR	0
NY SPILLS 80	0.125		0	NR	NR	NR	NR	0
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		15	52	NR	NR	NR	67
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	0.001		0	NR	NR	NR	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001	1	0	NR	NR	NR	NR	1
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.001		0	NR	NR	NR	NR	0
FINDS	0.001	1	1	NR	NR	NR	NR	2
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
ECHO	0.001	1	0	NR	NR	NR	NR	1
UXO	1.000		0	0	0	0	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
NY AIRS	0.001		0	NR	NR	NR	NR	0
NY COAL ASH	0.500		0	0	0	NR	NR	0
NY DRYCLEANERS	0.250		1	1	NR	NR	NR	2
NY E DESIGNATION	0.125		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
NY Financial Assurance	0.001		0	NR	NR	NR	NR	0
NY HSWDS	0.500		0	2	1	NR	NR	3
NY MANIFEST	0.250	1	23	66	NR	NR	NR	90
NJ MANIFEST	0.250		4	14	NR	NR	NR	18
PA MANIFEST	0.250		2	4	NR	NR	NR	6
NY SPDES	0.001		0	NR	NR	NR	NR	0
NY VAPOR REOPENED	0.500		0	0	0	NR	NR	0
NY UIC	0.001		0	NR	NR	NR	NR	0
NY COOLING TOWERS	0.001		0	NR	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	1	0	2	NR	3
EDR Hist Auto	0.125		1	NR	NR	NR	NR	1
EDR Hist Cleaner	0.125		1	NR	NR	NR	NR	1
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
NY RGA HWS	0.001		0	NR	NR	NR	NR	0
NY RGA LF	0.001		0	NR	NR	NR	NR	0
- Totals --		5	105	213	70	7	0	400

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1
Target
Property

ENVELOPE MANUFACTURING CORP
450 JOHNSON AVE
BROOKLYN, NY 11237

RCRA-CESQG
FINDS
ECHO
NY MANIFEST

1000694386
NYD987006996

Site 1 of 13 in cluster A

Actual:
19 ft.

RCRA-CESQG:

Date form received by agency:	01/01/2007
Facility name:	ENVELOPE MANUFACTURERS CORP
Facility address:	450 JOHNSON AVE BROOKLYN, NY 11237
EPA ID:	NYD987006996
Mailing address:	JOHNSON AVE BROOKLYN, NY 11237
Contact:	NORMAN BAEALA
Contact address:	JOHNSON AVE BROOKLYN, NY 11237
Contact country:	US
Contact telephone:	718-821-5009
Contact email:	Not reported
EPA Region:	02
Land type:	Facility is not located on Indian land. Additional information is not known.
Classification:	Conditionally Exempt Small Quantity Generator
Description:	Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

Owner/Operator Summary:

Owner/operator name:	ENVELOPE MANUFACTURERS CORP
Owner/operator address:	450 JOHNSON AVE BROOKLYN, NY 11237
Owner/operator country:	US
Owner/operator telephone:	718-821-5009
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	ENVELOPE MANUFACTURERS CORP
Owner/operator address:	450 JOHNSON AVE BROOKLYN, NY 11237
Owner/operator country:	US
Owner/operator telephone:	718-821-5009
Owner/operator email:	Not reported
Owner/operator fax:	Not reported

ENVELOPE MANUFACTURING CORP (Continued) **1000694386**

Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2006
Site name: ENVELOPE MANUFACTURERS CORP
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 06/25/1992
Site name: ENVELOPE MANUFACTURERS CORP
Classification: Small Quantity Generator

Hazardous Waste Summary:

. Waste code: D001
. Waste name: IGNITABLE WASTE

Violation Status: No violations found

Evaluation Action Summary:
Evaluation date: 03/21/2012
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

Evaluation date: 11/10/1998
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

FINDS:

Registry ID: 110004491853

ENVELOPE MANUFACTURING CORP (Continued) **1000694386**

Environmental Interest/Information System

AFS (Aerometric Information Retrieval System (AIRS) Facility Subsystem) replaces the former Compliance Data System (CDS), the National Emission Data System (NEDS), and the Storage and Retrieval of Aerometric Data (SAROAD). AIRS is the national repository for information concerning airborne pollution in the United States. AFS is used to track emissions and compliance data from industrial plants. AFS data are utilized by states to prepare State Implementation Plans to comply with regulatory programs and by EPA as an input for the estimation of total national emissions. AFS is undergoing a major redesign to support facility operating permits required under Title V of the Clean Air Act.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

FIS (New York - Facility Information System) is New York's Department of Environmental Conservation (DEC) information system for tracking environmental facility information found across the State.

AIR MINOR

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000694386
Registry ID:	110004491853
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110004491853

NY MANIFEST:

Country:	USA
EPA ID:	NYD987006996
Facility Status:	Not reported
Location Address 1:	450 JOHNSON AVE
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYD987006996
Mailing Name:	ENVELOPE MFG
Mailing Contact:	NORMAN BAERCA
Mailing Address 1:	450 JOHNSON AVE
Mailing Address 2:	Not reported
Mailing City:	BROOKLYN
Mailing State:	NY
Mailing Zip:	11237

ENVELOPE MANUFACTURING CORP (Continued) **1000694386**

Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	7188215009

NY MANIFEST:

Document ID:	NJA3051307
Manifest Status:	Not reported
seq:	01
Year:	2000
Trans1 State ID:	08690
Trans2 State ID:	H10364
Generator Ship Date:	08/14/2000
Trans1 Recv Date:	08/14/2000
Trans2 Recv Date:	08/15/2000
TSD Site Recv Date:	08/18/2000
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYD987006996
Trans1 EPA ID:	SCR000075150
Trans2 EPA ID:	SCR000074591
TSDF ID 1:	NJD002182897
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	D001 - NON-LISTED IGNITABLE WASTES
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	00513
Units:	P - Pounds
Number of Containers:	001
Container Type:	DM - Metal drums, barrels
Handling Method:	B Incineration, heat recovery, burning.
Specific Gravity:	01.00

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

A2
Target
Property

ENVELOPE MANUFACTURING CORP
450 JOHNSON AVE
BROOKLYN, NY 11237

US AIRS **1016025966**
N/A

Site 2 of 13 in cluster A

Actual:
19 ft.

US AIRS MINOR:

Envid:	1016025966
Region Code:	02
Programmatic ID:	AIR NY0000002610401030
Facility Registry ID:	110004491853
D and B Number:	Not reported
Primary SIC Code:	2751
NAICS Code:	999999
Default Air Classification Code:	MIN
Facility Type of Ownership Code:	POF
Air CMS Category Code:	Not reported
HPV Status:	Not reported

US AIRS MINOR:

Region Code:	02
Programmatic ID:	AIR NY0000002610401030
Facility Registry ID:	110004491853
Air Operating Status Code:	OPR
Default Air Classification Code:	MIN
Air Program:	State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date:	2012-07-06 00:00:00
Activity Status Date:	Not reported
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Not reported

US AIRS MINOR:

Envid:	1016025966
Region Code:	02
Programmatic ID:	AIR NY0000002610401030
Facility Registry ID:	110004491853
D and B Number:	Not reported
Primary SIC Code:	2751
NAICS Code:	999999
Default Air Classification Code:	MIN
Facility Type of Ownership Code:	POF
Air CMS Category Code:	Not reported
HPV Status:	Not reported

US AIRS MINOR:

Region Code:	02
Programmatic ID:	AIR NY0000002610401030
Facility Registry ID:	110004491853
Air Operating Status Code:	OPR
Default Air Classification Code:	MIN
Air Program:	State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date:	2012-07-06 00:00:00
Activity Status Date:	Not reported
Activity Group:	Compliance Monitoring
Activity Type:	Inspection/Evaluation
Activity Status:	Not reported

A3 **LW SLEEPWELL INC-456-474 JOHNSON AVE** **FINDS** **1007788658**
456-474 JOHNSON AVENUE **N/A**
< 1/8 **BROOKLYN, NY 11237**
1 ft.

Site 3 of 13 in cluster A

Relative: FINDS:
Lower

Actual: Registry ID: 110019511456
17 ft.

Environmental Interest/Information System
FIS (New York - Facility Information System) is New York's Department of Environmental Conservation (DEC) information system for tracking environmental facility information found across the State.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

A4 **POPULAR UNIFORM** **NY DRYCLEANERS** **S110247653**
SSE **88 INGRAHAM STREET #2** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.014 mi.
72 ft.

Site 4 of 13 in cluster A

Relative: DRYCLEANERS:
Higher

Actual:
21 ft.

Name:	POPULAR UNIFORM
Address:	88 INGRAHAM STREET #2
City,State,Zip:	BROOKLYN, NY 11237
Facility ID:	2-6104-01034
Phone Number:	718-366-4520
Region:	Not reported
Registration Effective Date:	N/A
Inspection Date:	10/17/03
Install Date:	94/03
Drop Shop:	Not reported
Shutdown:	Y
Alternate Solvent:	Not reported
Current Business:	Not reported

A5 **88 INGRAHAM REALTY CORP** **PA MANIFEST** **S118888472**
SSE **88 INGRAHAM ST** **N/A**
< 1/8 **BROOKLYN, NY 11206**
0.014 mi.
72 ft.

Site 5 of 13 in cluster A

Relative: Manifest Details:
Higher

Actual:
21 ft.

Year:	2015
Manifest Number:	014014169JJK
Manifest Type:	TSD Copy
Generator EPA Id:	NYD020592838
Generator Date:	01/16/2015
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	Not reported
TSD EPA Id:	Not reported
TSD Date:	Not reported

88 INGRAHAM REALTY CORP (Continued) **S118888472**

TSD Facility Name:	Republic Environmental Systems (Pennsylvania) LLC
TSD Facility Address:	2869 Sandstone Dr
TSD Facility City:	Hatfield
TSD Facility State:	PA
Facility Telephone:	Not reported
Page Number:	1
Line Number:	1
Waste Number:	F002
Container Number:	1
Container Type:	Metal drums, barrels, kegs
Waste Quantity:	300
Unit:	Pounds
Handling Code:	Not reported
TSP EPA Id:	PAD085690592
Date TSP Sig:	Not reported
Year:	2015
Manifest Number:	014014169JJK
Manifest Type:	TSD Copy
Generator EPA Id:	NYD020592838
Generator Date:	01/16/2015
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	Not reported
TSD EPA Id:	Not reported
TSD Date:	Not reported
TSD Facility Name:	Republic Environmental Systems (Pennsylvania) LLC
TSD Facility Address:	2869 Sandstone Dr
TSD Facility City:	Hatfield
TSD Facility State:	PA
Facility Telephone:	Not reported
Page Number:	1
Line Number:	1
Waste Number:	D040
Container Number:	1
Container Type:	Metal drums, barrels, kegs
Waste Quantity:	300
Unit:	Pounds
Handling Code:	Not reported
TSP EPA Id:	PAD085690592
Date TSP Sig:	Not reported
Year:	2015
Manifest Number:	014014169JJK
Manifest Type:	TSD Copy
Generator EPA Id:	NYD020592838
Generator Date:	01/16/2015
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	Not reported
TSD EPA Id:	Not reported
TSD Date:	Not reported
TSD Facility Name:	Republic Environmental Systems (Pennsylvania) LLC
TSD Facility Address:	2869 Sandstone Dr
TSD Facility City:	Hatfield

88 INGRAHAM REALTY CORP (Continued) **S118888472**

TSD Facility State:	PA
Facility Telephone:	Not reported
Page Number:	1
Line Number:	1
Waste Number:	D039
Container Number:	1
Container Type:	Metal drums, barrels, kegs
Waste Quantity:	300
Unit:	Pounds
Handling Code:	Not reported
TSP EPA Id:	PAD085690592
Date TSP Sig:	Not reported

A6 **88 INGRAHAM REALTY CORP** **RCRA-SQG** **1000425382**
SSE **88 INGRAHAM ST** **NY ENG CONTROLS** **NYD020592838**
< 1/8 **BROOKLYN, NY 11206** **NY INST CONTROL**
0.014 mi. **NY VCP**
72 ft. **Site 6 of 13 in cluster A** **NY MANIFEST**

Relative:
Higher

Actual:
21 ft.

RCRA-SQG:

Date form received by agency:	07/25/2011
Facility name:	88 INGRAHAM REALTY CORP
Facility address:	88 INGRAHAM ST BROOKLYN, NY 11206
EPA ID:	NYD020592838
Mailing address:	INGRAHAM ST BROOKLYN, NY 11206
Contact:	WILLIAM EISEN
Contact address:	BELLAVERDE WAY DELRAY BEACH, FL 33445
Contact country:	US
Contact telephone:	561-496-5200
Contact email:	Not reported
EPA Region:	02
Land type:	Private
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	MARTIN ZIMMERMAN
Owner/operator address:	Not reported Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	03/15/2003
Owner/Op end date:	Not reported

Owner/operator name:	MARTIN ZIMMERMAN

88 INGRAHAM REALTY CORP (Continued) **1000425382**

Owner/operator address: Not reported
Not reported
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 03/15/2003
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2007
Site name: POPULAR UNIFORM RENTAL
Classification: Not a generator, verified

Date form received by agency: 01/01/2006
Site name: POPULAR UNIFORM RENTAL
Classification: Not a generator, verified

Date form received by agency: 07/08/1999
Site name: POPULAR UNIFORM RENTAL
Classification: Not a generator, verified

Date form received by agency: 07/10/1985
Site name: POPULAR UNIFORM RENTAL
Classification: Large Quantity Generator

Hazardous Waste Summary:

. Waste code: F002
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2, TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F004, AND

88 INGRAHAM REALTY CORP (Continued) **1000425382**

F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Facility Has Received Notices of Violations:
- Regulation violated: Not reported
- Area of violation: Generators - General
- Date violation determined: 03/30/1987
- Date achieved compliance: 03/30/1987
- Violation lead agency: State
  - Enforcement action: WRITTEN INFORMAL
  - Enforcement action date: 03/30/1983
  - Enf. disposition status: Not reported
  - Enf. disp. status date: Not reported
  - Enforcement lead agency: State
  - Proposed penalty amount: Not reported
  - Final penalty amount: Not reported
  - Paid penalty amount: Not reported

Evaluation Action Summary:
- Evaluation date: 03/30/1987
- Evaluation: NON-FINANCIAL RECORD REVIEW
- Area of violation: Generators - General
- Date achieved compliance: 03/30/1987
- Evaluation lead agency: State

ENG CONTROLS:
- Name: POPULAR HAND LAUNDRY
- Address: 88 INGRAHM STREET
- City,State,Zip: BROOKLYN, NY 11237
- Site Code: 58534
- HW Code: V00170
- Control Code: 15
- Control Type: ENG
- Date Record Added: 02/23/2016
- Date Rec Updated: 10/02/2017
- Updated By: SJSTYK
- Site Description: Location: The site is located at 88 Ingraham Street in Brooklyn, NY. Site Features: It consists of a two story building with an adjoining garage. The building comprises approximately 11,000 sq ft. and occupies the entire site. Current Zoning/Use: The site is currently used as for storage and restoration of antique furniture and artwork. The surrounding area is industrial. Historical Use: Since 1933 the building has been used for skein dying, dry cleaning and laundry operations. The site was acquired by Popular Hand Laundry (circa 1970) which operated dry cleaning services. Prior to 1970, a dry cleaning and laundry facility was operated by Klink. The site remedial program is being performed by 88 Ingraham Realty Corp. and Popular Hand Laundry and Cleaners of Richmond Hill, Inc. under the DEC's Voluntary Cleanup Program. Site Geology and Hydrogeology: Groundwater was detected at about 15 feet below grade, and measurements of groundwater elevation indicated that groundwater flow is to the north.
- Env Problem: Nature and extent of contamination: Post remediation: remediation at the site is complete. prior to remediation, the primary contaminants of concern were the chlorinated solvents tetrachloroethene and trichloroethene in soil, groundwater and soil vapor. Remediation has successfully achieved soil cleanup objectives for commercial and

88 INGRAHAM REALTY CORP (Continued) **1000425382**

	industrial use. Remaining contamination in soil vapor is being managed under a Site Management Plan.
Health Problem:	Remedial actions are complete and measures are in place to control the potential for coming in contact with residual contamination remaining at the site.
Dump:	False
Structure:	False
Lagoon:	False
Landfill:	False
Pond:	False
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	Not reported
Dell:	Not reported
Record Add:	2009-10-06 08:02:00
Record Upd:	2013-09-20 14:17:00
Updated By:	ldennist
Own Op:	Applicant/Requestor
Sub Type:	03
Owner Name:	William Eisen
Owner Company:	88 ingraham Realty Corporation
Owner Address:	7700 Bella verde Way
Owner Addr2:	Not reported
Owner City,St,Zip:	Delray Beach, FL 33446
Owner Country:	United States of America
HW Code:	V00170
Waste Type:	TETRACHLOROETHYLENE (PCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00170
Waste Type:	tetrachloroethene (PCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00170
Waste Type:	TRICHLOROETHENE (TCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00170
Waste Type:	Hazardous Substances
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
Crossref ID:	W2-0813-98-06(R
Cross Ref Type Code:	20
Cross Ref Type:	Haz. Substance ID
Record Added Date:	2000-11-30 16:07:00
Record Updated:	2005-02-24 15:54:00
Updated By:	VCPTRANS
Name:	POPULAR HAND LAUNDRY
Address:	88 INGRAHM STREET
City,State,Zip:	BROOKLYN, NY 11237
Site Code:	58534
HW Code:	V00170
Control Code:	13
Control Type:	ENG
Date Record Added:	02/23/2016
Date Rec Updated:	10/02/2017

88 INGRAHAM REALTY CORP (Continued) **1000425382**

Updated By:	SJSTYK
Site Description:	Location: The site is located at 88 Ingraham Street in Brooklyn, NY. Site Features: It consists of a two story building with an adjoining garage. The building comprises approximately 11,000 sq ft. and occupies the entire site. Current Zoning/Use: The site is currently used as for storage and restoration of antique furniture and artwork. The surrounding area is industrial. Historical Use: Since 1933 the building has been used for skein dying, dry cleaning and laundry operations. The site was acquired by Popular Hand Laundry (circa 1970) which operated dry cleaning services. Prior to 1970, a dry cleaning and laundry facility was operated by Klink. The site remedial program is being performed by 88 Ingraham Realty Corp. and Popular Hand Laundry and Cleaners of Richmond Hill, Inc. under the DEC's Voluntary Cleanup Program. Site Geology and Hydrogeology: Groundwater was detected at about 15 feet below grade, and measurements of groundwater elevation indicated that groundwater flow is to the north.
Env Problem:	Nature and extent of contamination: Post remediation: remediation at the site is complete. prior to remediation, the primary contaminants of concern were the chlorinated solvents tetrachloroethene and trichloroethene in soil, groundwater and soil vapor. Remediation has successfully achieved soil cleanup objectives for commercial and industrial use. Remaining contamination in soil vapor is being managed under a Site Management Plan.
Health Problem:	Remedial actions are complete and measures are in place to control the potential for coming in contact with residual contamination remaining at the site.
Dump:	False
Structure:	False
Lagoon:	False
Landfill:	False
Pond:	False
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	Not reported
Dell:	Not reported
Record Add:	2009-10-06 08:02:00
Record Upd:	2013-09-20 14:17:00
Updated By:	ldennist
Own Op:	Applicant/Requestor
Sub Type:	03
Owner Name:	William Eisen
Owner Company:	88 ingraham Realty Corporation
Owner Address:	7700 Bella verde Way
Owner Addr2:	Not reported
Owner City,St,Zip:	Delray Beach, FL 33446
Owner Country:	United States of America
HW Code:	V00170
Waste Type:	TETRACHLOROETHYLENE (PCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00170
Waste Type:	tetrachloroethene (PCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00170
Waste Type:	TRICHLOROETHENE (TCE)

88 INGRAHAM REALTY CORP (Continued) **1000425382**

Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00170
Waste Type:	Hazardous Substances
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
Crossref ID:	W2-0813-98-06(R
Cross Ref Type Code:	20
Cross Ref Type:	Haz. Substance ID
Record Added Date:	2000-11-30 16:07:00
Record Updated:	2005-02-24 15:54:00
Updated By:	VCPTRANS

INST CONTROL:

Name:	POPULAR HAND LAUNDRY
Address:	88 INGRAHM STREET
City,State,Zip:	BROOKLYN, NY 11237
Site Code:	58534
Control Name:	Soil Management Plan
HW Code:	V00170
Control Code:	14
Control Type:	INST
Dt record added:	02/23/2016
Dt rec updated:	10/02/2017
Updated By:	SJSTYK
Site Code:	58534
Site Description:	Location: The site is located at 88 Ingraham Street in Brooklyn, NY. Site Features: It consists of a two story building with an adjoining garage. The building comprises approximately 11,000 sq ft. and occupies the entire site. Current Zoning/Use: The site is currently used as for storage and restoration of antique furniture and artwork. The surrounding area is industrial. Historical Use: Since 1933 the building has been used for skein dying, dry cleaning and laundry operations. The site was acquired by Popular Hand Laundry (circa 1970) which operated dry cleaning services. Prior to 1970, a dry cleaning and laundry facility was operated by Klink. The site remedial program is being performed by 88 Ingraham Realty Corp. and Popular Hand Laundry and Cleaners of Richmond Hill, Inc. under the DEC's Voluntary Cleanup Program. Site Geology and Hydrogeology: Groundwater was detected at about 15 feet below grade, and measurements of groundwater elevation indicated that groundwater flow is to the north.
Env Problem:	Nature and extent of contamination: Post remediation: remediation at the site is complete. prior to remediation, the primary contaminants of concern were the chlorinated solvents tetrachloroethene and trichloroethene in soil, groundwater and soil vapor. Remediation has successfully achieved soil cleanup objectives for commercial and industrial use. Remaining contamination in soil vapor is being managed under a Site Management Plan.
Health Problem:	Remedial actions are complete and measures are in place to control the potential for coming in contact with residual contamination remaining at the site.
Dump:	False
Structure:	False
Lagoon:	False
Landfill:	False
Pond:	False

88 INGRAHAM REALTY CORP (Continued) **1000425382**

Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported
Record Add: 2009-10-06 08:02:00
Record Upd: 2013-09-20 14:17:00
Updated By: ldennist
Own Op: Applicant/Requestor
Sub Type: 03
Owner Name: William Eisen
Owner Company: 88 ingraham Realty Corporation
Owner Address: 7700 Bella verde Way
Owner Addr2: Not reported
Owner City,St,Zip: Delray Beach, FL 33446
Owner Country: United States of America
HW Code: V00170
Waste Type: TETRACHLOROETHYLENE (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00170
Waste Type: tetrachloroethene (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00170
Waste Type: TRICHLOROETHENE (TCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00170
Waste Type: Hazardous Substances
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: W2-0813-98-06(R
Cross Ref Type Code: 20
Cross Ref Type: Haz. Substance ID
Record Added Date: 2000-11-30 16:07:00
Record Updated: 2005-02-24 15:54:00
Updated By: VCPTRANS

Name: POPULAR HAND LAUNDRY
Address: 88 INGRAHM STREET
City,State,Zip: BROOKLYN, NY 11237
Site Code: 58534
Control Name: Ground Water Use Restriction
HW Code: V00170
Control Code: 08
Control Type: INST
Dt record added: 02/23/2016
Dt rec updated: 10/02/2017
Updated By: SJSTYK
Site Code: 58534
Site Description: Location: The site is located at 88 Ingraham Street in Brooklyn, NY. Site Features: It consists of a two story building with an adjoining garage. The building comprises approximately 11,000 sq ft. and occupies the entire site. Current Zoning/Use: The site is currently used as for storage and restoration of antique furniture and artwork. The surrounding area is industrial. Historical Use: Since 1933 the building has been used for skein dying, dry cleaning and laundry

88 INGRAHAM REALTY CORP (Continued) **1000425382**

operations. The site was acquired by Popular Hand Laundry (circa 1970) which operated dry cleaning services. Prior to 1970, a dry cleaning and laundry facility was operated by Klink. The site remedial program is being performed by 88 Ingraham Realty Corp. and Popular Hand Laundry and Cleaners of Richmond Hill, Inc. under the DEC's Voluntary Cleanup Program. Site Geology and Hydrogeology: Groundwater was detected at about 15 feet below grade, and measurements of groundwater elevation indicated that groundwater flow is to the north.

Env Problem: Nature and extent of contamination: Post remediation: remediation at the site is complete. prior to remediation, the primary contaminants of concern were the chlorinated solvents tetrachloroethene and trichloroethene in soil, groundwater and soil vapor. Remediation has successfully achieved soil cleanup objectives for commercial and industrial use. Remaining contamination in soil vapor is being managed under a Site Management Plan.

Health Problem: Remedial actions are complete and measures are in place to control the potential for coming in contact with residual contamination remaining at the site.

Dump: False
Structure: False
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported
Record Add: 2009-10-06 08:02:00
Record Upd: 2013-09-20 14:17:00
Updated By: ldennist
Own Op: Applicant/Requestor
Sub Type: 03
Owner Name: William Eisen
Owner Company: 88 ingraham Realty Corporation
Owner Address: 7700 Bella verde Way
Owner Addr2: Not reported
Owner City,St,Zip: Delray Beach, FL 33446
Owner Country: United States of America
HW Code: V00170
Waste Type: TETRACHLOROETHYLENE (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00170
Waste Type: tetrachloroethene (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00170
Waste Type: TRICHLOROETHENE (TCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00170
Waste Type: Hazardous Substances
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: W2-0813-98-06(R
Cross Ref Type Code: 20

88 INGRAHAM REALTY CORP (Continued) **1000425382**

Cross Ref Type:	Haz. Substance ID
Record Added Date:	2000-11-30 16:07:00
Record Updated:	2005-02-24 15:54:00
Updated By:	VCPTRANS
Name:	POPULAR HAND LAUNDRY
Address:	88 INGRAHM STREET
City,State,Zip:	BROOKLYN, NY 11237
Site Code:	58534
Control Name:	Landuse Restriction
HW Code:	V00170
Control Code:	25
Control Type:	INST
Dt record added:	02/23/2016
Dt rec updated:	10/02/2017
Updated By:	SJSTYK
Site Code:	58534
Site Description:	Location: The site is located at 88 Ingraham Street in Brooklyn, NY. Site Features: It consists of a two story building with an adjoining garage. The building comprises approximately 11,000 sq ft. and occupies the entire site. Current Zoning/Use: The site is currently used as for storage and restoration of antique furniture and artwork. The surrounding area is industrial. Historical Use: Since 1933 the building has been used for skein dying, dry cleaning and laundry operations. The site was acquired by Popular Hand Laundry (circa 1970) which operated dry cleaning services. Prior to 1970, a dry cleaning and laundry facility was operated by Klink. The site remedial program is being performed by 88 Ingraham Realty Corp. and Popular Hand Laundry and Cleaners of Richmond Hill, Inc. under the DEC's Voluntary Cleanup Program. Site Geology and Hydrogeology: Groundwater was detected at about 15 feet below grade, and measurements of groundwater elevation indicated that groundwater flow is to the north.
Env Problem:	Nature and extent of contamination: Post remediation: remediation at the site is complete. prior to remediation, the primary contaminants of concern were the chlorinated solvents tetrachloroethene and trichloroethene in soil, groundwater and soil vapor. Remediation has successfully achieved soil cleanup objectives for commercial and industrial use. Remaining contamination in soil vapor is being managed under a Site Management Plan.
Health Problem:	Remedial actions are complete and measures are in place to control the potential for coming in contact with residual contamination remaining at the site.
Dump:	False
Structure:	False
Lagoon:	False
Landfill:	False
Pond:	False
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	Not reported
Dell:	Not reported
Record Add:	2009-10-06 08:02:00
Record Upd:	2013-09-20 14:17:00
Updated By:	ldennist
Own Op:	Applicant/Requestor
Sub Type:	03

88 INGRAHAM REALTY CORP (Continued) **1000425382**

Owner Name: William Eisen
Owner Company: 88 ingraham Realty Corporation
Owner Address: 7700 Bella verde Way
Owner Addr2: Not reported
Owner City,St,Zip: Delray Beach, FL 33446
Owner Country: United States of America
HW Code: V00170
Waste Type: TETRACHLOROETHYLENE (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00170
Waste Type: tetrachloroethene (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00170
Waste Type: TRICHLOROETHENE (TCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00170
Waste Type: Hazardous Substances
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: W2-0813-98-06(R
Cross Ref Type Code: 20
Cross Ref Type: Haz. Substance ID
Record Added Date: 2000-11-30 16:07:00
Record Updated: 2005-02-24 15:54:00
Updated By: VCPTRANS

Name: POPULAR HAND LAUNDRY
Address: 88 INGRAHM STREET
City,State,Zip: BROOKLYN, NY 11237
Site Code: 58534
Control Name: Site Management Plan
HW Code: V00170
Control Code: 32
Control Type: INST
Dt record added: 02/23/2016
Dt rec updated: 10/02/2017
Updated By: SJSTYK
Site Code: 58534
Site Description: Location: The site is located at 88 Ingraham Street in Brooklyn, NY. Site Features: It consists of a two story building with an adjoining garage. The building comprises approximately 11,000 sq ft. and occupies the entire site. Current Zoning/Use: The site is currently used as for storage and restoration of antique furniture and artwork. The surrounding area is industrial. Historical Use: Since 1933 the building has been used for skein dying, dry cleaning and laundry operations. The site was acquired by Popular Hand Laundry (circa 1970) which operated dry cleaning services. Prior to 1970, a dry cleaning and laundry facility was operated by Klink. The site remedial program is being performed by 88 Ingraham Realty Corp. and Popular Hand Laundry and Cleaners of Richmond Hill, Inc. under the DEC’s Voluntary Cleanup Program. Site Geology and Hydrogeology: Groundwater was detected at about 15 feet below grade, and measurements of groundwater elevation indicated that groundwater flow is to the north.

88 INGRAHAM REALTY CORP (Continued) **1000425382**

Env Problem:	Nature and extent of contamination: Post remediation: remediation at the site is complete. prior to remediation, the primary contaminants of concern were the chlorinated solvents tetrachloroethene and trichloroethene in soil, groundwater and soil vapor. Remediation has successfully achieved soil cleanup objectives for commercial and industrial use. Remaining contamination in soil vapor is being managed under a Site Management Plan.
Health Problem:	Remedial actions are complete and measures are in place to control the potential for coming in contact with residual contamination remaining at the site.
Dump:	False
Structure:	False
Lagoon:	False
Landfill:	False
Pond:	False
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	Not reported
Dell:	Not reported
Record Add:	2009-10-06 08:02:00
Record Upd:	2013-09-20 14:17:00
Updated By:	ldennist
Own Op:	Applicant/Requestor
Sub Type:	03
Owner Name:	William Eisen
Owner Company:	88 ingraham Realty Corporation
Owner Address:	7700 Bella verde Way
Owner Addr2:	Not reported
Owner City,St,Zip:	Delray Beach, FL 33446
Owner Country:	United States of America
HW Code:	V00170
Waste Type:	TETRACHLOROETHYLENE (PCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00170
Waste Type:	tetrachloroethene (PCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00170
Waste Type:	TRICHLOROETHENE (TCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00170
Waste Type:	Hazardous Substances
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
Crossref ID:	W2-0813-98-06(R
Cross Ref Type Code:	20
Cross Ref Type:	Haz. Substance ID
Record Added Date:	2000-11-30 16:07:00
Record Updated:	2005-02-24 15:54:00
Updated By:	VCPTRANS

Name:	POPULAR HAND LAUNDRY
Address:	88 INGRAHM STREET
City,State,Zip:	BROOKLYN, NY 11237
Site Code:	58534

88 INGRAHAM REALTY CORP (Continued) **1000425382**

Control Name:	Deed Restriction
HW Code:	V00170
Control Code:	A
Control Type:	INST
Dt record added:	02/23/2016
Dt rec updated:	10/02/2017
Updated By:	SJSTYK
Site Code:	58534
Site Description:	Location: The site is located at 88 Ingraham Street in Brooklyn, NY. Site Features: It consists of a two story building with an adjoining garage. The building comprises approximately 11,000 sq ft. and occupies the entire site. Current Zoning/Use: The site is currently used as for storage and restoration of antique furniture and artwork. The surrounding area is industrial. Historical Use: Since 1933 the building has been used for skein dying, dry cleaning and laundry operations. The site was acquired by Popular Hand Laundry (circa 1970) which operated dry cleaning services. Prior to 1970, a dry cleaning and laundry facility was operated by Klink. The site remedial program is being performed by 88 Ingraham Realty Corp. and Popular Hand Laundry and Cleaners of Richmond Hill, Inc. under the DEC's Voluntary Cleanup Program. Site Geology and Hydrogeology: Groundwater was detected at about 15 feet below grade, and measurements of groundwater elevation indicated that groundwater flow is to the north.
Env Problem:	Nature and extent of contamination: Post remediation: remediation at the site is complete. prior to remediation, the primary contaminants of concern were the chlorinated solvents tetrachloroethene and trichloroethene in soil, groundwater and soil vapor. Remediation has successfully achieved soil cleanup objectives for commercial and industrial use. Remaining contamination in soil vapor is being managed under a Site Management Plan.
Health Problem:	Remedial actions are complete and measures are in place to control the potential for coming in contact with residual contamination remaining at the site.
Dump:	False
Structure:	False
Lagoon:	False
Landfill:	False
Pond:	False
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	Not reported
Dell:	Not reported
Record Add:	2009-10-06 08:02:00
Record Upd:	2013-09-20 14:17:00
Updated By:	ldennist
Own Op:	Applicant/Requestor
Sub Type:	03
Owner Name:	William Eisen
Owner Company:	88 ingraham Realty Corporation
Owner Address:	7700 Bella verde Way
Owner Addr2:	Not reported
Owner City,St,Zip:	Delray Beach, FL 33446
Owner Country:	United States of America
HW Code:	V00170
Waste Type:	TETRACHLOROETHYLENE (PCE)
Waste Quantity:	UNKNOWN

88 INGRAHAM REALTY CORP (Continued) **1000425382**

Waste Code: Not reported
HW Code: V00170
Waste Type: tetrachloroethene (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00170
Waste Type: TRICHLOROETHENE (TCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00170
Waste Type: Hazardous Substances
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: W2-0813-98-06(R
Cross Ref Type Code: 20
Cross Ref Type: Haz. Substance ID
Record Added Date: 2000-11-30 16:07:00
Record Updated: 2005-02-24 15:54:00
Updated By: VCPTRANS

Name: POPULAR HAND LAUNDRY
Address: 88 INGRAHM STREET
City,State,Zip: BROOKLYN, NY 11237
Site Code: 58534
Control Name: IC/EC Plan
HW Code: V00170
Control Code: 34
Control Type: INST
Dt record added: 02/23/2016
Dt rec updated: 10/02/2017
Updated By: SJSTYK
Site Code: 58534
Site Description: Location: The site is located at 88 Ingraham Street in Brooklyn, NY. Site Features: It consists of a two story building with an adjoining garage. The building comprises approximately 11,000 sq ft. and occupies the entire site. Current Zoning/Use: The site is currently used as for storage and restoration of antique furniture and artwork. The surrounding area is industrial. Historical Use: Since 1933 the building has been used for skein dying, dry cleaning and laundry operations. The site was acquired by Popular Hand Laundry (circa 1970) which operated dry cleaning services. Prior to 1970, a dry cleaning and laundry facility was operated by Klink. The site remedial program is being performed by 88 Ingraham Realty Corp. and Popular Hand Laundry and Cleaners of Richmond Hill, Inc. under the DEC's Voluntary Cleanup Program. Site Geology and Hydrogeology: Groundwater was detected at about 15 feet below grade, and measurements of groundwater elevation indicated that groundwater flow is to the north.
Env Problem: Nature and extent of contamination: Post remediation: remediation at the site is complete. prior to remediation, the primary contaminants of concern were the chlorinated solvents tetrachloroethene and trichloroethene in soil, groundwater and soil vapor. Remediation has successfully achieved soil cleanup objectives for commercial and industrial use. Remaining contamination in soil vapor is being managed under a Site Management Plan.
Health Problem: Remedial actions are complete and measures are in place to control the potential for coming in contact with residual contamination

88 INGRAHAM REALTY CORP (Continued) **1000425382**

remaining at the site.
Dump: False
Structure: False
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported
Record Add: 2009-10-06 08:02:00
Record Upd: 2013-09-20 14:17:00
Updated By: ldennist
Own Op: Applicant/Requestor
Sub Type: 03
Owner Name: William Eisen
Owner Company: 88 ingraham Realty Corporation
Owner Address: 7700 Bella verde Way
Owner Addr2: Not reported
Owner City,St,Zip: Delray Beach, FL 33446
Owner Country: United States of America
HW Code: V00170
Waste Type: TETRACHLOROETHYLENE (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00170
Waste Type: tetrachloroethene (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00170
Waste Type: TRICHLOROETHENE (TCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00170
Waste Type: Hazardous Substances
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: W2-0813-98-06(R
Cross Ref Type Code: 20
Cross Ref Type: Haz. Substance ID
Record Added Date: 2000-11-30 16:07:00
Record Updated: 2005-02-24 15:54:00
Updated By: VCPTRANS

Name: POPULAR HAND LAUNDRY
Address: 88 INGRAHM STREET
City,State,Zip: BROOKLYN, NY 11237
Site Code: 58534
Control Name: Monitoring Plan
HW Code: V00170
Control Code: 31
Control Type: INST
Dt record added: 02/23/2016
Dt rec updated: 10/02/2017
Updated By: SJSTYK
Site Code: 58534
Site Description: Location: The site is located at 88 Ingraham Street in Brooklyn, NY.

88 INGRAHAM REALTY CORP (Continued) **1000425382**

Site Features: It consists of a two story building with an adjoining garage. The building comprises approximately 11,000 sq ft. and occupies the entire site. Current Zoning/Use: The site is currently used as for storage and restoration of antique furniture and artwork. The surrounding area is industrial. Historical Use: Since 1933 the building has been used for skein dying, dry cleaning and laundry operations. The site was acquired by Popular Hand Laundry (circa 1970) which operated dry cleaning services. Prior to 1970, a dry cleaning and laundry facility was operated by Klink. The site remedial program is being performed by 88 Ingraham Realty Corp. and Popular Hand Laundry and Cleaners of Richmond Hill, Inc. under the DEC's Voluntary Cleanup Program. Site Geology and Hydrogeology: Groundwater was detected at about 15 feet below grade, and measurements of groundwater elevation indicated that groundwater flow is to the north.

Env Problem: Nature and extent of contamination: Post remediation: remediation at the site is complete. prior to remediation, the primary contaminants of concern were the chlorinated solvents tetrachloroethene and trichloroethene in soil, groundwater and soil vapor. Remediation has successfully achieved soil cleanup objectives for commercial and industrial use. Remaining contamination in soil vapor is being managed under a Site Management Plan.

Health Problem: Remedial actions are complete and measures are in place to control the potential for coming in contact with residual contamination remaining at the site.

Dump: False
Structure: False
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported
Record Add: 2009-10-06 08:02:00
Record Upd: 2013-09-20 14:17:00
Updated By: ldennist
Own Op: Applicant/Requestor
Sub Type: 03
Owner Name: William Eisen
Owner Company: 88 ingraham Realty Corporation
Owner Address: 7700 Bella verde Way
Owner Addr2: Not reported
Owner City,St,Zip: Delray Beach, FL 33446
Owner Country: United States of America
HW Code: V00170
Waste Type: TETRACHLOROETHYLENE (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00170
Waste Type: tetrachloroethene (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00170
Waste Type: TRICHLOROETHENE (TCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported

88 INGRAHAM REALTY CORP (Continued) **1000425382**

HW Code: V00170
Waste Type: Hazardous Substances
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: W2-0813-98-06(R
Cross Ref Type Code: 20
Cross Ref Type: Haz. Substance ID
Record Added Date: 2000-11-30 16:07:00
Record Updated: 2005-02-24 15:54:00
Updated By: VCPTRANS

Name: POPULAR HAND LAUNDRY
Address: 88 INGRAHM STREET
City,State,Zip: BROOKLYN, NY 11237
Site Code: 58534
Control Name: O&M Plan
HW Code: V00170
Control Code: 33
Control Type: INST
Dt record added: 02/23/2016
Dt rec updated: 10/02/2017
Updated By: SJSTYK
Site Code: 58534
Site Description: Location: The site is located at 88 Ingraham Street in Brooklyn, NY. Site Features: It consists of a two story building with an adjoining garage. The building comprises approximately 11,000 sq ft. and occupies the entire site. Current Zoning/Use: The site is currently used as for storage and restoration of antique furniture and artwork. The surrounding area is industrial. Historical Use: Since 1933 the building has been used for skein dying, dry cleaning and laundry operations. The site was acquired by Popular Hand Laundry (circa 1970) which operated dry cleaning services. Prior to 1970, a dry cleaning and laundry facility was operated by Klink. The site remedial program is being performed by 88 Ingraham Realty Corp. and Popular Hand Laundry and Cleaners of Richmond Hill, Inc. under the DEC's Voluntary Cleanup Program. Site Geology and Hydrogeology: Groundwater was detected at about 15 feet below grade, and measurements of groundwater elevation indicated that groundwater flow is to the north.
Env Problem: Nature and extent of contamination: Post remediation: remediation at the site is complete. prior to remediation, the primary contaminants of concern were the chlorinated solvents tetrachloroethene and trichloroethene in soil, groundwater and soil vapor. Remediation has successfully achieved soil cleanup objectives for commercial and industrial use. Remaining contamination in soil vapor is being managed under a Site Management Plan.
Health Problem: Remedial actions are complete and measures are in place to control the potential for coming in contact with residual contamination remaining at the site.
Dump: False
Structure: False
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported

88 INGRAHAM REALTY CORP (Continued) **1000425382**

Dell: Not reported
Record Add: 2009-10-06 08:02:00
Record Upd: 2013-09-20 14:17:00
Updated By: ldennist
Own Op: Applicant/Requestor
Sub Type: 03
Owner Name: William Eisen
Owner Company: 88 ingraham Realty Corporation
Owner Address: 7700 Bella verde Way
Owner Addr2: Not reported
Owner City,St,Zip: Delray Beach, FL 33446
Owner Country: United States of America
HW Code: V00170
Waste Type: TETRACHLOROETHYLENE (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00170
Waste Type: tetrachloroethene (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00170
Waste Type: TRICHLOROETHENE (TCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00170
Waste Type: Hazardous Substances
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: W2-0813-98-06(R
Cross Ref Type Code: 20
Cross Ref Type: Haz. Substance ID
Record Added Date: 2000-11-30 16:07:00
Record Updated: 2005-02-24 15:54:00
Updated By: VCPTRANS

VCP:
Name: POPULAR HAND LAUNDRY
Address: 88 INGRAHM STREET
City,State,Zip: BROOKLYN, NY 11237
Program Type: VCP
Site Code: 58534
HW Code: V00170
Site Class: C
SWIS: 2401
Region: 2
Town: New York City
Acres: Not reported
Date Record Added: 11/30/2000
Date Record Updated: 02/27/2018
Updated By: JHOCONNE
Site Description: Location: The site is located at 88 Ingraham Street in Brooklyn, NY. Site Features: It consists of a two story building with an adjoining garage. The building comprises approximately 11,000 sq ft. and occupies the entire site. Current Zoning/Use: The site is currently used as for storage and restoration of antique furniture and artwork. The surrounding area is industrial. Historical Use: Since 1933 the building has been used for skein dying, dry cleaning and laundry

88 INGRAHAM REALTY CORP (Continued) **1000425382**

	operations. The site was acquired by Popular Hand Laundry (circa 1970) which operated dry cleaning services. Prior to 1970, a dry cleaning and laundry facility was operated by Klink. The site remedial program is being performed by 88 Ingraham Realty Corp. and Popular Hand Laundry and Cleaners of Richmond Hill, Inc. under the DEC's Voluntary Cleanup Program. Site Geology and Hydrogeology: Groundwater was detected at about 15 feet below grade, and measurements of groundwater elevation indicated that groundwater flow is to the north.
Env Problem:	Nature and extent of contamination: Post remediation: remediation at the site is complete. prior to remediation, the primary contaminants of concern were the chlorinated solvents tetrachloroethene and trichloroethene in soil, groundwater and soil vapor. Remediation has successfully achieved soil cleanup objectives for commercial and industrial use. Remaining contamination in soil vapor is being managed under a Site Management Plan.
Health Problem:	Remedial actions are complete and measures are in place to control the potential for coming in contact with residual contamination remaining at the site.
Dump:	False
Structure:	False
Lagoon:	False
Landfill:	False
Pond:	False
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	Not reported
Dell:	Not reported
Record Add:	2009-10-06 08:02:00
Record Upd:	2013-09-20 14:17:00
Updated By:	ldennist
Own Op:	Applicant/Requestor
Sub Type:	03
Owner Name:	William Eisen
Owner Company:	88 ingraham Realty Corporation
Owner Address:	7700 Bella verde Way
Owner Addr2:	Not reported
Owner City,St,Zip:	Delray Beach, FL 33446
Owner Country:	United States of America
HW Code:	V00170
Waste Type:	TETRACHLOROETHYLENE (PCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00170
Waste Type:	tetrachloroethene (PCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00170
Waste Type:	TRICHLOROETHENE (TCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00170
Waste Type:	Hazardous Substances
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
Crossref ID:	W2-0813-98-06(R
Cross Ref Type Code:	20

88 INGRAHAM REALTY CORP (Continued) **1000425382**

Cross Ref Type: Haz. Substance ID
Record Added Date: 2000-11-30 16:07:00
Record Updated: 2005-02-24 15:54:00
Updated By: VCPTRANS

NY MANIFEST:
Country: USA
EPA ID: NYD020592838
Facility Status: Not reported
Location Address 1: 88 INGRAHM ST
Code: BP
Location Address 2: Not reported
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: 11237
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYD020592838
Mailing Name: POPULAR UNIFORM RENTAL
Mailing Contact: POPULAR UNIFORM RENTAL
Mailing Address 1: 88 INGRAHM STREET
Mailing Address 2: Not reported
Mailing City: BROOKLYN
Mailing State: NY
Mailing Zip: 11237
Mailing Zip 4: Not reported
Mailing Country: USA
Mailing Phone: 7184973000

NY MANIFEST:
Document ID: Not reported
Manifest Status: Not reported
seq: Not reported
Year: 2015
Trans1 State ID: NYR000134957
Trans2 State ID: PAD982661381
Generator Ship Date: 01/16/2015
Trans1 Recv Date: 01/16/2015
Trans2 Recv Date: 01/21/2015
TSD Site Recv Date: 01/29/2015
Part A Recv Date: Not reported
Part B Recv Date: Not reported
Generator EPA ID: NYD020592838
Trans1 EPA ID: Not reported
Trans2 EPA ID: Not reported
TSDF ID 1: PAD085690592
TSDF ID 2: Not reported
Manifest Tracking Number: 014014169JJK
Import Indicator: N
Export Indicator: N
Discr Quantity Indicator: N
Discr Type Indicator: N
Discr Residue Indicator: N
Discr Partial Reject Indicator: N
Discr Full Reject Indicator: N

88 INGRAHAM REALTY CORP (Continued) **1000425382**

Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H141
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	300
Units:	P - Pounds
Number of Containers:	1
Container Type:	DM - Metal drums, barrels
Handling Method:	B Incineration, heat recovery, burning.
Specific Gravity:	1
Waste Code:	D039
Waste Code 1_2:	D040
Waste Code 1_3:	F002
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

A7 **POPULAR HAND** **EDR Hist Cleaner** **1018570947**
SSE **88 INGRAHAM ST** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.014 mi.
72 ft. **Site 7 of 13 in cluster A**

Relative: EDR Hist Cleaner
Higher

Actual: Year: Name: Type:
21 ft. 1974 POPULAR HAND LAUNDRY INC Garment Pressing And Cleaners' Agents

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A8 **POPULAR UNIFORM** **NY UST** **U003107193**
SSE **88 INGRAHAM STREET** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.014 mi.
72 ft. **Site 8 of 13 in cluster A**

Relative: UST:
Higher

Actual:
21 ft.

Name:	POPULAR UNIFORM
Address:	88 INGRAHAM STREET
City,State,Zip:	BROOKLYN, NY 11237
Id/Status:	2-602710 / Unregulated/Closed
Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	N/A
UTM X:	590408.91576
UTM Y:	4506780.46640
Site Type:	Other

POPULAR UNIFORM (Continued) **U003107193**

Affiliation Records:

Site Id:	24666
Affiliation Type:	Facility Owner
Company Name:	POPULAR HAND LAUNDRY AND CLEANERS OF RICHMOND HILL
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	88 INGRAHAM STREET
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(718) 497-3000
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	24666
Affiliation Type:	Mail Contact
Company Name:	POPULAR HAND LAUNDRY AND CLEANERS OF RICHMOND HILL
Contact Type:	Not reported
Contact Name:	RICHARD GETTINGER
Address1:	88 INGRAHAM STREET
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(718) 497-3000
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	24666
Affiliation Type:	Facility Operator
Company Name:	POPULAR UNIFORM
Contact Type:	Not reported
Contact Name:	RICHARD GETTINGER
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 497-3000
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	24666
Affiliation Type:	Emergency Contact
Company Name:	POPULAR HAND LAUNDRY AND CLEANERS OF RICHMOND HILL
Contact Type:	Not reported
Contact Name:	RICHARD GETTINGER

POPULAR UNIFORM (Continued) **U003107193**

Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(516) 932-8472
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	1
Tank ID:	51226
Tank Status:	Closed - In Place
Material Name:	Closed - In Place
Capacity Gallons:	3000
Install Date:	12/01/1982
Date Tank Closed:	11/01/2001
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)
Tightness Test Method:	20
Date Test:	01/01/1997
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I04 - Overfill - Product Level Gauge (A/G)
C02 - Pipe Location - Underground/On-ground
J02 - Dispenser - Suction Dispenser
B00 - Tank External Protection - None
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
G10 - Tank Secondary Containment - Impervious Underlayment

A9 **AMERICAN MEDICAL RESPONSE** **NJ MANIFEST** **S108794123**
SSW **78 INGRAHAM STREET** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.015 mi.
78 ft. **Site 9 of 13 in cluster A**

Relative:
Higher

Actual:
21 ft.

NJ MANIFEST:

EPA Id:	NYR000078105
Mail Address:	78 INGRAHAM STREET
Mail City/State/Zip:	BROOKLYN 11237
Facility Phone:	7186285757
Emergency Phone:	Not reported
Contact:	Not reported

AMERICAN MEDICAL RESPONSE (Continued) **S108794123**

Comments:	Not reported
SIC Code:	Not reported
County:	00
Municipal:	00
Previous EPA Id:	Not reported
Gen Flag:	X
Trans Flag:	Not reported
TSDF Flag:	Not reported
Name Change:	Not reported
Date Change:	Not reported

Manifest:

Manifest Number:	000338045SKS
EPA ID:	NYR000078105
Date Shipped:	05/31/2007
TSDF EPA ID:	NJD982270506
Transporter EPA ID:	TXR000050930
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	05/31/2007
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	06/05/2007
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	BROOKLYN 11237
Reason Load Was Rejected:	Not reported

Waste:

Manifest Year:	Not reported
Waste Code:	D039
Hand Code:	H14
Quantity:	15 G

AMERICAN MEDICAL RESPONSE (Continued) **S108794123**

Manifest Year:	Not reported
Waste Code:	D039
Hand Code:	H14
Quantity:	5 G

Manifest Number:	000986077SKS
EPA ID:	NYR000078105
Date Shipped:	02/06/2008
TSDF EPA ID:	NJD982270506
Transporter EPA ID:	TXR000050930
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	02/06/2008
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	02/11/2008
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	BROOKLYN 11237
Reason Load Was Rejected:	Not reported

Waste:

Manifest Year:	Not reported
Waste Code:	D039
Hand Code:	H141
Quantity:	12 G

Manifest Year:	Not reported
Waste Code:	D039
Hand Code:	H141
Quantity:	5 G

AMERICAN MEDICAL RESPONSE (Continued) **S108794123**

Manifest Number:	000902736SKS
EPA ID:	NYR000078105
Date Shipped:	11/05/2007
TSDF EPA ID:	NJD982270506
Transporter EPA ID:	TXR000050930
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	11/05/2007
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	11/13/2007
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	BROOKLYN 11237
Reason Load Was Rejected:	Not reported

Manifest Number:	001132539SKS
EPA ID:	NYR000078105
Date Shipped:	07/21/2008
TSDF EPA ID:	NJD982270506
Transporter EPA ID:	TXR000050930
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	07/21/2008
Date Trans2 Transported Waste:	Not reported

AMERICAN MEDICAL RESPONSE (Continued) **S108794123**

Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	07/24/2008
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	BROOKLYN 11237
Reason Load Was Rejected:	Not reported

Waste:

Manifest Year:	Not reported
Waste Code:	D039
Hand Code:	H141
Quantity:	14 G

Manifest Year:	Not reported
Waste Code:	D039
Hand Code:	H141
Quantity:	5 G

Manifest Number:	000851092SKS
EPA ID:	NYR000078105
Date Shipped:	08/23/2007
TSDF EPA ID:	NJD982270506
Transporter EPA ID:	TXR000050930
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	08/23/2007
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported

AMERICAN MEDICAL RESPONSE (Continued) **S108794123**

Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	08/27/2007
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	BROOKLYN 11237
Reason Load Was Rejected:	Not reported

Waste:

Manifest Year:	Not reported
Waste Code:	D039
Hand Code:	H14
Quantity:	15 G

Manifest Year:	Not reported
Waste Code:	D039
Hand Code:	H14
Quantity:	5 G

Manifest Number:	001431003SKS
EPA ID:	NYR000078105
Date Shipped:	10/13/2008
TSDF EPA ID:	NJD982270506
Transporter EPA ID:	TXR000050930
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	10/13/2008
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	10/16/2008
TSDF EPA Facility Name:	Not reported

AMERICAN MEDICAL RESPONSE (Continued) **S108794123**

QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	BROOKLYN 11237
Reason Load Was Rejected:	Not reported

Waste:

Manifest Year:	Not reported
Waste Code:	D039
Hand Code:	H141
Quantity:	13 G

Manifest Year:	Not reported
Waste Code:	D039
Hand Code:	H141
Quantity:	5 G

Manifest Number:	003310793SKS
EPA ID:	NYR000078105
Date Shipped:	12/18/2012
TSDF EPA ID:	NJD002182897
Transporter EPA ID:	TXR000081205
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	Not reported
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	Not reported
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported

AMERICAN MEDICAL RESPONSE (Continued) **S108794123**

Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	BROOKLYN 11237
Reason Load Was Rejected:	Not reported

Waste:

Manifest Year:	Not reported
Waste Code:	D039
Hand Code:	Not reported
Quantity:	9.00 gallons

Manifest Number:	000936122SKS
EPA ID:	NYR000078105
Date Shipped:	03/07/2007
TSDF EPA ID:	NJD982270506
Transporter EPA ID:	TXR000050930
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	03/07/2007
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	03/11/2007
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	BROOKLYN 11237
Reason Load Was Rejected:	Not reported

AMERICAN MEDICAL RESPONSE (Continued) **S108794123**

Waste:

Manifest Year:	Not reported
Waste Code:	D039
Hand Code:	H14
Quantity:	17 G

Manifest Year:	Not reported
Waste Code:	D039
Hand Code:	H14
Quantity:	5 G

Manifest Number:	001199037SKS
EPA ID:	NYR000078105
Date Shipped:	04/25/2008
TSDF EPA ID:	NJD982270506
Transporter EPA ID:	TXR000050930
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	04/25/2008
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	04/27/2008
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	BROOKLYN 11237
Reason Load Was Rejected:	Not reported

Waste:

Manifest Year:	Not reported
Waste Code:	D039
Hand Code:	H141

AMERICAN MEDICAL RESPONSE (Continued) **S108794123**

Quantity:	14 G
Manifest Year:	Not reported
Waste Code:	D039
Hand Code:	H141
Quantity:	5 G
Manifest Number:	003310900SKS
EPA ID:	NYR000078105
Date Shipped:	3/27/2013
TSDF EPA ID:	NJD002182897
Transporter EPA ID:	TXR000081205
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	Not reported
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	Not reported
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	BROOKLYN 11237
Reason Load Was Rejected:	Not reported

Waste:

Manifest Year:	Not reported
Waste Code:	D039
Hand Code:	Not reported
Quantity:	9.00 gallons

A10
SSW
< 1/8
0.015 mi.
78 ft.

AMERICAN MEDICAL RESPONSE
78 INGRAHAM ST
BROOKLYN, NY 11237

Site 10 of 13 in cluster A

RCRA-SQG **1001818277**
FINDS **NYR000078105**
ECHO
NY MANIFEST

Relative: Higher

Actual: 21 ft.

RCRA-SQG:

Date form received by agency:	01/01/2007
Facility name:	AMERICAN MEDICAL RESPONSE
Facility address:	78 INGRAHAM ST BROOKLYN, NY 11237-1406
EPA ID:	NYR000078105
Mailing address:	INGRAHAM ST BROOKLYN, NY 11237-1406
Contact:	CHRIS LABIENTO
Contact address:	INGRAHAM ST BROOKLYN, NY 11237-1406
Contact country:	US
Contact telephone:	718-417-0244
Contact email:	Not reported
EPA Region:	02
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	RAIDELL REALTY CO
Owner/operator address:	78 INGRAHAM ST BROOKLYN, NY 11237
Owner/operator country:	US
Owner/operator telephone:	718-417-0244
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	RAIDELL REALTY CO
Owner/operator address:	78 INGRAHAM ST BROOKLYN, NY 11237
Owner/operator country:	US
Owner/operator telephone:	718-417-0244
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No

AMERICAN MEDICAL RESPONSE (Continued) **1001818277**

Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency: 01/01/2006
Site name: AMERICAN MEDICAL RESPONSE
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 11/04/1999
Site name: AMERICAN MEDICAL RESPONSE
Classification: Small Quantity Generator

Hazardous Waste Summary:

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D018
. Waste name: BENZENE

. Waste code: D027
. Waste name: 1,4-DICHLOROBENZENE

. Waste code: D037
. Waste name: PENTACHLOROPHENOL

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

. Waste code: D040
. Waste name: TRICHLORETHYLENE

Violation Status: No violations found

FINDS:

Registry ID: 110004557293

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource

AMERICAN MEDICAL RESPONSE (Continued) **1001818277**

Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1001818277
Registry ID:	110004557293
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110004557293

NY MANIFEST:

Country:	USA
EPA ID:	NYR000078105
Facility Status:	Not reported
Location Address 1:	78 INGRAHAM ST
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYR000078105
Mailing Name:	RAIDELL REALTY CO/AMERICAN MEDICAL RESPONSE
Mailing Contact:	CHRIS LABIENTO
Mailing Address 1:	78 INGRAHAM ST
Mailing Address 2:	Not reported
Mailing City:	BROOKLYN
Mailing State:	NY
Mailing Zip:	11237
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	7186285757

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2013
Trans1 State ID:	TXR000081205
Trans2 State ID:	Not reported
Generator Ship Date:	03/27/2013
Trans1 Recv Date:	03/27/2013
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	04/01/2013
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYR000078105
Trans1 EPA ID:	Not reported

AMERICAN MEDICAL RESPONSE (Continued) **1001818277**

Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD002182897
TSDF ID 2:	Not reported
Manifest Tracking Number:	003310900SKS
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H020
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	9
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	DM - Metal drums, barrels
Handling Method:	R Material recovery of more than 75 percent of the total material.
Specific Gravity:	1
Waste Code:	D039
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

A11 **TWENTIETH CENTURY COSMETICS INC** **RCRA NonGen / NLR** **1000322279**
NE **474 JOHNSON AVE** **FINDS** **NYD001532126**
< 1/8 **BROOKLYN, NY 11237** **ECHO**
0.019 mi. **NY MANIFEST**
100 ft. **Site 11 of 13 in cluster A**

Relative: RCRA NonGen / NLR:
Lower

Date form received by agency:	01/01/2007
Facility name:	TWENTIETH CENTURY COSMETICS INC
Facility address:	474 JOHNSON AVE BROOKLYN, NY 11237-1202
EPA ID:	NYD001532126
Mailing address:	JOHNSON AVE BROOKLYN, NY 11237
Contact:	Not reported
Contact address:	JOHNSON AVE BROOKLYN, NY 11237
Contact country:	US
Contact telephone:	Not reported
Contact email:	Not reported

Actual:
15 ft.

TWENTIETH CENTURY COSMETICS INC (Continued) **1000322279**

EPA Region: 02
Land type: Facility is not located on Indian land. Additional information is not known.
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: MICHAEL WOLLINS
Owner/operator address: NOT REQUIRED
NOT REQUIRED, WY 99999
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: MICHAEL WOLLINS
Owner/operator address: NOT REQUIRED
NOT REQUIRED, WY 99999
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2006
Site name: TWENTIETH CENTURY COSMETICS INC
Classification: Not a generator, verified

Date form received by agency: 07/08/1999
Site name: TWENTIETH CENTURY COSMETICS INC

TWENTIETH CENTURY COSMETICS INC (Continued) **1000322279**

Classification: Not a generator, verified

Date form received by agency: 10/10/1986
Site name: TWENTIETH CENTURY COSMETICS INC
Classification: Large Quantity Generator

Hazardous Waste Summary:

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Violation Status: No violations found

Evaluation Action Summary:
Evaluation date: 12/18/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

FINDS:

Registry ID: 110004335318

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000322279
Registry ID: 110004335318
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110004335318

NY MANIFEST:
Country: USA
EPA ID: NYD001532126

TWENTIETH CENTURY COSMETICS INC (Continued) **1000322279**

Facility Status:	Not reported
Location Address 1:	474 JOHNSON AVE
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYD001532126
Mailing Name:	TWENTIETH CENTURY COSMETICS
Mailing Contact:	TWENTIETH CENTURY COSMETICS
Mailing Address 1:	474 JOHNSON AVENUE
Mailing Address 2:	Not reported
Mailing City:	BROOKLYN
Mailing State:	NY
Mailing Zip:	11237
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	7184970340

NY MANIFEST:

Document ID:	PAB3114403
Manifest Status:	C
seq:	Not reported
Year:	1986
Trans1 State ID:	PA-AH0278
Trans2 State ID:	PA-AH
Generator Ship Date:	12/18/1986
Trans1 Recv Date:	12/18/1986
Trans2 Recv Date:	/ /
TSD Site Recv Date:	12/18/1986
Part A Recv Date:	12/26/1986
Part B Recv Date:	12/31/1986
Generator EPA ID:	NYD001532126
Trans1 EPA ID:	NJD000813477
Trans2 EPA ID:	Not reported
TSDF ID 1:	PAD098732118
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	D001 - NON-LISTED IGNITABLE WASTES
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported

TWENTIETH CENTURY COSMETICS INC (Continued) **1000322279**

Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	00605
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	011
Container Type:	DM - Metal drums, barrels
Handling Method:	L Landfill.
Specific Gravity:	100

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

B12 **CON EDISON** **NY MANIFEST** **S117738250**
West **428 JOHNSON AV** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.021 mi.
110 ft. **Site 1 of 9 in cluster B**

Relative: **Higher**

Actual: **19 ft.**

NY MANIFEST:

Country:	USA
EPA ID:	NYP004712659
Facility Status:	Not reported
Location Address 1:	428 JOHNSON AV
Code:	BP
Location Address 2:	SB67844
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004712659
Mailing Name:	CON EDISON
Mailing Contact:	CON EDISON
Mailing Address 1:	4 IRVING PL
Mailing Address 2:	15TH FL
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2015
Trans1 State ID:	NJD003812047
Trans2 State ID:	NJD003812047
Generator Ship Date:	01/07/2015
Trans1 Recv Date:	01/07/2015
Trans2 Recv Date:	01/13/2015
TSD Site Recv Date:	01/13/2015
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported

CON EDISON (Continued) **S117738250**

Generator EPA ID:	NYP004712659
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002620134GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	70
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

C13 **VANGUARD ENVIRONMENTAL CONSULTING INC** **RCRA NonGen / NLR** **1015747189**
NNE **465 JOHNSON AVE** **NYR000195388**
< 1/8 **BROOKLYN, NY 11237**
0.029 mi.
151 ft. **Site 1 of 5 in cluster C**

Relative: RCRA NonGen / NLR:
Lower

Date form received by agency:	07/12/2012
Facility name:	VANGUARD ENVIRONMENTAL CONSULTING INC
Facility address:	465 JOHNSON AVE BROOKLYN, NY 11237
EPA ID:	NYR000195388
Mailing address:	JOHNSON AVE BROOKLYN, NY 11237
Contact:	VINCENT R TONA
Contact address:	JOHNSON AVE BROOKLYN, NY 11237
Contact country:	US

Actual:
11 ft.

VANGUARD ENVIRONMENTAL CONSULTING INC (Continued) **1015747189**

Contact telephone: 917-682-6930
Contact email: VINCENT.TONA@TECHWASTESOLUTIONS.COM
EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: VPCT REALTY
Owner/operator address: Not reported
Not reported
Owner/operator country: US
Owner/operator telephone: 718-386-5119
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 12/01/2002
Owner/Op end date: Not reported

Owner/operator name: VANGUARD ENVIRONMENTAL CONSULTING INC
Owner/operator address: Not reported
Not reported
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 07/01/2012
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Universal Waste Summary:
Waste type: Consumer Electronics
Accumulated waste on-site: Yes
Generated waste on-site: Not reported

Violation Status: No violations found

B14
WSW
< 1/8
0.030 mi.
158 ft.

Relative: Higher

Actual: 20 ft.

BASIC ADHESIVES INC
25 KNICKERBOCKER AVE
BROOKLYN, NY 11237

Site 2 of 9 in cluster B

Database(s): NY CBS, RCRA NonGen / NLR, ICIS, FINDS, ECHO, NY MANIFEST

EDR ID Number: 1000246346
EPA ID Number: NYD072749104

CBS:

Name:	BASIC ADHESIVES INC
Address:	25 KNICKERBOCKER AVENUE
City,State,Zip:	BROOKLYN, NY 11237
CBS Number:	2-000228
Program Type:	CBS
Facility Status:	Unregulated/Closed
Expiration Date:	Not reported
Dec Region:	2
UTMX:	590262.76853
UTMY:	4506802.95697

RCRA NonGen / NLR:

Date form received by agency:	01/01/2007
Facility name:	BASIC ADHESIVES INC
Facility address:	25 KNICKERBOCKER AVE BROOKLYN, NY 11237-1407
EPA ID:	NYD072749104
Mailing address:	KNICKERBOCKER AVE BROOKLYN, NY 11237
Contact:	Not reported
Contact address:	KNICKERBOCKER AVE BROOKLYN, NY 11237
Contact country:	US
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	02
Land type:	Facility is not located on Indian land. Additional information is not known.
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	BASIC ADHESIVES INC
Owner/operator address:	NOT REQUIRED NOT REQUIRED, WY 99999
Owner/operator country:	US
Owner/operator telephone:	212-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	BASIC ADHESIVES INC
Owner/operator address:	NOT REQUIRED NOT REQUIRED, WY 99999
Owner/operator country:	US
Owner/operator telephone:	212-555-1212
Owner/operator email:	Not reported

BASIC ADHESIVES INC (Continued) **1000246346**

Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2006
Site name: BASIC ADHESIVES INC
Classification: Not a generator, verified

Date form received by agency: 07/08/1999
Site name: BASIC ADHESIVES INC
Classification: Not a generator, verified

Date form received by agency: 11/12/1986
Site name: BASIC ADHESIVES INC
Classification: Small Quantity Generator

Hazardous Waste Summary:

. Waste code: U057
. Waste name: CYCLOHEXANONE (I)

. Waste code: U220
. Waste name: BENZENE, METHYL- (OR) TOLUENE

. Waste code: U226
. Waste name: ETHANE, 1,1,1-TRICHLORO- (OR) METHYL CHLOROFORM

Violation Status: No violations found

Evaluation Action Summary:
Evaluation date: 11/19/1998
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported

BASIC ADHESIVES INC (Continued) **1000246346**

Evaluation lead agency: EPA

Evaluation date: 12/11/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

ICIS:
Enforcement Action ID: 02-2003-4201
FRS ID: 110000774840
Action Name: Basic Adhesives, Inc.
Facility Name: BASIC ADHESIVES, INC
Facility Address: 25 KNICKERBOCKER AVENUE
BROOKLYN, NY 11237
Enforcement Action Type: EPCRA 325 Action For Penalty
Facility County: KINGS
Program System Acronym: ICIS
Enforcement Action Forum Desc: Administrative - Formal
EA Type Code: 325
Facility SIC Code: Not reported
Federal Facility ID: Not reported
Latitude in Decimal Degrees: 40.707174
Longitude in Decimal Degrees: -73.931474
Permit Type Desc: Not reported
Program System Acronym: 2658128
Facility NAICS Code: Not reported
Tribal Land Code: Not reported

Facility Name: BASIC ADHESIVES INC.
Address: 25 KNICKERBOCKER AVENUE
Tribal Indicator: N
Fed Facility: No
NAIC Code: Not reported
SIC Code: 2891

Facility Name: BASIC ADHESIVES INC.
Address: 25 KNICKERBOCKER AVENUE
Tribal Indicator: N
Fed Facility: No
NAIC Code: Not reported
SIC Code: 2891

Facility Name: BASIC ADHESIVES INC.
Address: 25 KNICKERBOCKER AVENUE
Tribal Indicator: N
Fed Facility: No
NAIC Code: Not reported
SIC Code: 2891

Facility Name: BASIC ADHESIVES INC.
Address: 25 KNICKERBOCKER AVENUE
Tribal Indicator: N
Fed Facility: No
NAIC Code: Not reported
SIC Code: 2891

BASIC ADHESIVES INC (Continued) **1000246346**

Facility Name: BASIC ADHESIVES INC.
Address: 25 KNICKERBOCKER AVENUE
Tribal Indicator: N
Fed Facility: No
NAIC Code: Not reported
SIC Code: 2891

Facility Name: BASIC ADHESIVES INC.
Address: 25 KNICKERBOCKER AVENUE
Tribal Indicator: N
Fed Facility: No
NAIC Code: Not reported
SIC Code: 2891

Facility Name: BASIC ADHESIVES INC.
Address: 25 KNICKERBOCKER AVENUE
Tribal Indicator: N
Fed Facility: No
NAIC Code: Not reported
SIC Code: 2891

Facility Name: BASIC ADHESIVES INC.
Address: 25 KNICKERBOCKER AVENUE
Tribal Indicator: N
Fed Facility: No
NAIC Code: Not reported
SIC Code: 2891

FINDS:

Registry ID: 110000774840

Environmental Interest/Information System

NCDB (National Compliance Data Base) supports implementation of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA). The system tracks inspections in regions and states with cooperative agreements, enforcement actions, and settlements.

AIR EMISSIONS CLASSIFICATION UNKNOWN

US EPA TRIS (Toxics Release Inventory System) contains information from facilities on the amounts of over 300 listed toxic chemicals that these facilities release directly to air, water, land, or that are transported off-site.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

FIS (New York - Facility Information System) is New York's Department of Environmental Conservation (DEC) information system for tracking environmental facility information found across the State.

BASIC ADHESIVES INC (Continued) **1000246346**

ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and it Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include; Incident Tracking, Compliance Assistance, and Compliance Monitoring.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000246346
Registry ID:	110000774840
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110000774840

NY MANIFEST:

Country:	USA
EPA ID:	NYD072749104
Facility Status:	Not reported
Location Address 1:	25 KNICKERBOCKER AVE
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYD072749104
Mailing Name:	BASIC ADHESIVES INC
Mailing Contact:	BASIC ADHESIVES INC
Mailing Address 1:	25 KNICKERBOCKER AVENUE
Mailing Address 2:	Not reported
Mailing City:	BROOKLYN
Mailing State:	NY
Mailing Zip:	11237
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	7184975200

Click this hyperlink while viewing on your computer to access -1 additional NY MANIFEST: record(s) in the EDR Site Report.

B15
WSW
< 1/8
0.030 mi.
158 ft.

BASIC ADHESIVES INC
25 KNICKERBOCKER AVENUE
BROOKLYN, NY 11237

Site 3 of 9 in cluster B

NY CBS UST **1001198641**
N/A

Relative:
Higher

Actual:
20 ft.

CBS UST:

Detail As of 1/1/2012:

Id/Status:	2-000228 / INACTIVE FACILITY
Facility Type:	MANUFACTURING
Facility Tel:	(718) 497-5200
Total Tanks:	3
Region:	STATE
ICS No:	2-125064
PBS No:	Not reported
MOSF No:	Not reported
SPDES No:	Not reported
Town:	NEW YORK CITY
Operator:	BASIC ADHESIVES INC
Emergency Contact:	YALE BLOCK
Emergency Contact Phone:	(201) 894-9112
Certification Date:	10/22/1999
Expiration Date:	08/27/2001
Owner Name:	BASIC ADHESIVES INC
Owner Address:	25 KNICKERBOCKER AVENUE
Owner City,St,Zip:	BROOKLYN, NY 11237
Owner Phone:	(718) 497-5200
Owner Type:	5
Owner Subtype:	Not reported
Mail To Name:	BASIC ADHESIVES INC
Mail To Contact:	YALE E. BLOCK
Mail To Address:	25 KNICKERBOCKER AVENUE
Mail To Address 2:	Not reported
Mail To City,St,Zip:	BROOKLYN, NY 11237
Mail To Telephone:	(718) 497-5200

Tank Number:	2
Date Entered:	08/26/1991
Capacity:	500
Chemical:	Xylene (mixed)
Tank Closed:	Not reported
Tank Status:	In Service
Tank Type:	Steel/carbon steel
Install Date:	00/00
CAS No:	1330207
Substance:	Single Hazardous Substance on DEC List
Tank Location:	Outdoors, Belowground
Tank Internal:	None
Tank External:	NONE
Pipe Location:	Aboveground
Pipe Internal:	None
Pipe External:	None
Leak Detection:	None
Secondary Containmentt:	None
Overfill Protection:	None
Haz Percent:	100
Pipe Containment:	None
Pipe Type:	STEEL/IRON
Tank Error Status:	No Missing Data

BASIC ADHESIVES INC (Continued) **1001198641**

Tank Secret:	False
Date Entered:	11:20:08
Last Test:	Not reported
Due Date:	Not reported
SWIS Code:	6101
Cert Flag:	False
Is it There:	False
Is Updated:	False
Owners Mark:	First Owner
Lat/Long:	Not reported
Renew Date:	05/03/93
Deliquent:	False
Total Capacity:	2000
Date Expired:	08/27/95
Case No:	Not reported
Federal Amt:	True
Pipe Flag:	False
Reserve Flag:	True

A16 **480 JOHNSON LLC** **NY AST** **A100300989**
ENE **480 JOHNSON AVENUE** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.030 mi.
158 ft. **Site 12 of 13 in cluster A**

Relative:
Lower

Actual:
14 ft.

AST:

Name:	480 JOHNSON LLC
Address:	480 JOHNSON AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Region:	STATE
DEC Region:	2
Site Status:	Unregulated/Closed
Facility Id:	2-609098
Program Type:	PBS
UTM X:	590445.06696
UTM Y:	4506912.86168
Expiration Date:	N/A
Site Type:	Manufacturing (Other than Chemical)/Processing

Affiliation Records:

Site Id:	30944
Affiliation Type:	Facility Owner
Company Name:	480 JOHNSON LLC
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	480 JOHNSON AVE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(212) 941-6499
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	30944

480 JOHNSON LLC (Continued) **A100300989**

Affiliation Type:	Mail Contact
Company Name:	480 JOHNSON LLC
Contact Type:	Not reported
Contact Name:	JOSHUA FRIEDMAN
Address1:	% FHI INC.
Address2:	325 GRAND STREET
City:	NEW YORK
State:	NY
Zip Code:	10002
Country Code:	001
Phone:	(212) 941-6400
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	30944
Affiliation Type:	Facility Operator
Company Name:	480 JOHNSON LLC
Contact Type:	Not reported
Contact Name:	JOSHUA FRIEDMAN
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(347) 236-7451
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	30944
Affiliation Type:	Emergency Contact
Company Name:	480 JOHNSON LLC
Contact Type:	Not reported
Contact Name:	JOSHUA FRIEDMAN
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(347) 236-7451
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	1
Tank Id:	66396
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

480 JOHNSON LLC (Continued) **A100300989**

Equipment Records:
H00 - Tank Leak Detection - None
I00 - Overfill - None
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
G00 - Tank Secondary Containment - None
D00 - Pipe Type - No Piping
J00 - Dispenser - None
A00 - Tank Internal Protection - None

Tank Location:	Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type:	ZZ
Tank Status:	Closed - Removed
Pipe Model:	Not reported
Install Date:	Not reported
Capacity Gallons:	275
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	03/26/2003
Register:	True
Modified By:	TRANSLAT
Last Modified:	04/14/2017
Material Name:	#2 fuel oil (on-site consumption)
Tank Number:	2
Tank Id:	66397
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Equipment Records:
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
G00 - Tank Secondary Containment - None
J00 - Dispenser - None
D00 - Pipe Type - No Piping
A00 - Tank Internal Protection - None

Tank Location:	Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type:	ZZ
Tank Status:	Closed - Removed
Pipe Model:	Not reported
Install Date:	Not reported
Capacity Gallons:	275
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	03/26/2003
Register:	True
Modified By:	TRANSLAT
Last Modified:	04/14/2017

480 JOHNSON LLC (Continued) **A100300989**

Material Name: #2 fuel oil (on-site consumption)

Tank Number: 3
Tank Id: 66398
Material Code: 0001
Common Name of Substance: #2 Fuel Oil (On-Site Consumption)

Equipment Records:
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
G00 - Tank Secondary Containment - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
J00 - Dispenser - None
D00 - Pipe Type - No Piping
A00 - Tank Internal Protection - None

Tank Location: Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type: ZZ
Tank Status: Closed - Removed
Pipe Model: Not reported
Install Date: Not reported
Capacity Gallons: 5000
Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Date Tank Closed: 03/27/2003
Register: True
Modified By: TRANSLAT
Last Modified: 04/14/2017
Material Name: #2 fuel oil (on-site consumption)

B17 **ALL PRO REMOVALS LLC** **RCRA-LQG** **1010787680**
West **407 JOHNSON AVE** **NYR000156497**
< 1/8 **BROOKLYN, NY 11206**
0.030 mi.
160 ft. **Site 4 of 9 in cluster B**

Relative: RCRA-LQG:
Lower
Date form received by agency: 03/19/2008
Actual: Facility name: ALL PRO REMOVALS LLC
18 ft. Facility address: 407 JOHNSON AVE
BROOKLYN, NY 11206
EPA ID: NYR000156497
Mailing address: JOHNSON AVE
BROOKLYN, NY 11206
Contact: EDWIN ROSADO
Contact address: JOHNSON AVE
BROOKLYN, NY 11206
Contact country: US
Contact telephone: 848-702-4270
Contact email: THE ALLPROS@OPTONLINE.NET
EPA Region: 02
Classification: Large Quantity Generator
Description: Handler: generates 1,000 kg or more of hazardous waste during any

ALL PRO REMOVALS LLC (Continued) **1010787680**

calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:

Owner/operator name:	ALL PRO REMOVALS LLC
Owner/operator address:	DRIFTWOOD DR
	PARLIN, NJ 08859
Owner/operator country:	US
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	02/12/2008
Owner/Op end date:	Not reported

Owner/operator name:	EDWIN ROSADO
Owner/operator address:	Not reported
	Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	03/01/2008
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	Yes

ALL PRO REMOVALS LLC (Continued) **1010787680**

Historical Generators:
Date form received by agency: 03/18/2008
Site name: ALL PRO REMOVALS LLC
Classification: Large Quantity Generator

Violation Status: No violations found

D18 **27 KNICKERBOCKER REALTY LLC** **NY UST** **U004045323**
SW **27 KNICKERBOCKER AVENUE** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.036 mi.
189 ft. **Site 1 of 9 in cluster D**

Relative:
Higher

Actual:
21 ft.

UST:
Name: 27 KNICKERBOCKER REALTY LLC
Address: 27 KNICKERBOCKER AVENUE
City,State,Zip: BROOKLYN, NY 11237
Id/Status: 2-608076 / Unregulated/Closed
Program Type: PBS
Region: STATE
DEC Region: 2
Expiration Date: N/A
UTM X: 590267.88609
UTM Y: 4506795.90607
Site Type: Other

Affiliation Records:
Site Id: 29928
Affiliation Type: Facility Owner
Company Name: BEN STOLZBERG
Contact Type: Not reported
Contact Name: Not reported
Address1: 1839 58TH STREET
Address2: Not reported
City: BROOKLYN
State: NY
Zip Code: 11204
Country Code: 001
Phone: (718) 256-8606
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 29928
Affiliation Type: Mail Contact
Company Name: 27 KNICKERBOCKER REALTY LLC
Contact Type: Not reported
Contact Name: BEN STOLZBERG
Address1: 27 KNICKERBOCKER AVENUE
Address2: Not reported
City: BROOKLYN
State: NY
Zip Code: 11237
Country Code: 001
Phone: (718) 256-8606
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT

27 KNICKERBOCKER REALTY LLC (Continued) **U004045323**

Date Last Modified:	2004-03-04

Site Id:	29928
Affiliation Type:	Facility Operator
Company Name:	27 KNICKERBOCKER REALTY LLC
Contact Type:	Not reported
Contact Name:	BEN STOLZBERG
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 256-8606
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	29928
Affiliation Type:	Emergency Contact
Company Name:	BEN STOLZBERG
Contact Type:	Not reported
Contact Name:	BEN STOLZBERG
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(917) 785-1798
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	01
Tank ID:	64333
Tank Status:	Closed - In Place
Material Name:	Closed - In Place
Capacity Gallons:	550
Install Date:	Not reported
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Z
Material Code:	ZZZZ
Common Name of Substance:	Invalid Material - Please Fix

Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

27 KNICKERBOCKER REALTY LLC (Continued) **U004045323**

Equipment Records:

B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
J00 - Dispenser - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
G00 - Tank Secondary Containment - None
D00 - Pipe Type - No Piping
A00 - Tank Internal Protection - None

Tank Number:	02
Tank ID:	64334
Tank Status:	Closed - In Place
Material Name:	Closed - In Place
Capacity Gallons:	550
Install Date:	Not reported
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Z
Material Code:	ZZZZ
Common Name of Substance:	Invalid Material - Please Fix
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

J00 - Dispenser - None
D00 - Pipe Type - No Piping
H00 - Tank Leak Detection - None
I00 - Overfill - None
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
G00 - Tank Secondary Containment - None
A00 - Tank Internal Protection - None

Tank Number:	03
Tank ID:	64335
Tank Status:	Closed - In Place
Material Name:	Closed - In Place
Capacity Gallons:	550
Install Date:	Not reported
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Z
Material Code:	ZZZZ
Common Name of Substance:	Invalid Material - Please Fix

27 KNICKERBOCKER REALTY LLC (Continued) **U004045323**

Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

G00 - Tank Secondary Containment - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
D00 - Pipe Type - No Piping
J00 - Dispenser - None
A00 - Tank Internal Protection - None

Tank Number:	04
Tank ID:	64336
Tank Status:	Closed - In Place
Material Name:	Closed - In Place
Capacity Gallons:	275
Install Date:	Not reported
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Z
Material Code:	ZZZZ
Common Name of Substance:	Invalid Material - Please Fix

Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

J00 - Dispenser - None
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
G00 - Tank Secondary Containment - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
D00 - Pipe Type - No Piping
A00 - Tank Internal Protection - None

A19 **J & R AFFILIATES** **NY AST** **A100294509**
East **109 INGRAHAM STREET** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.037 mi.
193 ft. **Site 13 of 13 in cluster A**

Relative:
Higher

Actual:
19 ft.

AST:

Name:	J & R AFFILIATES
Address:	109 INGRAHAM STREET
City,State,Zip:	BROOKLYN, NY 11237
Region:	STATE
DEC Region:	2
Site Status:	Unregulated/Closed
Facility Id:	2-608335
Program Type:	PBS
UTM X:	590440.50088
UTM Y:	4506843.86057
Expiration Date:	N/A
Site Type:	Apartment Building/Office Building

Affiliation Records:

Site Id:	30187
Affiliation Type:	Facility Owner
Company Name:	J & R AFFILIATES
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	109 INGRAHAM STREET
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(516) 374-4756
EMail:	Not reported
Fax Number:	Not reported
Modified By:	DMPOKRZY
Date Last Modified:	2016-10-03

Site Id:	30187
Affiliation Type:	Mail Contact
Company Name:	J & R AFFILIATES
Contact Type:	Not reported
Contact Name:	MRS KLEIN
Address1:	109 INGRAHAM STREET
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	4756
EMail:	STUDIOLOFTS@GMAIL.COM
Fax Number:	Not reported
Modified By:	DMPOKRZY
Date Last Modified:	2016-10-03

Site Id:	30187
Affiliation Type:	Facility Operator
Company Name:	J & R AFFILIATES
Contact Type:	Not reported
Contact Name:	MR KLEIN

J & R AFFILIATES (Continued) **A100294509**

Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(516) 374-4756
EMail:	Not reported
Fax Number:	Not reported
Modified By:	DMPOKRZY
Date Last Modified:	2016-10-03

Site Id:	30187
Affiliation Type:	Emergency Contact
Company Name:	J & R AFFILIATES
Contact Type:	Not reported
Contact Name:	HELEN KLEIN
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	999
Phone:	(718) 366-4520
EMail:	Not reported
Fax Number:	Not reported
Modified By:	DMPOKRZY
Date Last Modified:	2016-10-03

Tank Info:

Tank Number:	001
Tank Id:	65049
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Equipment Records:

	F00 - Pipe External Protection - None
	B00 - Tank External Protection - None
	G00 - Tank Secondary Containment - None
	J02 - Dispenser - Suction Dispenser
	L09 - Piping Leak Detection - Exempt Suction Piping
	H00 - Tank Leak Detection - None
	C01 - Pipe Location - Aboveground
	I05 - Overfill - Vent Whistle
	D01 - Pipe Type - Steel/Carbon Steel/Iron
	A00 - Tank Internal Protection - None
Tank Location:	Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Closed - Removed
Pipe Model:	Not reported
Install Date:	Not reported
Capacity Gallons:	2500
Tightness Test Method:	-
Date Test:	Not reported

J & R AFFILIATES (Continued) **A100294509**

Next Test Date:	Not reported
Date Tank Closed:	03/18/2009
Register:	True
Modified By:	JAAVERSA
Last Modified:	04/14/2017
Material Name:	#2 fuel oil (on-site consumption)

Tank Number:	002
Tank Id:	266930
Tank Location:	Aboveground - on saddles, legs, racks, etc.... Tank bottom is elevated above grade or tank pad, allowing visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Closed - Removed
Pipe Model:	Not reported
Install Date:	Not reported
Capacity Gallons:	250
Tightness Test Method:	-
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	03/18/2009
Register:	True
Modified By:	JAAVERSA
Last Modified:	04/14/2017
Material Name:	#2 fuel oil (on-site consumption)

C20 **CON EDISON** **NY MANIFEST** **S117737532**
ENE **486 JOHNSON AVE** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.041 mi.
216 ft. **Site 2 of 5 in cluster C**

Relative: **Lower**

Actual: **14 ft.**

NY MANIFEST:

Country:	USA
EPA ID:	NYP004661385
Facility Status:	Not reported
Location Address 1:	486 JOHNSON AVE
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004661385
Mailing Name:	CON EDISON
Mailing Contact:	CON EDISON
Mailing Address 1:	4 IRVING PL
Mailing Address 2:	15TH FL
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

CON EDISON (Continued) **S117737532**

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJ0000027193
Trans2 State ID:	Not reported
Generator Ship Date:	09/19/2014
Trans1 Recv Date:	09/19/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	09/19/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004661385
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD002200046
TSDF ID 2:	Not reported
Manifest Tracking Number:	013244019JJK
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	800
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

D21
SSW
< 1/8
0.042 mi.
224 ft.

SPILL NUMBER 0406955
KNICKERBOCKER/INGRAM
BROOKLYN, NY

Site 2 of 9 in cluster D

NY Spills **S106699572**
N/A

Relative:
Higher

Actual:
22 ft.

SPILLS:

Name:	SPILL NUMBER 0406955
Address:	KNICKERBOCKER/INGRAM
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0406955 / 2004-09-24
Facility ID:	0406955
Facility Type:	ER
DER Facility ID:	77089
Site ID:	83795
DEC Region:	2
Spill Cause:	Unknown
Spill Class:	E5
SWIS:	2401
Spill Date:	2004-09-22
Investigator:	TJDEMEO
Referred To:	Not reported
Reported to Dept:	2004-09-23
CID:	444
Water Affected:	Not reported
Spill Source:	Unknown
Spill Notifier:	Local Agency
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2004-09-23
Spill Record Last Update:	2004-09-24
Spiller Name:	ANNY
Spiller Company:	Not reported
Spiller Address:	KNICKERBOCKER/INGRAM
Spiller Company:	001
Contact Name:	ANNY
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was DEMEO DeMeo responded to the site. Spill was a line of black asphalt sealer along a joint of the sidewalk. Closed "
Remarks:	"ON SIDEWLAK, OIL SLICK: THAT IS ALL THE INFO SHE HAD: "

All Materials:

Site ID:	83795
Operable Unit ID:	889546
Operable Unit:	01
Material ID:	484779
Material Code:	0066A
Material Name:	unknown petroleum
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	L
Recovered:	.00
Oxygenate:	Not reported
Site ID:	83795

SPILL NUMBER 0406955 (Continued) **S106699572**

Operable Unit ID:	889546
Operable Unit:	01
Material ID:	484778
Material Code:	0066A
Material Name:	unknown petroleum
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	Not reported
Recovered:	.00
Oxygenate:	Not reported

B22 **NATIONWIDE CHEMICAL CO, INC.** **NY CBS** **1000260651**
West **395 JOHNSON AVENUE** **NY CBS AST** **N/A**
< 1/8 **BROOKLYN, NY 11206**
0.043 mi.
229 ft. **Site 5 of 9 in cluster B**

Relative: **Lower**

Actual: **18 ft.**

CBS:

Name:	NATIONWIDE CHEMICAL CO, INC.
Address:	395 JOHNSON AVENUE
City,State,Zip:	BROOKLYN, NY 11206
CBS Number:	2-000152
Program Type:	CBS
Facility Status:	Unregulated/Closed
Expiration Date:	Not reported
Dec Region:	2
UTMX:	590137.33502
UTMY:	4506857.61282

CBS AST:

CBS Number:	2-000152
ICS Number:	2-126539
PBS Number:	Not reported
MOSF Number:	Not reported
SPDES Number:	Not reported
Facility Status:	IN SERVICE
Facility Type:	D
Telephone:	(718) 386-6622
Facility Town:	NEW YORK CITY
Region:	STATE
Expiration Date:	07/25/2003
Total Capacity of All Active Tanks(gal):	7700
Operator:	ALLEN ALGAZE
Emergency Contact:	ALLEN ALGAZE
Emergency Phone:	(718) 386-6622
Owner Name:	NATIONWIDE CHEMICAL CO., INC.
Owner Address:	395 JOHNSON AVENUE
Owner City,St,Zip:	BROOKLYN, NY 11206
Owner Telephone:	(718) 386-6622
Owner Type:	Corporate/Commercial
Owner Sub Type:	Not reported
Mail Name:	NATIONWIDE CHEMICAL CO., INC.
Mail Contact Addr:	121 MORGAN AVENUE
Mail Contact Addr2:	Not reported
Mail Contact Contact:	ALLEN ALGAZE

NATIONWIDE CHEMICAL CO, INC. (Continued) **1000260651**

Mail Contact City,St,Zip:	BROOKLYN, NY 11237
Mail Phone:	(718) 386-6622
Tank Id:	007
CAS Number:	1310732
Federal ID:	Not reported
Tank Status:	In Service
Install Date:	11/93
Tank Closed:	Not reported
Capacity (Gal):	900
Chemical:	Sodium hydroxide
Tank Location:	Indoors, Aboveground
Tank Type:	Steel/carbon steel
Total Tanks:	6
Tank Secret:	False
Tank Secondary Containment:	00
Tank Error Status:	No Missing Data
Date Entered:	11/29/1993
Certified Date:	07/16/2001
Substance:	More than one Hazardous Substance on DEC List
Internal Protection:	None
External Protection:	None,None
Pipe Location:	None
Pipe Type:	0
Pipe Internal:	None
Pipe External:	00
Pipe Flag:	00
Leak Detection:	00
Overfill Protection:	00
Haz Percent:	10
Last Test:	Not reported
Due Date:	Not reported
SWIS Code:	6101
Lat/Long:	Not reported
Is Updated:	False
Renew Date:	04/01/93
Is It There:	False
Delinquent:	False
Date Expired:	07/25/95
Owner Mark:	1
Certificate Needs to be Printed:	False
Fiscal Amt for Registration Fee Correct:	True
Renewal Has Been Printed for Facility:	True
Pre-Printed Renewal App Last Printed:	03/30/2001

Tank Id:	008
CAS Number:	7681529
Federal ID:	Not reported
Tank Status:	In Service
Install Date:	11/90
Tank Closed:	00/00
Capacity (Gal):	2000
Chemical:	Sodium hypochlorite
Tank Location:	Indoors, Aboveground
Tank Type:	Fiberglass reinforced plastic [FRP]
Total Tanks:	6

NATIONWIDE CHEMICAL CO, INC. (Continued) **1000260651**

Tank Secret:	False
Tank Secondary Containment:	00
Tank Error Status:	No Missing Data
Date Entered:	11/29/1993
Certified Date:	07/16/2001
Substance:	Single Hazardous Substance on DEC List
Internal Protection:	None
External Protection:	None,None
Pipe Location:	None
Pipe Type:	0
Pipe Internal:	None
Pipe External:	00
Pipe Flag:	00
Leak Detection:	00
Overfill Protection:	00
Haz Percent:	15
Last Test:	Not reported
Due Date:	Not reported
SWIS Code:	6101
Lat/Long:	Not reported
Is Updated:	False
Renew Date:	04/01/93
Is It There:	False
Delinquent:	False
Date Expired:	07/25/95
Owner Mark:	1
Certificate Needs to be Printed:	False
Fiscal Amt for Registration Fee Correct:	True
Renewal Has Been Printed for Facility:	True
Pre-Printed Renewal App Last Printed:	03/30/2001

Tank Id:	009
CAS Number:	1310732
Federal ID:	Not reported
Tank Status:	In Service
Install Date:	11/90
Tank Closed:	00/00
Capacity (Gal):	2000
Chemical:	Sodium hydroxide
Tank Location:	Indoors, Aboveground
Tank Type:	Fiberglass reinforced plastic [FRP]
Total Tanks:	6
Tank Secret:	False
Tank Secondary Containment:	00
Tank Error Status:	No Missing Data
Date Entered:	11/29/1993
Certified Date:	07/16/2001
Substance:	More than one Hazardous Substance on DEC List
Internal Protection:	None
External Protection:	None,None
Pipe Location:	None
Pipe Type:	0
Pipe Internal:	None
Pipe External:	00
Pipe Flag:	00
Leak Detection:	00

NATIONWIDE CHEMICAL CO, INC. (Continued) **1000260651**

Overfill Protection:	00
Haz Percent:	57
Last Test:	Not reported
Due Date:	Not reported
SWIS Code:	6101
Lat/Long:	Not reported
Is Updated:	False
Renew Date:	04/01/93
Is It There:	False
Delinquent:	False
Date Expired:	07/25/95
Owner Mark:	1
Certificate Needs to be Printed:	False
Fiscal Amt for Registration Fee Correct:	True
Renewal Has Been Printed for Facility:	True
Pre-Printed Renewal App Last Printed:	03/30/2001

Tank Id:	006
CAS Number:	1310732
Federal ID:	Not reported
Tank Status:	In Service
Install Date:	09/93
Tank Closed:	Not reported
Capacity (Gal):	2000
Chemical:	Sodium hydroxide
Tank Location:	Indoors, Aboveground
Tank Type:	Fiberglass reinforced plastic [FRP]
Total Tanks:	6
Tank Secret:	False
Tank Secondary Containment:	00
Tank Error Status:	No Missing Data
Date Entered:	11/29/1993
Certified Date:	07/16/2001
Substance:	Single Hazardous Substance on DEC List
Internal Protection:	None
External Protection:	None,None
Pipe Location:	None
Pipe Type:	0
Pipe Internal:	None
Pipe External:	00
Pipe Flag:	00
Leak Detection:	00
Overfill Protection:	00
Haz Percent:	100
Last Test:	Not reported
Due Date:	Not reported
SWIS Code:	6101
Lat/Long:	Not reported
Is Updated:	False
Renew Date:	04/01/93
Is It There:	False
Delinquent:	False
Date Expired:	07/25/95
Owner Mark:	1
Certificate Needs to be Printed:	False
Fiscal Amt for Registration Fee Correct:	True

NATIONWIDE CHEMICAL CO, INC. (Continued) **1000260651**

Renewal Has Been Printed for Facility: True
Pre-Printed Renewal App Last Printed: 03/30/2001

Tank Id: 004
CAS Number: 1310583
Federal ID: Not reported
Tank Status: In Service
Install Date: 05/87
Tank Closed: Not reported
Capacity (Gal): 900
Chemical: Potassium hydroxide
Tank Location: Indoors, Aboveground
Tank Type: Steel/carbon steel
Total Tanks: 6
Tank Secret: False
Tank Secondary Containment: None
Tank Error Status: No Missing Data
Date Entered: 07/25/1989
Certified Date: 07/16/2001
Substance: More than one Hazardous Substance on DEC List
Internal Protection: None
External Protection: None
Pipe Location: None
Pipe Type: Double Walled Fiberglass
Pipe Internal: None
Pipe External: None
Pipe Flag: None
Leak Detection: None
Overfill Protection: None
Haz Percent: 1
Last Test: Not reported
Due Date: Not reported
SWIS Code: 6101
Lat/Long: Not reported
Is Updated: False
Renew Date: 04/01/93
Is It There: False
Delinquent: False
Date Expired: 07/25/95
Owner Mark: 1
Certificate Needs to be Printed: False
Fiscal Amt for Registration Fee Correct: True
Renewal Has Been Printed for Facility: True
Pre-Printed Renewal App Last Printed: 03/30/2001

Tank Id: 003
CAS Number: 1310583
Federal ID: Not reported
Tank Status: In Service
Install Date: 05/87
Tank Closed: Not reported
Capacity (Gal): 900
Chemical: Potassium hydroxide
Tank Location: Indoors, Aboveground
Tank Type: Steel/carbon steel

NATIONWIDE CHEMICAL CO, INC. (Continued) **1000260651**

Total Tanks:	6
Tank Secret:	False
Tank Secondary Containment:	None
Tank Error Status:	No Missing Data
Date Entered:	07/25/1989
Certified Date:	07/16/2001
Substance:	More than one Hazardous Substance on DEC List
Internal Protection:	None
External Protection:	None
Pipe Location:	None
Pipe Type:	Double Walled Fiberglass
Pipe Internal:	None
Pipe External:	None
Pipe Flag:	None
Leak Detection:	None
Overfill Protection:	None
Haz Percent:	1
Last Test:	Not reported
Due Date:	Not reported
SWIS Code:	6101
Lat/Long:	Not reported
Is Updated:	False
Renew Date:	04/01/93
Is It There:	False
Delinquent:	False
Date Expired:	07/25/95
Owner Mark:	1
Certificate Needs to be Printed:	False
Fiscal Amt for Registration Fee Correct:	True
Renewal Has Been Printed for Facility:	True
Pre-Printed Renewal App Last Printed:	03/30/2001

Tank Id:	002
CAS Number:	1310583
Federal ID:	Not reported
Tank Status:	In Service
Install Date:	05/87
Tank Closed:	Not reported
Capacity (Gal):	1500
Chemical:	Potassium hydroxide
Tank Location:	Indoors, Aboveground
Tank Type:	Steel/carbon steel
Total Tanks:	6
Tank Secret:	False
Tank Secondary Containment:	None
Tank Error Status:	No Missing Data
Date Entered:	07/25/1989
Certified Date:	07/16/2001
Substance:	Single Hazardous Substance on DEC List
Internal Protection:	None
External Protection:	None
Pipe Location:	None
Pipe Type:	Double Walled Fiberglass
Pipe Internal:	None
Pipe External:	None
Pipe Flag:	None

NATIONWIDE CHEMICAL CO, INC. (Continued) **1000260651**

Leak Detection:	None
Overfill Protection:	None
Haz Percent:	100
Last Test:	Not reported
Due Date:	Not reported
SWIS Code:	6101
Lat/Long:	Not reported
Is Updated:	False
Renew Date:	04/01/93
Is It There:	False
Delinquent:	False
Date Expired:	07/25/95
Owner Mark:	1
Certificate Needs to be Printed:	False
Fiscal Amt for Registration Fee Correct:	True
Renewal Has Been Printed for Facility:	True
Pre-Printed Renewal App Last Printed:	03/30/2001

Tank Id:	001
CAS Number:	1310583
Federal ID:	Not reported
Tank Status:	In Service
Install Date:	05/87
Tank Closed:	Not reported
Capacity (Gal):	1500
Chemical:	Potassium hydroxide
Tank Location:	Indoors, Aboveground
Tank Type:	Steel/carbon steel
Total Tanks:	6
Tank Secret:	False
Tank Secondary Containment:	None
Tank Error Status:	No Missing Data
Date Entered:	07/25/1989
Certified Date:	07/16/2001
Substance:	Single Hazardous Substance on DEC List
Internal Protection:	None
External Protection:	None
Pipe Location:	None
Pipe Type:	Double Walled Fiberglass
Pipe Internal:	None
Pipe External:	None
Pipe Flag:	None
Leak Detection:	None
Overfill Protection:	None
Haz Percent:	45
Last Test:	Not reported
Due Date:	Not reported
SWIS Code:	6101
Lat/Long:	Not reported
Is Updated:	False
Renew Date:	04/01/93
Is It There:	False
Delinquent:	False
Date Expired:	07/25/95
Owner Mark:	1
Certificate Needs to be Printed:	False

NATIONWIDE CHEMICAL CO, INC. (Continued) **1000260651**

Fiscal Amt for Registration Fee Correct: True
Renewal Has Been Printed for Facility: True
Pre-Printed Renewal App Last Printed: 03/30/2001

Tank Id:	005
CAS Number:	1310732
Federal ID:	Not reported
Tank Status:	In Service
Install Date:	05/87
Tank Closed:	01/01
Capacity (Gal):	450
Chemical:	Sodium hydroxide
Tank Location:	Indoors, Aboveground
Tank Type:	Steel/carbon steel
Total Tanks:	6
Tank Secret:	False
Tank Secondary Containment:	None
Tank Error Status:	No Missing Data
Date Entered:	07/25/1989
Certified Date:	07/16/2001
Substance:	More than one Hazardous Substance on DEC List
Internal Protection:	None
External Protection:	None
Pipe Location:	None
Pipe Type:	Double Walled Fiberglass
Pipe Internal:	None
Pipe External:	None
Pipe Flag:	None
Leak Detection:	None
Overfill Protection:	None
Haz Percent:	7
Last Test:	Not reported
Due Date:	Not reported
SWIS Code:	6101
Lat/Long:	Not reported
Is Updated:	False
Renew Date:	04/01/93
Is It There:	False
Delinquent:	False
Date Expired:	07/25/95
Owner Mark:	1
Certificate Needs to be Printed:	False
Fiscal Amt for Registration Fee Correct:	True
Renewal Has Been Printed for Facility:	True
Pre-Printed Renewal App Last Printed:	03/30/2001

B23 **ROBINWOOD MFG CO** **RCRA NonGen / NLR** **1000790145**
West **1 KNICKERBOCKER AVE** **NYD987016219**
< 1/8 **BROOKLYN, NY 11237**
0.044 mi.
234 ft. **Site 6 of 9 in cluster B**

Relative: RCRA NonGen / NLR:
Lower Date form received by agency: 01/01/2007
Actual: Facility name: ROBINWOOD MFG CO
18 ft. Facility address: 1 KNICKERBOCKER AVE
BROOKLYN, NY 11237-1407

ROBINWOOD MFG CO (Continued) **1000790145**

EPA ID: NYD987016219
Mailing address: KNICKERBOCKER AVE
BROOKLYN, NY 11237
Contact: Not reported
Contact address: KNICKERBOCKER AVE
BROOKLYN, NY 11237
Contact country: US
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: DBA ROBINWOOD MFG
Owner/operator address: 1 KNICKERBOCKER AVE
BROOKLYN, NY 11237
Owner/operator country: US
Owner/operator telephone: 718-456-4870
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: DBA ROBINWOOD MFG
Owner/operator address: 1 KNICKERBOCKER AVE
BROOKLYN, NY 11237
Owner/operator country: US
Owner/operator telephone: 718-456-4870
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

ROBINWOOD MFG CO (Continued) **1000790145**

Historical Generators:
Date form received by agency: 01/01/2006
Site name: ROBINWOOD MFG CO
Classification: Not a generator, verified

Date form received by agency: 07/08/1999
Site name: ROBINWOOD MFG CO
Classification: Not a generator, verified

Date form received by agency: 10/05/1992
Site name: ROBINWOOD MFG CO
Classification: Small Quantity Generator

Hazardous Waste Summary:

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Violation Status: No violations found

B24 **IFO AUTO RADIATOR** **NY Spills** **S106008264**
West **3 KNICKERBOCKER AVE** **N/A**
< 1/8 **BROOKLYN, NY**
0.045 mi.
236 ft. **Site 7 of 9 in cluster B**

Relative:
Higher

Actual:
19 ft.

SPILLS:
Name: IFO AUTO RADIATOR
Address: 3 KNICKERBOCKER AVE
City,State,Zip: BROOKLYN, NY
Spill Number/Closed Date: 0207179 / 2002-10-11
Facility ID: 0207179
Facility Type: ER
DER Facility ID: 241898
Site ID: 298995
DEC Region: 2
Spill Cause: Other

IFO AUTO RADIATOR (Continued) **S106008264**

Spill Class:	C3
SWIS:	2401
Spill Date:	2002-10-10
Investigator:	JBVOUGHT
Referred To:	Not reported
Reported to Dept:	2002-10-10
CID:	252
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Affected Persons
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2002-10-10
Spill Record Last Update:	2002-12-27
Spiller Name:	UNK
Spiller Company:	REDDY MIX CEMENT
Spiller Address:	8 KNICKERBOCKER
Spiller Company:	001
Contact Name:	MARCADO LOUIS
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was VOUGHT 10/11/2002-VOUGHT-Non-petroleum spill. Caller referred to NYC Sanitation hotline, NYC Sanitation police and DEP for possible sewer discharge. Spill closed by Vought."
Remarks:	"COMP STATES CEMENT BUSINESS CONTINUES TO DROP LARGE AMOUNTS OF CEMENT IFO HIS BUSINESS."

All Materials:

Site ID:	298995
Operable Unit ID:	860006
Operable Unit:	01
Material ID:	517761
Material Code:	0082A
Material Name:	cement products
Case No.:	Not reported
Material FA:	Other
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

B25 **NYSDEC #224142 - INGRAHAM ST SIDEWALK PLUME TRACKD** **RCRA-SQG** **1014399917**
WSW **KNICKERBOCKER AVE & INGRAHAM** **NY MANIFEST** **NYR000180075**
< 1/8 **BROOKLYN, NY 11237**
0.048 mi.
252 ft. **Site 8 of 9 in cluster B**

Relative: **Higher**

Actual: **20 ft.**

RCRA-SQG:

Date form received by agency:	01/20/2011
Facility name:	NYSDEC #224142 - INGRAHAM ST SIDEWALK PLUME TRACKDOWN SITE
Facility address:	KNICKERBOCKER AVE & INGRAHAM STREET BROOKLYN, NY 11237
EPA ID:	NYR000180075

NYSDEC #224142 - INGRAHAM ST SIDEWALK PLUME TRACKDOWN SITE (Continued) **1014399917**

Mailing address:	BROADWAY 12TH FLOOR ALBANY, NY 12233-7016
Contact:	JAVIER PEREZ
Contact address:	BROADWAY 12TH FLOOR ALBANY, NY 12233-7016
Contact country:	US
Contact telephone:	518-402-9774
Contact email:	JXPEREZM@GW.DEC.STATE.NY.US
EPA Region:	02
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	NYSDEC
Owner/operator address:	BROADWAY 12TH FLOOR ALBANY, NY 12233
Owner/operator country:	US
Owner/operator telephone:	518-402-9774
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Other
Owner/Operator Type:	Owner
Owner/Op start date:	10/19/2010
Owner/Op end date:	Not reported

Owner/operator name:	NYSDEC
Owner/operator address:	Not reported Not reported
Owner/operator country:	US
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Other
Owner/Operator Type:	Operator
Owner/Op start date:	10/19/2010
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No

NYSDEC #224142 - INGRAHAM ST SIDEWALK PLUME TRACKDOWN SITE (Continued) **1014399917**

Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Hazardous Waste Summary:

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

. Waste code: D040
. Waste name: TRICHLORETHYLENE

. Waste code: F001
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE, TRICHLORETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE AND CHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Violation Status: No violations found

NY MANIFEST:
Country: USA
EPA ID: NYR000180075
Facility Status: Not reported
Location Address 1: INGRAHAM ST & KNICKERSBOCKER
Code: BP
Location Address 2: Not reported
Total Tanks: Not reported
Location City: MASPETH
Location State: NY
Location Zip: 11237
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYR000180075
Mailing Name: NYSDEC #224142 - INGRAHAM ST SIDEWALK PLUME TRACKDOWN SITE
Mailing Contact: NYSDEC #224142 - INGRAHAM ST SIDEWALK PLUME TRACKDOWN SITE
Mailing Address 1: 625 BROADWAY - 12TH FLOOR
Mailing Address 2: Not reported
Mailing City: ALBANY
Mailing State: NY
Mailing Zip: 10940
Mailing Zip 4: Not reported
Mailing Country: USA
Mailing Phone: 5184029774

NY MANIFEST:
Document ID: Not reported
Manifest Status: Not reported
seq: Not reported
Year: 2014
Trans1 State ID: NYR000134957
Trans2 State ID: PAD982661381

NYSDEC #224142 - INGRAHAM ST SIDEWALK PLUME TRACKDOWN SITE (Continued) **1014399917**

Generator Ship Date:	05/14/2014
Trans1 Recv Date:	05/14/2014
Trans2 Recv Date:	05/16/2014
TSD Site Recv Date:	05/23/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYR000180075
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	PAD085690592
TSDF ID 2:	Not reported
Manifest Tracking Number:	011980172JJK
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H141
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	45
Units:	P - Pounds
Number of Containers:	1
Container Type:	DM - Metal drums, barrels
Handling Method:	B Incineration, heat recovery, burning.
Specific Gravity:	1
Waste Code:	D039
Waste Code 1_2:	D043
Waste Code 1_3:	F002
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

E26 **HYMEL PORTER REALTY** **NY UST** **U004047172**
East **88 PORTER AVENUE** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.058 mi.
304 ft. **Site 1 of 12 in cluster E**

Relative: UST:
Lower

Name:	HYMEL PORTER REALTY
Address:	88 PORTER AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Id/Status:	2-608390 / Unregulated/Closed
Program Type:	PBS

Actual:
18 ft.

HYMEL PORTER REALTY (Continued) **U004047172**

Region: STATE
DEC Region: 2
Expiration Date: N/A
UTM X: 590479.68968
UTM Y: 4506838.01000
Site Type: Apartment Building/Office Building

Affiliation Records:

Site Id: 30242
Affiliation Type: Facility Owner
Company Name: HYMEL PORTER REALTY
Contact Type: VP
Contact Name: ALLAN HOFFMAN
Address1: 105 HARRISON PLACE
Address2: Not reported
City: BROOKLYN
State: NY
Zip Code: 11237
Country Code: 001
Phone: (718) 381-3000
EMail: Not reported
Fax Number: Not reported
Modified By: MSBAPTIS
Date Last Modified: 2010-05-21

Site Id: 30242
Affiliation Type: Mail Contact
Company Name: HYMEL PORTER REALTY
Contact Type: VP
Contact Name: ALLAN HOFFMAN
Address1: 105 HARRISON PLACE
Address2: Not reported
City: BROOKLYN
State: NY
Zip Code: 11237
Country Code: 001
Phone: (718) 381-3000
EMail: Not reported
Fax Number: Not reported
Modified By: MSBAPTIS
Date Last Modified: 2010-05-21

Site Id: 30242
Affiliation Type: Facility Operator
Company Name: HYMEL PORTER REALTY
Contact Type: Not reported
Contact Name: ALLAN HOFFMAN
Address1: Not reported
Address2: Not reported
City: Not reported
State: NN
Zip Code: Not reported
Country Code: 001
Phone: (718) 381-3000
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

HYMEL PORTER REALTY (Continued) **U004047172**

Site Id:	30242
Affiliation Type:	Emergency Contact
Company Name:	HYMEL PORTER REALTY
Contact Type:	Not reported
Contact Name:	ALLAN HOFFMAN
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 381-3000
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	001
Tank ID:	65113
Tank Status:	Closed - In Place
Material Name:	Closed - In Place
Capacity Gallons:	5000
Install Date:	Not reported
Date Tank Closed:	05/21/2010
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)
Tightness Test Method:	00
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	MSBAPTIS
Last Modified:	04/14/2017

Equipment Records:

I05 - Overfill - Vent Whistle
F00 - Pipe External Protection - None
B00 - Tank External Protection - None
H00 - Tank Leak Detection - None
G00 - Tank Secondary Containment - None
C02 - Pipe Location - Underground/On-ground
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
J00 - Dispenser - None

E27 **UNOCCUPIED WAREHOUSE** **NY LTANKS** **S105998052**
East **88 PORTER AVENUE** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.058 mi.
304 ft. **Site 2 of 12 in cluster E**

Relative: LTANKS:
Lower

Actual:
18 ft.

Name:	UNOCCUPIED WAREHOUSE
Address:	88 PORTER AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Spill Number/Closed Date:	0210928 / 2014-11-19
Facility ID:	0210928
Site ID:	209777
Spill Date:	2003-01-31
Spill Cause:	Tank Test Failure
Spill Source:	Commercial/Industrial
Spill Class:	B3
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	VXBREVDO
Referred To:	Not reported
Reported to Dept:	2003-01-31
CID:	390
Water Affected:	Not reported
Spill Notifier:	Tank Tester
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	2003-01-31
Spill Record Last Update:	2014-11-19
Spiller Name:	ALLAN HOFFMAN
Spiller Company:	UNOCCUPIED WAREHOUSE
Spiller Address:	88 PORTER AV
Spiller County:	001
Spiller Contact:	ALLAN HOFFMAN
Spiller Phone:	(718) 381-3000
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	30119
DEC Memo:	"04/19/10 - LZ A TTF letter (eDocs) sent to Hymel Porter Realty. Prior to Sept, 2004 data translation this spill Lead_DEC Field was SANGESLAND 1/30/2003 - DO - To-Do letter sent. Tank is not registered. Owner has received Order on Consent recently. Contact Person: Allan Hoffman Mailing Address: 105 Harrison Place, Brooklyn, NY 11237. 6/20/05- Reassigned to Benjamin 3/2006 - file transferred to region 2. Need to determine status of consent order and investigation in response to to-do letter. 07/16/13 - Spill Case is transferred from Leszek Zielinski (PBS Unit) to V. Brevdo (Section B) as per DER Region 2 decision - Tank Test Failure Spill Case. VB 11/19/2014 - V. Brevdo No spillage, leak, product release occurred in this Tank Test Failure spill case. Tank has been closed in place on 05/21/2010. The location is in the paved industrial park. Exposure risk is unlikely. No known threat to the environment or human health. Spill case is closed effective 11/19/2014. No spill closure letter is issued. VB"
Remarks:	"tank failed test - no spillage"

UNOCCUPIED WAREHOUSE (Continued) **S105998052**

All TTF:

Facility ID:	0210928
Spill Number:	0210928
Spill Tank Test:	1527994
Site ID:	209777
Tank Number:	1
Tank Size:	5000
Material:	0002
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	03
Test Method 2:	Horner EZ Check I or II
Leak Rate:	.00
Gross Fail:	Not reported
Modified By:	Spills
Last Modified Date:	Not reported

All Materials:

Site ID:	209777
Operable Unit ID:	864182
Operable Unit:	01
Material ID:	514297
Material Code:	0002A
Material Name:	#4 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

E28 **CORNELL BEVERAGES INC** **NY LTANKS** **U000394301**
SE **105 HARRISON PLACE** **NY UST** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.058 mi.
307 ft. **Site 3 of 12 in cluster E**

Relative: **Higher**

Actual: **20 ft.**

LTANKS:

Name:	COMMERCIAL
Address:	105 HARRISON PLACE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0706869 / 2008-10-17
Facility ID:	0706869
Site ID:	387468
Spill Date:	2007-09-20
Spill Cause:	Tank Test Failure
Spill Source:	Institutional, Educational, Gov., Other
Spill Class:	C4
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	bkfalvey
Referred To:	Not reported
Reported to Dept:	2007-09-20
CID:	444

CORNELL BEVERAGES INC (Continued) **U000394301**

Water Affected:	Not reported
Spill Notifier:	Tank Tester
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	2007-09-20
Spill Record Last Update:	2008-10-17
Spiller Name:	ALLEN HOFFMAN
Spiller Company:	COMMERCIAL
Spiller Address:	105 HARRISON PLACE
Spiller County:	001
Spiller Contact:	ALLEN HOFFMAN
Spiller Phone:	(718) 381-3000
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	83354
DEC Memo:	"9/21/07 bf: Called Allan Hoffman 718-381-3000 and left message to call me back. Sent ttf letter to: Allan Hoffman Cornell Beverages, Inc. 105 Harrison Place Brooklyn, NY 11237 9/24/07 Received call from Donna Hoffman. Tank failed with a dry leak and the tank is ot in use at this time. She said that she they are working on the repair or closure of the tank. They are not sure which they want to do at this time. She did not know how to proceed on repairs. I told her that her tank company may do repairs and she should contact them or another company. She also wanted to know about closure. I told her it would need to be emptied and cleaned prior to filling it with sand, cement, or foam. If it's removed in place, it would also need emptying and cleaning prior to its removal. I told her I sent Allan Hoffman a letter on Friday explaining how to proceed. bf 10/31/07 On 10/12/07, received letter from A. Hoffman. They are in the process of locating a company to do the repair work. They only fill the tank half full and that was the approximate level at which the test was performed. Leak is a dry leak. he will be having surgery on 10/16 and will be recovering two weeks after that. bf 11/8/07 Received call from A. Hoffman. He requested a list of contractors to repair tank. I faxed him the list and disclaimer. Fax:718-381-3001. bf 4/11/08 received letter from Allan Hoffman of Cornell. Fill box was replaced by Empire Fuel and the work order was attached. Passing tank test results were also attached. 10/15/08 Informed by Alan Hoffman that fill box is above ground so any spills would be visible. bf"
Remarks:	"PBS No: 2-069787 "

All TTF:

Facility ID:	0706869
Spill Number:	0706869
Spill Tank Test:	1764122
Site ID:	387468
Tank Number:	1
Tank Size:	3000
Material:	0001
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	03
Test Method 2:	Horner EZ Check I or II

CORNELL BEVERAGES INC (Continued) **U000394301**

Leak Rate: .00
Gross Fail: Not reported
Modified By: Watchdog
Last Modified Date: Not reported

All Materials:
Site ID: 387468
Operable Unit ID: 1144670
Operable Unit: 01
Material ID: 2134979
Material Code: 0001A
Material Name: #2 fuel oil
Case No.: Not reported
Material FA: Petroleum
Quantity: Not reported
Units: G
Recovered: .00
Oxygenate: Not reported

Name: CORNELL BEVERAGES
Address: 105 HARRISON PLACE
City,State,Zip: BROOKLYN, NY
Spill Number/Closed Date: 9610865 / 2008-10-17
Facility ID: 9610865
Site ID: 92955
Spill Date: 1996-12-03
Spill Cause: Tank Test Failure
Spill Source: Commercial/Industrial
Spill Class: C3
Cleanup Ceased: Not reported
SWIS: 2401
Investigator: KSTANG
Referred To: Not reported
Reported to Dept: 1996-12-03
CID: 266
Water Affected: Not reported
Spill Notifier: Tank Tester
Last Inspection: Not reported
Recommended Penalty: False
Meets Standard: False
UST Involvement: False
Remediation Phase: 0
Date Entered In Computer: 1996-12-03
Spill Record Last Update: 2008-10-22
Spiller Name: ALLAN HOFFMAN
Spiller Company: CORNELL BEVERAGES
Spiller Address: 105 HARRISON PLACE
Spiller County: 001
Spiller Contact: ALLAN HOFFMAN
Spiller Phone: (718) 381-3000
Spiller Extention: Not reported
DEC Region: 2
DER Facility ID: 83354
DEC Memo: "Prior to Sept, 2004 data translation this spill Lead_DEC Field was MULQUEEN 6/30/97 - sent letter 06/16/06: This spill is transferred from Mike Mulqueen to Mr. Koon Tang. 10/17/08 This case is being

CORNELL BEVERAGES INC (Continued) **U000394301**

	closed partly because of lack of information. Tank passed subsequent tests. Property owner, Allan hoffman states in 10/17/08 letter that vent pipe was the cause of failure. He has no other information. bf"
Remarks:	"SPILLER TO BE NOTIFIED. FURTHER TESTING UP TO SPILLER."

All TTF:

Facility ID:	9610865
Spill Number:	9610865
Spill Tank Test:	1544907
Site ID:	92955
Tank Number:	Not reported
Tank Size:	3000
Material:	0001
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	03
Test Method 2:	Horner EZ Check I or II
Leak Rate:	.00
Gross Fail:	F
Modified By:	Spills
Last Modified Date:	Not reported

All Materials:

Site ID:	92955
Operable Unit ID:	1038767
Operable Unit:	01
Material ID:	343084
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

UST:

Name:	CORNELL BEVERAGES INC
Address:	105 HARRISON PLACE
City,State,Zip:	BROOKLYN, NY 11237
Id/Status:	2-069787 / Active
Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	01/14/2022
UTM X:	590502.12919
UTM Y:	4506723.10998
Site Type:	Manufacturing (Other than Chemical)/Processing

Affiliation Records:

Site Id:	1507
Affiliation Type:	Facility Owner
Company Name:	STHM REALTY CORP
Contact Type:	VICE PRESIDENT

CORNELL BEVERAGES INC (Continued) **U000394301**

Contact Name:	ALLAN HOFFMAN
Address1:	105 HARRISON PLACE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(718) 381-3000
EMail:	Not reported
Fax Number:	Not reported
Modified By:	DMPOKRZY
Date Last Modified:	2017-03-06

Site Id:	1507
Affiliation Type:	Mail Contact
Company Name:	CORNELL BEVERAGES INC
Contact Type:	VICE PRESIDENT
Contact Name:	ALLAN HOFFMAN
Address1:	105 HARRISON PLACE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(718) 381-3000
EMail:	ALLAN@CORNELLBEV.COM
Fax Number:	Not reported
Modified By:	DMPOKRZY
Date Last Modified:	2017-03-06

Site Id:	1507
Affiliation Type:	Facility Operator
Company Name:	CORNELL BEVERAGES INC
Contact Type:	Not reported
Contact Name:	ALLAN HOFFMAN
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	999
Phone:	(718) 381-3000
EMail:	Not reported
Fax Number:	Not reported
Modified By:	DXLIVING
Date Last Modified:	2006-11-01

Site Id:	1507
Affiliation Type:	Emergency Contact
Company Name:	CORNELL BEVERAGES INC
Contact Type:	Not reported
Contact Name:	ALLAN HOFFMAN
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported

CORNELL BEVERAGES INC (Continued) **U000394301**

Country Code:	999
Phone:	(718) 381-3000
EMail:	Not reported
Fax Number:	Not reported
Modified By:	DXLIVING
Date Last Modified:	2006-11-01

Tank Info:

Tank Number:	001
Tank ID:	2581
Tank Status:	In Service
Material Name:	In Service
Capacity Gallons:	3000
Install Date:	01/01/1960
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)
Tightness Test Method:	99
Date Test:	12/22/2016
Next Test Date:	12/22/2017
Pipe Model:	Not reported
Modified By:	TLYE
Last Modified:	02/01/2018

Equipment Records:

L09 - Piping Leak Detection - Exempt Suction Piping
E00 - Piping Secondary Containment - None
H00 - Tank Leak Detection - None
F00 - Pipe External Protection - None
B00 - Tank External Protection - None
I04 - Overfill - Product Level Gauge (A/G)
J02 - Dispenser - Suction Dispenser
C03 - Pipe Location - Aboveground/Underground Combination
G00 - Tank Secondary Containment - None
I05 - Overfill - Vent Whistle
K00 - Spill Prevention - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
A00 - Tank Internal Protection - None

D29 **RAPID READY MIX SUPPLY CORP** **NY AST** **A100320213**
SW **46 KNICKERBOCKER AVENUE** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.061 mi.
320 ft. **Site 3 of 9 in cluster D**

Relative:
Higher

Actual:
22 ft.

AST:

Name:	RAPID READY MIX SUPPLY CORP
Address:	46 KNICKERBOCKER AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Region:	STATE
DEC Region:	2
Site Status:	Active
Facility Id:	2-610837

RAPID READY MIX SUPPLY CORP (Continued) **A100320213**

Program Type:	PBS
UTM X:	590294.09099
UTM Y:	4506741.35780
Expiration Date:	05/20/2013
Site Type:	Other

Affiliation Records:

Site Id:	398007
Affiliation Type:	Facility Owner
Company Name:	ROCCO MANZIONE
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	PO BOX 412
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(718) 497-5020
EMail:	Not reported
Fax Number:	Not reported
Modified By:	NRLOMBAR
Date Last Modified:	2008-05-20

Site Id:	398007
Affiliation Type:	Mail Contact
Company Name:	RAPID READY MIX SUPPLY CORP.
Contact Type:	Not reported
Contact Name:	VICTOR BUDHAI
Address1:	P.O. BOX 412
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(718) 497-5020
EMail:	ADVANCEDREADYMIX@AOL.COM
Fax Number:	Not reported
Modified By:	NRLOMBAR
Date Last Modified:	2008-05-20

Site Id:	398007
Affiliation Type:	Facility Operator
Company Name:	RAPID READY MIX SUPPLY CORP
Contact Type:	Not reported
Contact Name:	MICHAEL MAZZARELLA
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 628-3837
EMail:	Not reported
Fax Number:	Not reported
Modified By:	NRLOMBAR
Date Last Modified:	2008-05-20

RAPID READY MIX SUPPLY CORP (Continued) **A100320213**

Site Id:	398007
Affiliation Type:	Emergency Contact
Company Name:	ROCCO MANZIONE
Contact Type:	Not reported
Contact Name:	VICTOR BUDHAI
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 497-5020
EMail:	Not reported
Fax Number:	Not reported
Modified By:	NRLOMBAR
Date Last Modified:	2008-05-20

Tank Info:

Tank Number:	46
Tank Id:	223083
Material Code:	0022
Common Name of Substance:	Waste Oil/Used Oil

Equipment Records:

	C01 - Pipe Location - Aboveground E04 - Piping Secondary Containment - Double walled UG H02 - Tank Leak Detection - Interstitial - Manual Monitoring G01 - Tank Secondary Containment - Diking (Aboveground) J03 - Dispenser - Gravity F05 - Pipe External Protection - Jacketed I04 - Overfill - Product Level Gauge (A/G) B01 - Tank External Protection - Painted/Asphalt Coating D01 - Pipe Type - Steel/Carbon Steel/Iron L02 - Piping Leak Detection - Interstitial - Manual Monitoring
Tank Location:	Aboveground - contact with impervious barrier... Tank bottom rests on impervious barrier, allowing visual indication of leaks.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	In Service
Pipe Model:	B
Install Date:	05/09/2008
Capacity Gallons:	275
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	Not reported
Register:	True
Modified By:	NRLOMBAR
Last Modified:	04/14/2017
Material Name:	waste oil/used oil

Tank Number:	47
Tank Id:	223084
Material Code:	0022
Common Name of Substance:	Waste Oil/Used Oil

RAPID READY MIX SUPPLY CORP (Continued) **A100320213**

Equipment Records:

E04 - Piping Secondary Containment - Double walled UG
H02 - Tank Leak Detection - Interstitial - Manual Monitoring
C01 - Pipe Location - Aboveground
F05 - Pipe External Protection - Jacketed
I04 - Overfill - Product Level Gauge (A/G)
G01 - Tank Secondary Containment - Diking (Aboveground)
J03 - Dispenser - Gravity
B01 - Tank External Protection - Painted/Asphalt Coating
D01 - Pipe Type - Steel/Carbon Steel/Iron
L02 - Piping Leak Detection - Interstitial - Manual Monitoring

Tank Location:	Aboveground - contact with impervious barrier... Tank bottom rests on impervious barrier, allowing visual indication of leaks.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	In Service
Pipe Model:	B
Install Date:	05/09/2008
Capacity Gallons:	300
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	Not reported
Register:	True
Modified By:	NRLOMBAR
Last Modified:	04/14/2017
Material Name:	waste oil/used oil

C30 **VERIZON MANHOLE 262 LOG 34293** **RCRA NonGen / NLR** **1014917864**
ENE **JOHNSON & PORTER AVE** **NYP000963280**
< 1/8 **BROOKLYN, NY 11237**
0.061 mi.
324 ft. **Site 3 of 5 in cluster C**

Relative: **Lower**

Actual: **12 ft.**

RCRA NonGen / NLR:

Date form received by agency:	06/12/2008
Facility name:	VERIZON MANHOLE 262 LOG 34293
Facility address:	JOHNSON & PORTER AVE BROOKLYN, NY 11237
EPA ID:	NYP000963280
Mailing address:	HANSE AVE FREEPORT, NY 11520
Contact:	JOHN QUATRALE
Contact address:	HANSE AVE FREEPORT, NY 11520
Contact country:	US
Contact telephone:	516-292-8166
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No

VERIZON MANHOLE 262 LOG 34293 (Continued) **1014917864**

Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

C31 **CON EDISON** **NY MANIFEST** **S117537440**
ENE **JOHNSON AVE & PORTER AVE** **N/A**
< 1/8 **BROOKLYN, NY 11206**
0.061 mi.
324 ft. **Site 4 of 5 in cluster C**

Relative:
Lower

Actual:
12 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004700027
Facility Status:	Not reported
Location Address 1:	JOHNSON AVE & PORTER AVE
Code:	BP
Location Address 2:	V 5986
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11206
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004700027
Mailing Name:	CON EDISON
Mailing Contact:	TOM TEELING
Mailing Address 1:	4 IRVING PLACE - 15TH FLOOR
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJ0000027193
Trans2 State ID:	Not reported
Generator Ship Date:	11/26/2014
Trans1 Recv Date:	11/26/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	11/26/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004700027

CON EDISON (Continued) **S117537440**

Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD002200046
TSDF ID 2:	Not reported
Manifest Tracking Number:	012773766JJK
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	1500
Units:	P - Pounds
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

C32 **CON EDISON** **NY MANIFEST** **S117535562**
ENE **JOHNSON & PORTER AV** **N/A**
< 1/8 **BROOKLYN, NY 11201**
0.061 mi.
324 ft. **Site 5 of 5 in cluster C**

Relative: NY MANIFEST:
Lower

Country:	USA
EPA ID:	NYP004670027
Facility Status:	Not reported
Location Address 1:	JOHNSON & PORTER AV
Code:	BP
Location Address 2:	MHV5986
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11201
Location Zip 4:	Not reported

Actual:
12 ft.

CON EDISON (Continued) **S117535562**

NY MANIFEST:

EPAID:	NYP004670027
Mailing Name:	CON EDISON
Mailing Contact:	CON EDISON
Mailing Address 1:	4 IRVING PL
Mailing Address 2:	15TH FL
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

E33 **INGRAHM STREET** **NY Spills** **S107657304**
East **INGRAHM STREET/PORTER** **N/A**
< 1/8 **BROOKLYN, NY**
0.062 mi.
325 ft. **Site 4 of 12 in cluster E**

Relative: **Lower**

Actual: **18 ft.**

SPILLS:

Name:	INGRAHM STREET
Address:	INGRAHM STREET/PORTER
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0513812 / 2006-03-10
Facility ID:	0513812
Facility Type:	ER
DER Facility ID:	310495
Site ID:	360360
DEC Region:	2
Spill Cause:	Abandoned Drums
Spill Class:	C3
SWIS:	2401
Spill Date:	2006-03-02
Investigator:	SFRAHMAN
Referred To:	Not reported
Reported to Dept:	2006-03-02
CID:	444
Water Affected:	Not reported
Spill Source:	Unknown
Spill Notifier:	Other
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2006-03-02
Spill Record Last Update:	2006-03-10
Spiller Name:	SAILSAL
Spiller Company:	ON SIDEWALK
Spiller Address:	INGRAHM STREET/PORTER
Spiller Company:	001
Contact Name:	SAILSAL

INGRAHM STREET (Continued) **S107657304**

DEC Memo: "added to drum run. 03.10.06 Sharif Rahman-Drum found-was pumped out."
Not reported
Remarks: "1 DRUM NEEDS TO BE PICKED UP"

All Materials:
Site ID: 360360
Operable Unit ID: 1117531
Operable Unit: 01
Material ID: 2108043
Material Code: 0022
Material Name: waste oil/used oil
Case No.: Not reported
Material FA: Petroleum
Quantity: .00
Units: G
Recovered: .00
Oxygenate: Not reported

D34 **U. S. WASTE MANAGEMENT; INC.** **NY SWF/LF** **S105841758**
SW **48 KNICKERBOCKER (69 INGRAHAM ST)** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.062 mi.
326 ft. **Site 4 of 9 in cluster D**

Relative:
Higher

Actual:
22 ft.

SWF/LF:
Flag: INACTIVE
Region Code: 2
Phone Number: 7188212422
Owner Name: Not reported
Owner Type: Not reported
Owner Address: Not reported
Owner Addr2: Not reported
Owner City,St,Zip: Not reported
Owner Email: Not reported
Owner Phone: Not reported
Contact Name: PETER SANTOS; PRESIDENT
Contact Address: Not reported
Contact Addr2: Not reported
Contact City,St,Zip: Not reported
Contact Email: Not reported
Contact Phone: Not reported
Activity Desc: z Retired - Transfer station - permit
Activity Number: [24TA4]
Active: No
East Coordinate: 590400
North Coordinate: 4506700
Accuracy Code: Not reported
Regulatory Status: Not reported
Waste Type: Not reported
Authorization #: 2-6104-00176
Authorization Date: Not reported
Expiration Date: Not reported
Operator Name: Not reported
Operator Type: Not reported
Laste Date: Not reported

B35
West
< 1/8
0.062 mi.
328 ft.

KNICKERBOCKER & JOHNSON
KNICKERBOCKER AVE #68284
BROOKLYN, NY

Site 9 of 9 in cluster B

NY Spills **S102150002**
N/A

Relative:
Lower

Actual:
17 ft.

SPILLS:

Name:	KNICKERBOCKER & JOHNSON
Address:	KNICKERBOCKER AVE #68284
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9501020 / 1995-04-25
Facility ID:	9501020
Facility Type:	ER
DER Facility ID:	58993
Site ID:	60430
DEC Region:	2
Spill Cause:	Deliberate
Spill Class:	C3
SWIS:	2401
Spill Date:	1995-04-24
Investigator:	SIGONA
Referred To:	Not reported
Reported to Dept:	1995-04-24
CID:	Not reported
Water Affected:	Not reported
Spill Source:	Unknown
Spill Notifier:	Affected Persons
Cleanup Ceased:	1995-04-25
Cleanup Meets Std:	True
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	1995-05-09
Spill Record Last Update:	1995-05-16
Spiller Name:	Not reported
Spiller Company:	UNKNOWN
Spiller Address:	Not reported
Spiller Company:	999
Contact Name:	Not reported
DEC Memo:	""
Remarks:	"SERVICE BOX OF ANTIFREEZE HAS BEEN OVER CLOWED INTO STORM SEWER. BELIEVE TO BE DELIBERATE SPILL - NOT CON EDISON."

All Materials:

Site ID:	60430
Operable Unit ID:	1015138
Operable Unit:	01
Material ID:	369633
Material Code:	0043A
Material Name:	antifreeze
Case No.:	Not reported
Material FA:	Other
Quantity:	.00
Units:	Not reported
Recovered:	.00
Oxygenate:	Not reported

Site ID:	60430
Operable Unit ID:	1015138

KNICKERBOCKER & JOHNSON (Continued) **S102150002**

Operable Unit:	01
Material ID:	369632
Material Code:	0066A
Material Name:	unknown petroleum
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	-1.00
Units:	Not reported
Recovered:	.00
Oxygenate:	Not reported

E36 **CORNISH MINI MILLS** **NY LTANKS** **S102232671**
East **121 INGRAHAM ST** **N/A**
< 1/8 **BROOKLYN, NY**
0.064 mi.
338 ft. **Site 5 of 12 in cluster E**

Relative: LTANKS:
Lower

Actual: **17 ft.**

Name:	CORNISH MINI MILLS
Address:	121 INGRAHAM ST
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9600503 / 1996-11-22
Facility ID:	9600503
Site ID:	239705
Spill Date:	1996-04-11
Spill Cause:	Tank Test Failure
Spill Source:	Institutional, Educational, Gov., Other
Spill Class:	C4
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	MCTIBBE
Referred To:	Not reported
Reported to Dept:	1996-04-11
CID:	270
Water Affected:	Not reported
Spill Notifier:	Affected Persons
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	1996-04-11
Spill Record Last Update:	2000-04-25
Spiller Name:	H2M GROUP
Spiller Company:	CORNISH MINI MILLS
Spiller Address:	121 INGRAHAM ST
Spiller County:	001
Spiller Contact:	H2M GROUP
Spiller Phone:	(516) 756-8000
Spiller Extention:	484
DEC Region:	2
DER Facility ID:	197159
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was TIBBE HAS A PLATE THAT IS JUST BOLTED DOWN. NO SPILL."
Remarks:	"facility has two tank on site 5000 gal tank was not tested but deemed un testable"

CORNISH MINI MILLS (Continued) **S102232671**

All TTF:

Facility ID:	9600503
Spill Number:	9600503
Spill Tank Test:	1544470
Site ID:	239705
Tank Number:	1
Tank Size:	10000
Material:	0001
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	01
Test Method 2:	Petro-Tite/Petro Comp
Leak Rate:	.00
Gross Fail:	Not reported
Modified By:	Spills
Last Modified Date:	Not reported

All Materials:

Site ID:	239705
Operable Unit ID:	1031931
Operable Unit:	01
Material ID:	353898
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

E37 **CORNISH KNIT GOODS** **RCRA-CESQG** **1000316254**
East **PORTER AVE** **NY UST** **NYD001683457**
< 1/8 **BROOKLYN, NY 11237** **FINDS**
0.064 mi. **ECHO**
338 ft. **Site 6 of 12 in cluster E** **NY MANIFEST**

Relative:
Lower

Actual:
17 ft.

RCRA-CESQG:

Date form received by agency:	01/01/2007
Facility name:	CORNISH KNIT GOODS
Facility address:	PORTER AVE BROOKLYN, NY 11237
EPA ID:	NYD001683457
Mailing address:	FREDERICK DOUGLASS BLVD NEW YORK, NY 10039
Contact:	VINCENT ZAZA
Contact address:	FREDERICK DOUGLASS BLVD NEW YORK, NY 10039
Contact country:	US
Contact telephone:	201-690-6480
Telephone ext.:	102
Contact email:	VZAZA@DOE.ORG
EPA Region:	02
Land type:	Private

CORNISH KNIT GOODS (Continued) **1000316254**

Classification: Conditionally Exempt Small Quantity Generator
Description: Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

Owner/Operator Summary:
Owner/operator name: THE DOE FUND INC
Owner/operator address: E 84TH ST
NEW YORK, NY 10028
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 05/01/2002
Owner/Op end date: Not reported

Owner/operator name: THE DOE FUND INC/HERB S STRENG
Owner/operator address: E 84TH ST
NEW YORK, NY 10028
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 05/01/2002
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No

CORNISH KNIT GOODS (Continued) **1000316254**

Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:

Date form received by agency: 01/01/2006
Site name: CORNISH KNIT GOODS
Classification: Small Quantity Generator

Date form received by agency: 02/20/2004
Site name: CORNISH KNIT GOODS
Classification: Large Quantity Generator

Date form received by agency: 07/08/1999
Site name: CORNISH KNITGOODS MANUFACTORING CORP
Classification: Not a generator, verified

Date form received by agency: 03/01/1990
Site name: CORNISH KNITGOODS MANUFACTURING CORP
Classification: Large Quantity Generator

Date form received by agency: 09/11/1984
Site name: CORNISH KNITGOODS MANUFACTORING CORP
Classification: Large Quantity Generator

Hazardous Waste Summary:

. Waste code: F001
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE, TRICHLORETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE AND CHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F002
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2, TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Violation Status: No violations found

Evaluation Action Summary:

Evaluation date: 06/22/2004
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

CORNISH KNIT GOODS (Continued) **1000316254**

Evaluation date: 01/19/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

UST:
Name: PORTER AVENUE TRANSITIONAL RESIDENCE
Address: 121 INGRAHAM STREET
City,State,Zip: BROOKLYN, NY 11237
Id/Status: 2-032921 / Inactive
Program Type: PBS
Region: STATE
DEC Region: 2
Expiration Date: N/A
UTM X: 590536.76557
UTM Y: 4506808.18035
Site Type: Manufacturing (Other than Chemical)/Processing

Affiliation Records:
Site Id: 255
Affiliation Type: Facility Owner
Company Name: PORTER AVENUE HOUSING DEV. FUND CORP.
Contact Type: Not reported
Contact Name: Not reported
Address1: 232 EAST 84TH STREET
Address2: Not reported
City: NEW YORK
State: NY
Zip Code: 10028
Country Code: 001
Phone: (212) 628-5207
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 255
Affiliation Type: Mail Contact
Company Name: PORTER AVE HDFC
Contact Type: Not reported
Contact Name: VINCENT ZAZA
Address1: 2960 FREDERICK DOUGLAS BLVD
Address2: Not reported
City: NEW YORK
State: NY
Zip Code: 10039
Country Code: 001
Phone: (212) 690-6480
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 255
Affiliation Type: Facility Operator
Company Name: PORTER AVENUE TRANSITIONAL RESIDENCE
Contact Type: Not reported

CORNISH KNIT GOODS (Continued) **1000316254**

Contact Name:	VINCENT ZAZA
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(212) 690-6480
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	255
Affiliation Type:	Emergency Contact
Company Name:	PORTER AVENUE HOUSING DEV. FUND CORP.
Contact Type:	Not reported
Contact Name:	VINCENT ZAZA
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(212) 690-6480
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	001
Tank ID:	27137
Tank Status:	Tank Converted to Non-Regulated Use
Material Name:	Tank Converted to Non-Regulated Use
Capacity Gallons:	10000
Install Date:	07/01/1972
Date Tank Closed:	09/09/2002
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser

CORNISH KNIT GOODS (Continued) **1000316254**

B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Number: 002
Tank ID: 27138
Tank Status: Tank Converted to Non-Regulated Use
Material Name: Tank Converted to Non-Regulated Use
Capacity Gallons: 5000
Install Date: 05/01/1970
Date Tank Closed: 09/09/2002
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0001
Common Name of Substance: #2 Fuel Oil (On-Site Consumption)

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

FINDS:

Registry ID: 110064241299

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZARDOUS WASTE BIENNIAL REPORTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

CORNISH KNIT GOODS (Continued) **1000316254**

ECHO:
- Envid: 1000316254
- Registry ID: 110064241299
- DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110064241299

NY MANIFEST:
- Country: USA
- EPA ID: NYD001683457
- Facility Status: Not reported
- Location Address 1: 121 INGRAHAM STREET
- Code: BP
- Location Address 2: Not reported
- Total Tanks: Not reported
- Location City: BROOKLYN
- Location State: NY
- Location Zip: 11237
- Location Zip 4: Not reported

NY MANIFEST:
- EPAID: NYD001683457
- Mailing Name: CORNISH KNITGOODS MANUFACTURING CORP
- Mailing Contact: VINCENT ZAZA
- Mailing Address 1: 121 INGRAHAM STREET
- Mailing Address 2: Not reported
- Mailing City: BROOKLYN
- Mailing State: NY
- Mailing Zip: 11237
- Mailing Zip 4: Not reported
- Mailing Country: USA
- Mailing Phone: 2124971268

NY MANIFEST:
- Document ID: Not reported
- Manifest Status: Not reported
- seq: Not reported
- Year: 2010
- Trans1 State ID: PAD146714878
- Trans2 State ID: Not reported
- Generator Ship Date: 09/01/2010
- Trans1 Recv Date: 09/01/2010
- Trans2 Recv Date: Not reported
- TSD Site Recv Date: 09/10/2010
- Part A Recv Date: Not reported
- Part B Recv Date: Not reported
- Generator EPA ID: NYD001683457
- Trans1 EPA ID: Not reported
- Trans2 EPA ID: Not reported
- TSDF ID 1: PAD987270725
- TSDF ID 2: Not reported
- Manifest Tracking Number: 000171707JJK
- Import Indicator: N
- Export Indicator: N
- Discr Quantity Indicator: N
- Discr Type Indicator: N
- Discr Residue Indicator: N
- Discr Partial Reject Indicator: N

CORNISH KNIT GOODS (Continued) **1000316254**

Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H039
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	300.0
Units:	P - Pounds
Number of Containers:	2.0
Container Type:	DM - Metal drums, barrels
Handling Method:	R Material recovery of more than 75 percent of the total material.
Specific Gravity:	1.0
Waste Code:	F001
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

E38
East
< 1/8
0.064 mi.
338 ft.

CORNISH KNIT GOODS/CORNISH MINI-MILLS
121 INGRAHAM ST./89 PORTER AVE.
BROOKLYN, NY 11237

NY ENG CONTROLS **S110043685**
NY INST CONTROL **N/A**
NY VCP

Site 7 of 12 in cluster E

Relative:
Lower

Actual:
17 ft.

ENG CONTROLS:

Name:	CORNISH KNIT GOODS/CORNISH MINI-MILLS
Address:	121 INGRAHAM ST./89 PORTER AVE.
City,State,Zip:	BROOKLYN, NY 11237
Site Code:	58133
HW Code:	V00409
Control Code:	15
Control Type:	ENG
Date Record Added:	05/10/2010
Date Rec Updated:	04/16/2019
Updated By:	MXMAGLOI
Site Description:	Location: The Cornish Knit Goods/Cornish Mini-Mills site is located at 89 Porter Avenue, Brooklyn, NY. The former address of this site was 121 Ingraham Street/89-111 Porter Ave. The 0.57 acre site is in East Williamsburg, an urban area of Brooklyn. The tax map identifies the site as Block 2993, Lot 1. The site is bordered by Porter Avenue to the west, by Ingraham Street to the south, by Joyva Candy Factory's parking lot to the east, and by Johnson Avenue to the north. Site Features: The site is completely covered by a four story building, which was renovated in order to be designated for restricted residential use. Current zoning/use(s): The site is in an area zoned M1-2, light manufacturing. The site building is currently operated as the Peter Jay Sharp Center for Opportunity (PJSCO). The building is used as shelter and rehabilitation center for homeless

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

men. The surrounding parcels are currently used for a combination of commercial, industrial and residential. Historical Use(s): Until 1980 the property was operated by Cornish Knit Goods/Cornish Mini-Mills as a textile factory. From 1980 until 1995, the building was vacant, and it was illegally operated as a dry cleaning facility and as a stolen car scrap yard. In 2000, the property was owned by ABC Closing Corp. and the owner entered in a Voluntary Cleanup Agreement (VCA) with NYSDEC. In 2003, site ownership was transferred to Porter Avenue HDFC, a subsidiary of the DOE Fund, Inc., and the VCA was amended to reflect the change in ownership. Dry cleaning activities and uncontrolled disposal of waste solvents (perchloroethylene, or PCE, and its breakdown product trichloroethylene, or TCE) led to contamination of the soil and groundwater at the site. Site Geology and Hydrogeology: The surficial geology in the vicinity of the site is characterized by layered loose sediment. Soils recovered from the western portion of the site appear to be loose sands and sediments to approximately nine feet below ground surface (bgs) mixed with fill material such as gravels, brick, and old timbers. From 9 feet bgs to the top of the water table (approximately 13 feet bgs), soils are compact clays and sands. Soils recovered from drilling in the eastern portion of the site were characterized as fill. Groundwater depth ranges from 7 feet below ground surface (ft bgs) at the northwest portion of the site, 11-11.5 ft bgs across the western portion of the site, and 12-12.5 ft bgs across the southeast portion of the site.

Env Problem: Nature and Extent of the Contamination: Post-Remediation: Remediation at the site is complete. Prior to remediation, the primary contaminants of concern at the site included the volatile organic compounds (VOCs) tetrachloroethylene (PCE) and its degradation products trichloroethene (TCE), cis-1,2-dichloroethene (DCE) and vinyl chloride (VC) in soil, groundwater and soil vapor. A vapor barrier and an Air Sparge/Soil Vapor Extraction System (AS/SVES) were installed and are operating on site to mitigate the remaining PCE and TCE contamination in soil vapor. Remaining contamination in soil and groundwater is being managed under a Site Management Plan.

Health Problem: Groundwater beneath the site is contaminated with volatile organic compounds (VOCs), primarily tetrachloroethene (PCE), at levels above NYS drinking water standards. There are no active public water supply wells within a one mile radius of the site and public exposure to contaminated groundwater is unlikely because all businesses and residences are supplied by public water. Exposure to contaminated soil is not expected since the site is covered by buildings and is paved. A vapor barrier and active soil vapor extraction system is at the site to prevent exposures from soil vapor intrusion.

Dump: False
Structure: True
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported
Record Add: 2009-11-30 14:48:00
Record Upd: 2011-04-11 15:21:00
Updated By: IXMUNTEA
Own Op: Owner
Sub Type: 06

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

Owner Name:	Stephen M. Starensier AIA, CSI
Owner Company:	The DOE Fund, Inc.
Owner Address:	345 East 102nd Street
Owner Addr2:	Not reported
Owner City,St,Zip:	New York, NY 10029
Owner Country:	United States of America
Own Op:	On-Site Operator
Sub Type:	E
Owner Name:	Giana Gigante
Owner Company:	Porter Avenue HDFC A DIV. OF DOE FUND Inc.
Owner Address:	345 EAST 102ND STREET, 3RD FLOOR
Owner Addr2:	Not reported
Owner City,St,Zip:	NEW YORK, NY 10029
Owner Country:	United States of America
Own Op:	Applicant/Requestor
Sub Type:	P03
Owner Name:	John Mc Donnel
Owner Company:	The DOE Fund, Inc.
Owner Address:	345 East 102nd Street, Third Floor
Owner Addr2:	Not reported
Owner City,St,Zip:	New York, NY 10029
Owner Country:	United States of America
HW Code:	V00409
Waste Type:	1,1,1,2-TETRACHLOROETHANE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	Hazardous Substances
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	1,1 Dichloroethene
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	CHROMIUM
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	DICHLOROETHYLENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	METHYL CHLORIDE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	VINYL CHLORIDE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
Crossref ID:	00-TEMP-03-24(I
Cross Ref Type Code:	20
Cross Ref Type:	Haz. Substance ID
Record Added Date:	2000-11-30 16:07:00
Record Updated:	2005-02-24 15:54:00
Updated By:	VCPTRANS
Crossref ID:	2010000128456

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

Cross Ref Type Code:	25
Cross Ref Type:	County Recording Identifier
Record Added Date:	2011-04-13 14:06:00
Record Updated:	2011-04-13 14:06:00
Updated By:	JHOCONNE
Name:	CORNISH KNIT GOODS/CORNISH MINI-MILLS
Address:	121 INGRAHAM ST./89 PORTER AVE.
City,State,Zip:	BROOKLYN, NY 11237
Site Code:	58133
HW Code:	V00409
Control Code:	13
Control Type:	ENG
Date Record Added:	05/10/2010
Date Rec Updated:	04/16/2019
Updated By:	MXMAGLOI
Site Description:	Location: The Cornish Knit Goods/Cornish Mini-Mills site is located at 89 Porter Avenue, Brooklyn, NY. The former address of this site was 121 Ingraham Street/89-111 Porter Ave. The 0.57 acre site is in East Williamsburg, an urban area of Brooklyn. The tax map identifies the site as Block 2993, Lot 1. The site is bordered by Porter Avenue to the west, by Ingraham Street to the south, by Joyva Candy Factory's parking lot to the east, and by Johnson Avenue to the north. Site Features: The site is completely covered by a four story building, which was renovated in order to be designated for restricted residential use. Current zoning/use(s): The site is in an area zoned M1-2, light manufacturing. The site building is currently operated as the Peter Jay Sharp Center for Opportunity (PJSCO). The building is used as shelter and rehabilitation center for homeless men. The surrounding parcels are currently used for a combination of commercial, industrial and residential. Historical Use(s): Until 1980 the property was operated by Cornish Knit Goods/Cornish Mini-Mills as a textile factory. From 1980 until 1995, the building was vacant, and it was illegally operated as a dry cleaning facility and as a stolen car scrap yard. In 2000, the property was owned by ABC Closing Corp. and the owner entered in a Voluntary Cleanup Agreement (VCA) with NYSDEC. In 2003, site ownership was transferred to Porter Avenue HDFC, a subsidiary of the DOE Fund, Inc., and the VCA was amended to reflect the change in ownership. Dry cleaning activities and uncontrolled disposal of waste solvents (perchloroethylene, or PCE, and its breakdown product trichloroethylene, or TCE) led to contamination of the soil and groundwater at the site. Site Geology and Hydrogeology: The surficial geology in the vicinity of the site is characterized by layered loose sediment. Soils recovered from the western portion of the site appear to be loose sands and sediments to approximately nine feet below ground surface (bgs) mixed with fill material such as gravels, brick, and old timbers. From 9 feet bgs to the top of the water table (approximately 13 feet bgs), soils are compact clays and sands. Soils recovered from drilling in the eastern portion of the site were characterized as fill. Groundwater depth ranges from 7 feet below ground surface (ft bgs) at the northwest portion of the site, 11-11.5 ft bgs across the western portion of the site, and 12-12.5 ft bgs across the southeast portion of the site.
Env Problem:	Nature and Extent of the Contamination: Post-Remediation: Remediation at the site is complete. Prior to remediation, the primary contaminants of concern at the site included the volatile organic compounds (VOCs) tetrachloroethylene (PCE) and its degradation

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

products trichloroethene (TCE), cis-1,2-dichloroethene (DCE) and vinyl chloride (VC) in soil, groundwater and soil vapor. A vapor barrier and an Air Sparge/Soil Vapor Extraction System (AS/SVES) were installed and are operating on site to mitigate the remaining PCE and TCE contamination in soil vapor. Remaining contamination in soil and groundwater is being managed under a Site Management Plan.

Health Problem:	Groundwater beneath the site is contaminated with volatile organic compounds (VOCs), primarily tetrachloroethene (PCE), at levels above NYS drinking water standards. There are no active public water supply wells within a one mile radius of the site and public exposure to contaminated groundwater is unlikely because all businesses and residences are supplied by public water. Exposure to contaminated soil is not expected since the site is covered by buildings and is paved. A vapor barrier and active soil vapor extraction system is at the site to prevent exposures from soil vapor intrusion.
Dump:	False
Structure:	True
Lagoon:	False
Landfill:	False
Pond:	False
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	Not reported
Dell:	Not reported
Record Add:	2009-11-30 14:48:00
Record Upd:	2011-04-11 15:21:00
Updated By:	IXMUNTEA
Own Op:	Owner
Sub Type:	06
Owner Name:	Stephen M. Starensier AIA, CSI
Owner Company:	The DOE Fund, Inc.
Owner Address:	345 East 102nd Street
Owner Addr2:	Not reported
Owner City,St,Zip:	New York, NY 10029
Owner Country:	United States of America
Own Op:	On-Site Operator
Sub Type:	E
Owner Name:	Giana Gigante
Owner Company:	Porter Avenue HDFC A DIV. OF DOE FUND Inc.
Owner Address:	345 EAST 102ND STREET, 3RD FLOOR
Owner Addr2:	Not reported
Owner City,St,Zip:	NEW YORK, NY 10029
Owner Country:	United States of America
Own Op:	Applicant/Requestor
Sub Type:	P03
Owner Name:	John Mc Donnel
Owner Company:	The DOE Fund, Inc.
Owner Address:	345 East 102nd Street, Third Floor
Owner Addr2:	Not reported
Owner City,St,Zip:	New York, NY 10029
Owner Country:	United States of America
HW Code:	V00409
Waste Type:	1,1,1,2-TETRACHLOROETHANE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	Hazardous Substances

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	1,1 Dichloroethene
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	CHROMIUM
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	DICHLOROETHYLENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	METHYL CHLORIDE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	VINYL CHLORIDE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
Crossref ID:	00-TEMP-03-24(I
Cross Ref Type Code:	20
Cross Ref Type:	Haz. Substance ID
Record Added Date:	2000-11-30 16:07:00
Record Updated:	2005-02-24 15:54:00
Updated By:	VCPTRANS
Crossref ID:	2010000128456
Cross Ref Type Code:	25
Cross Ref Type:	County Recording Identifier
Record Added Date:	2011-04-13 14:06:00
Record Updated:	2011-04-13 14:06:00
Updated By:	JHOCONNE

Name:	CORNISH KNIT GOODS/CORNISH MINI-MILLS
Address:	121 INGRAHAM ST./89 PORTER AVE.
City,State,Zip:	BROOKLYN, NY 11237
Site Code:	58133
HW Code:	V00409
Control Code:	22
Control Type:	ENG
Date Record Added:	01/21/2009
Date Rec Updated:	04/16/2019
Updated By:	MXMAGLOI
Site Description:	Location: The Cornish Knit Goods/Cornish Mini-Mills site is located at 89 Porter Avenue, Brooklyn, NY. The former address of this site was 121 Ingraham Street/89-111 Porter Ave. The 0.57 acre site is in East Williamsburg, an urban area of Brooklyn. The tax map identifies the site as Block 2993, Lot 1. The site is bordered by Porter Avenue to the west, by Ingraham Street to the south, by Joyva Candy Factory's parking lot to the east, and by Johnson Avenue to the north. Site Features: The site is completely covered by a four story building, which was renovated in order to be designated for restricted residential use. Current zoning/use(s): The site is in an area zoned M1-2, light manufacturing. The site building is currently operated as the Peter Jay Sharp Center for Opportunity (PJSCO). The

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

building is used as shelter and rehabilitation center for homeless men. The surrounding parcels are currently used for a combination of commercial, industrial and residential. Historical Use(s): Until 1980 the property was operated by Cornish Knit Goods/Cornish Mini-Mills as a textile factory. From 1980 until 1995, the building was vacant, and it was illegally operated as a dry cleaning facility and as a stolen car scrap yard. In 2000, the property was owned by ABC Closing Corp. and the owner entered in a Voluntary Cleanup Agreement (VCA) with NYSDEC. In 2003, site ownership was transferred to Porter Avenue HDFC, a subsidiary of the DOE Fund, Inc., and the VCA was amended to reflect the change in ownership. Dry cleaning activities and uncontrolled disposal of waste solvents (perchloroethylene, or PCE, and its breakdown product trichloroethylene, or TCE) led to contamination of the soil and groundwater at the site. Site Geology and Hydrogeology: The surficial geology in the vicinity of the site is characterized by layered loose sediment. Soils recovered from the western portion of the site appear to be loose sands and sediments to approximately nine feet below ground surface (bgs) mixed with fill material such as gravels, brick, and old timbers. From 9 feet bgs to the top of the water table (approximately 13 feet bgs), soils are compact clays and sands. Soils recovered from drilling in the eastern portion of the site were characterized as fill. Groundwater depth ranges from 7 feet below ground surface (ft bgs) at the northwest portion of the site, 11-11.5 ft bgs across the western portion of the site, and 12-12.5 ft bgs across the southeast portion of the site.

Env Problem: Nature and Extent of the Contamination: Post-Remediation: Remediation at the site is complete. Prior to remediation, the primary contaminants of concern at the site included the volatile organic compounds (VOCs) tetrachloroethylene (PCE) and its degradation products trichloroethene (TCE), cis-1,2-dichloroethene (DCE) and vinyl chloride (VC) in soil, groundwater and soil vapor. A vapor barrier and an Air Sparge/Soil Vapor Extraction System (AS/SVES) were installed and are operating on site to mitigate the remaining PCE and TCE contamination in soil vapor. Remaining contamination in soil and groundwater is being managed under a Site Management Plan.

Health Problem: Groundwater beneath the site is contaminated with volatile organic compounds (VOCs), primarily tetrachloroethene (PCE), at levels above NYS drinking water standards. There are no active public water supply wells within a one mile radius of the site and public exposure to contaminated groundwater is unlikely because all businesses and residences are supplied by public water. Exposure to contaminated soil is not expected since the site is covered by buildings and is paved. A vapor barrier and active soil vapor extraction system is at the site to prevent exposures from soil vapor intrusion.

Dump: False
Structure: True
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported
Record Add: 2009-11-30 14:48:00
Record Upd: 2011-04-11 15:21:00
Updated By: IXMUNTEA
Own Op: Owner

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

Sub Type:	06
Owner Name:	Stephen M. Starensier AIA, CSI
Owner Company:	The DOE Fund, Inc.
Owner Address:	345 East 102nd Street
Owner Addr2:	Not reported
Owner City,St,Zip:	New York, NY 10029
Owner Country:	United States of America
Own Op:	On-Site Operator
Sub Type:	E
Owner Name:	Giana Gigante
Owner Company:	Porter Avenue HDFC A DIV. OF DOE FUND Inc.
Owner Address:	345 EAST 102ND STREET, 3RD FLOOR
Owner Addr2:	Not reported
Owner City,St,Zip:	NEW YORK, NY 10029
Owner Country:	United States of America
Own Op:	Applicant/Requestor
Sub Type:	P03
Owner Name:	John Mc Donnel
Owner Company:	The DOE Fund, Inc.
Owner Address:	345 East 102nd Street, Third Floor
Owner Addr2:	Not reported
Owner City,St,Zip:	New York, NY 10029
Owner Country:	United States of America
HW Code:	V00409
Waste Type:	1,1,1,2-TETRACHLOROETHANE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	Hazardous Substances
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	1,1 Dichloroethene
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	CHROMIUM
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	DICHLOROETHYLENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	METHYL CHLORIDE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	VINYL CHLORIDE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
Crossref ID:	00-TEMP-03-24(I
Cross Ref Type Code:	20
Cross Ref Type:	Haz. Substance ID
Record Added Date:	2000-11-30 16:07:00
Record Updated:	2005-02-24 15:54:00
Updated By:	VCPTRANS

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

Crossref ID:	2010000128456
Cross Ref Type Code:	25
Cross Ref Type:	County Recording Identifier
Record Added Date:	2011-04-13 14:06:00
Record Updated:	2011-04-13 14:06:00
Updated By:	JHOCONNE
Name:	CORNISH KNIT GOODS/CORNISH MINI-MILLS
Address:	121 INGRAHAM ST./89 PORTER AVE.
City,State,Zip:	BROOKLYN, NY 11237
Site Code:	58133
HW Code:	V00409
Control Code:	18
Control Type:	ENG
Date Record Added:	05/10/2010
Date Rec Updated:	04/16/2019
Updated By:	MXMAGLOI
Site Description:	Location: The Cornish Knit Goods/Cornish Mini-Mills site is located at 89 Porter Avenue, Brooklyn, NY. The former address of this site was 121 Ingraham Street/89-111 Porter Ave. The 0.57 acre site is in East Williamsburg, an urban area of Brooklyn. The tax map identifies the site as Block 2993, Lot 1. The site is bordered by Porter Avenue to the west, by Ingraham Street to the south, by Joyva Candy Factory's parking lot to the east, and by Johnson Avenue to the north. Site Features: The site is completely covered by a four story building, which was renovated in order to be designated for restricted residential use. Current zoning/use(s): The site is in an area zoned M1-2, light manufacturing. The site building is currently operated as the Peter Jay Sharp Center for Opportunity (PJSCO). The building is used as shelter and rehabilitation center for homeless men. The surrounding parcels are currently used for a combination of commercial, industrial and residential. Historical Use(s): Until 1980 the property was operated by Cornish Knit Goods/Cornish Mini-Mills as a textile factory. From 1980 until 1995, the building was vacant, and it was illegally operated as a dry cleaning facility and as a stolen car scrap yard. In 2000, the property was owned by ABC Closing Corp. and the owner entered in a Voluntary Cleanup Agreement (VCA) with NYSDEC. In 2003, site ownership was transferred to Porter Avenue HDFC, a subsidiary of the DOE Fund, Inc., and the VCA was amended to reflect the change in ownership. Dry cleaning activities and uncontrolled disposal of waste solvents (perchloroethylene, or PCE, and its breakdown product trichloroethylene, or TCE) led to contamination of the soil and groundwater at the site. Site Geology and Hydrogeology: The surficial geology in the vicinity of the site is characterized by layered loose sediment. Soils recovered from the western portion of the site appear to be loose sands and sediments to approximately nine feet below ground surface (bgs) mixed with fill material such as gravels, brick, and old timbers. From 9 feet bgs to the top of the water table (approximately 13 feet bgs), soils are compact clays and sands. Soils recovered from drilling in the eastern portion of the site were characterized as fill. Groundwater depth ranges from 7 feet below ground surface (ft bgs) at the northwest portion of the site, 11-11.5 ft bgs across the western portion of the site, and 12-12.5 ft bgs across the southeast portion of the site.
Env Problem:	Nature and Extent of the Contamination: Post-Remediation: Remediation at the site is complete. Prior to remediation, the primary contaminants of concern at the site included the volatile organic

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

	compounds (VOCs) tetrachloroethylene (PCE) and its degradation products trichloroethene (TCE), cis-1,2-dichloroethene (DCE) and vinyl chloride (VC) in soil, groundwater and soil vapor. A vapor barrier and an Air Sparge/Soil Vapor Extraction System (AS/SVES) were installed and are operating on site to mitigate the remaining PCE and TCE contamination in soil vapor. Remaining contamination in soil and groundwater is being managed under a Site Management Plan.
Health Problem:	Groundwater beneath the site is contaminated with volatile organic compounds (VOCs), primarily tetrachloroethene (PCE), at levels above NYS drinking water standards. There are no active public water supply wells within a one mile radius of the site and public exposure to contaminated groundwater is unlikely because all businesses and residences are supplied by public water. Exposure to contaminated soil is not expected since the site is covered by buildings and is paved. A vapor barrier and active soil vapor extraction system is at the site to prevent exposures from soil vapor intrusion.
Dump:	False
Structure:	True
Lagoon:	False
Landfill:	False
Pond:	False
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	Not reported
Dell:	Not reported
Record Add:	2009-11-30 14:48:00
Record Upd:	2011-04-11 15:21:00
Updated By:	IXMUNTEA
Own Op:	Owner
Sub Type:	06
Owner Name:	Stephen M. Starensier AIA, CSI
Owner Company:	The DOE Fund, Inc.
Owner Address:	345 East 102nd Street
Owner Addr2:	Not reported
Owner City,St,Zip:	New York, NY 10029
Owner Country:	United States of America
Own Op:	On-Site Operator
Sub Type:	E
Owner Name:	Giana Gigante
Owner Company:	Porter Avenue HDFC A DIV. OF DOE FUND Inc.
Owner Address:	345 EAST 102ND STREET, 3RD FLOOR
Owner Addr2:	Not reported
Owner City,St,Zip:	NEW YORK, NY 10029
Owner Country:	United States of America
Own Op:	Applicant/Requestor
Sub Type:	P03
Owner Name:	John Mc Donnel
Owner Company:	The DOE Fund, Inc.
Owner Address:	345 East 102nd Street, Third Floor
Owner Addr2:	Not reported
Owner City,St,Zip:	New York, NY 10029
Owner Country:	United States of America
HW Code:	V00409
Waste Type:	1,1,1,2-TETRACHLOROETHANE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

Waste Type:	Hazardous Substances
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	1,1 Dichloroethene
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	CHROMIUM
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	DICHLOROETHYLENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	METHYL CHLORIDE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	VINYL CHLORIDE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
Crossref ID:	00-TEMP-03-24(I
Cross Ref Type Code:	20
Cross Ref Type:	Haz. Substance ID
Record Added Date:	2000-11-30 16:07:00
Record Updated:	2005-02-24 15:54:00
Updated By:	VCPTRANS
Crossref ID:	2010000128456
Cross Ref Type Code:	25
Cross Ref Type:	County Recording Identifier
Record Added Date:	2011-04-13 14:06:00
Record Updated:	2011-04-13 14:06:00
Updated By:	JHOCONNE

INST CONTROL:

Name:	CORNISH KNIT GOODS/CORNISH MINI-MILLS
Address:	121 INGRAHAM ST./89 PORTER AVE.
City,State,Zip:	BROOKLYN, NY 11237
Site Code:	58133
Control Name:	Landuse Restriction
HW Code:	V00409
Control Code:	25
Control Type:	INST
Dt record added:	05/10/2010
Dt rec updated:	04/16/2019
Updated By:	MXMAGLOI
Site Code:	58133
Site Description:	Location: The Cornish Knit Goods/Cornish Mini-Mills site is located at 89 Porter Avenue, Brooklyn, NY. The former address of this site was 121 Ingraham Street/89-111 Porter Ave. The 0.57 acre site is in East Williamsburg, an urban area of Brooklyn. The tax map identifies the site as Block 2993, Lot 1. The site is bordered by Porter Avenue to the west, by Ingraham Street to the south, by Joyva Candy Factory’s parking lot to the east, and by Johnson Avenue to the north. Site Features: The site is completely covered by a four story

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

building, which was renovated in order to be designated for restricted residential use. Current zoning/use(s): The site is in an area zoned M1-2, light manufacturing. The site building is currently operated as the Peter Jay Sharp Center for Opportunity (PJSCO). The building is used as shelter and rehabilitation center for homeless men. The surrounding parcels are currently used for a combination of commercial, industrial and residential. Historical Use(s): Until 1980 the property was operated by Cornish Knit Goods/Cornish Mini-Mills as a textile factory. From 1980 until 1995, the building was vacant, and it was illegally operated as a dry cleaning facility and as a stolen car scrap yard. In 2000, the property was owned by ABC Closing Corp. and the owner entered in a Voluntary Cleanup Agreement (VCA) with NYSDEC. In 2003, site ownership was transferred to Porter Avenue HDFC, a subsidiary of the DOE Fund, Inc., and the VCA was amended to reflect the change in ownership. Dry cleaning activities and uncontrolled disposal of waste solvents (perchloroethylene, or PCE, and its breakdown product trichloroethylene, or TCE) led to contamination of the soil and groundwater at the site. Site Geology and Hydrogeology: The surficial geology in the vicinity of the site is characterized by layered loose sediment. Soils recovered from the western portion of the site appear to be loose sands and sediments to approximately nine feet below ground surface (bgs) mixed with fill material such as gravels, brick, and old timbers. From 9 feet bgs to the top of the water table (approximately 13 feet bgs), soils are compact clays and sands. Soils recovered from drilling in the eastern portion of the site were characterized as fill. Groundwater depth ranges from 7 feet below ground surface (ft bgs) at the northwest portion of the site, 11-11.5 ft bgs across the western portion of the site, and 12-12.5 ft bgs across the southeast portion of the site.

Env Problem: Nature and Extent of the Contamination: Post-Remediation: Remediation at the site is complete. Prior to remediation, the primary contaminants of concern at the site included the volatile organic compounds (VOCs) tetrachloroethylene (PCE) and its degradation products trichloroethene (TCE), cis-1,2-dichloroethene (DCE) and vinyl chloride (VC) in soil, groundwater and soil vapor. A vapor barrier and an Air Sparge/Soil Vapor Extraction System (AS/SVES) were installed and are operating on site to mitigate the remaining PCE and TCE contamination in soil vapor. Remaining contamination in soil and groundwater is being managed under a Site Management Plan.

Health Problem: Groundwater beneath the site is contaminated with volatile organic compounds (VOCs), primarily tetrachloroethene (PCE), at levels above NYS drinking water standards. There are no active public water supply wells within a one mile radius of the site and public exposure to contaminated groundwater is unlikely because all businesses and residences are supplied by public water. Exposure to contaminated soil is not expected since the site is covered by buildings and is paved. A vapor barrier and active soil vapor extraction system is at the site to prevent exposures from soil vapor intrusion.

Dump: False
Structure: True
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

Record Add: 2009-11-30 14:48:00
Record Upd: 2011-04-11 15:21:00
Updated By: IXMUNTEA
Own Op: Owner
Sub Type: 06
Owner Name: Stephen M. Starensier AIA, CSI
Owner Company: The DOE Fund, Inc.
Owner Address: 345 East 102nd Street
Owner Addr2: Not reported
Owner City,St,Zip: New York, NY 10029
Owner Country: United States of America
Own Op: On-Site Operator
Sub Type: E
Owner Name: Giana Gigante
Owner Company: Porter Avenue HDFC A DIV. OF DOE FUND Inc.
Owner Address: 345 EAST 102ND STREET, 3RD FLOOR
Owner Addr2: Not reported
Owner City,St,Zip: NEW YORK, NY 10029
Owner Country: United States of America
Own Op: Applicant/Requestor
Sub Type: P03
Owner Name: John Mc Donnel
Owner Company: The DOE Fund, Inc.
Owner Address: 345 East 102nd Street, Third Floor
Owner Addr2: Not reported
Owner City,St,Zip: New York, NY 10029
Owner Country: United States of America
HW Code: V00409
Waste Type: 1,1,1,2-TETRACHLOROETHANE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: Hazardous Substances
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: 1,1 Dichloroethene
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: CHROMIUM
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: DICHLOROETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: METHYL CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: VINYL CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: 00-TEMP-03-24(I
Cross Ref Type Code: 20

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

Cross Ref Type: Haz. Substance ID
Record Added Date: 2000-11-30 16:07:00
Record Updated: 2005-02-24 15:54:00
Updated By: VCPTRANS
Crossref ID: 2010000128456
Cross Ref Type Code: 25
Cross Ref Type: County Recording Identifier
Record Added Date: 2011-04-13 14:06:00
Record Updated: 2011-04-13 14:06:00
Updated By: JHOCONNE

Name: CORNISH KNIT GOODS/CORNISH MINI-MILLS
Address: 121 INGRAHAM ST./89 PORTER AVE.
City,State,Zip: BROOKLYN, NY 11237
Site Code: 58133
Control Name: Ground Water Use Restriction
HW Code: V00409
Control Code: 08
Control Type: INST
Dt record added: 05/10/2010
Dt rec updated: 04/16/2019
Updated By: MXMAGLOI
Site Code: 58133
Site Description: Location: The Cornish Knit Goods/Cornish Mini-Mills site is located at 89 Porter Avenue, Brooklyn, NY. The former address of this site was 121 Ingraham Street/89-111 Porter Ave. The 0.57 acre site is in East Williamsburg, an urban area of Brooklyn. The tax map identifies the site as Block 2993, Lot 1. The site is bordered by Porter Avenue to the west, by Ingraham Street to the south, by Joyva Candy Factory's parking lot to the east, and by Johnson Avenue to the north. Site Features: The site is completely covered by a four story building, which was renovated in order to be designated for restricted residential use. Current zoning/use(s): The site is in an area zoned M1-2, light manufacturing. The site building is currently operated as the Peter Jay Sharp Center for Opportunity (PJSCO). The building is used as shelter and rehabilitation center for homeless men. The surrounding parcels are currently used for a combination of commercial, industrial and residential. Historical Use(s): Until 1980 the property was operated by Cornish Knit Goods/Cornish Mini-Mills as a textile factory. From 1980 until 1995, the building was vacant, and it was illegally operated as a dry cleaning facility and as a stolen car scrap yard. In 2000, the property was owned by ABC Closing Corp. and the owner entered in a Voluntary Cleanup Agreement (VCA) with NYSDEC. In 2003, site ownership was transferred to Porter Avenue HDFC, a subsidiary of the DOE Fund, Inc., and the VCA was amended to reflect the change in ownership. Dry cleaning activities and uncontrolled disposal of waste solvents (perchloroethylene, or PCE, and its breakdown product trichloroethylene, or TCE) led to contamination of the soil and groundwater at the site. Site Geology and Hydrogeology: The surficial geology in the vicinity of the site is characterized by layered loose sediment. Soils recovered from the western portion of the site appear to be loose sands and sediments to approximately nine feet below ground surface (bgs) mixed with fill material such as gravels, brick, and old timbers. From 9 feet bgs to the top of the water table (approximately 13 feet bgs), soils are compact clays and sands. Soils recovered from drilling in the eastern portion of the site were characterized as fill. Groundwater depth

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

ranges from 7 feet below ground surface (ft bgs) at the northwest portion of the site, 11-11.5 ft bgs across the western portion of the site, and 12-12.5 ft bgs across the southeast portion of the site.

Env Problem: Nature and Extent of the Contamination: Post-Remediation: Remediation at the site is complete. Prior to remediation, the primary contaminants of concern at the site included the volatile organic compounds (VOCs) tetrachloroethylene (PCE) and its degradation products trichloroethene (TCE), cis-1,2-dichloroethene (DCE) and vinyl chloride (VC) in soil, groundwater and soil vapor. A vapor barrier and an Air Sparge/Soil Vapor Extraction System (AS/SVES) were installed and are operating on site to mitigate the remaining PCE and TCE contamination in soil vapor. Remaining contamination in soil and groundwater is being managed under a Site Management Plan.

Health Problem: Groundwater beneath the site is contaminated with volatile organic compounds (VOCs), primarily tetrachloroethene (PCE), at levels above NYS drinking water standards. There are no active public water supply wells within a one mile radius of the site and public exposure to contaminated groundwater is unlikely because all businesses and residences are supplied by public water. Exposure to contaminated soil is not expected since the site is covered by buildings and is paved. A vapor barrier and active soil vapor extraction system is at the site to prevent exposures from soil vapor intrusion.

Dump: False
Structure: True
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported
Record Add: 2009-11-30 14:48:00
Record Upd: 2011-04-11 15:21:00
Updated By: IXMUNTEA
Own Op: Owner
Sub Type: 06
Owner Name: Stephen M. Starensier AIA, CSI
Owner Company: The DOE Fund, Inc.
Owner Address: 345 East 102nd Street
Owner Addr2: Not reported
Owner City,St,Zip: New York, NY 10029
Owner Country: United States of America
Own Op: On-Site Operator
Sub Type: E
Owner Name: Giana Gigante
Owner Company: Porter Avenue HDFC A DIV. OF DOE FUND Inc.
Owner Address: 345 EAST 102ND STREET, 3RD FLOOR
Owner Addr2: Not reported
Owner City,St,Zip: NEW YORK, NY 10029
Owner Country: United States of America
Own Op: Applicant/Requestor
Sub Type: P03
Owner Name: John Mc Donnel
Owner Company: The DOE Fund, Inc.
Owner Address: 345 East 102nd Street, Third Floor
Owner Addr2: Not reported
Owner City,St,Zip: New York, NY 10029

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

Owner Country: United States of America
HW Code: V00409
Waste Type: 1,1,1,2-TETRACHLOROETHANE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: Hazardous Substances
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: 1,1 Dichloroethene
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: CHROMIUM
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: DICHLOROETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: METHYL CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: VINYL CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: 00-TEMP-03-24(I
Cross Ref Type Code: 20
Cross Ref Type: Haz. Substance ID
Record Added Date: 2000-11-30 16:07:00
Record Updated: 2005-02-24 15:54:00
Updated By: VCPTRANS
Crossref ID: 2010000128456
Cross Ref Type Code: 25
Cross Ref Type: County Recording Identifier
Record Added Date: 2011-04-13 14:06:00
Record Updated: 2011-04-13 14:06:00
Updated By: JHOCONNE

Name: CORNISH KNIT GOODS/CORNISH MINI-MILLS
Address: 121 INGRAHAM ST./89 PORTER AVE.
City,State,Zip: BROOKLYN, NY 11237
Site Code: 58133
Control Name: Soil Management Plan
HW Code: V00409
Control Code: 14
Control Type: INST
Dt record added: 01/21/2009
Dt rec updated: 04/16/2019
Updated By: MXMAGLOI
Site Code: 58133
Site Description: Location: The Cornish Knit Goods/Cornish Mini-Mills site is located at 89 Porter Avenue, Brooklyn, NY. The former address of this site was 121 Ingraham Street/89-111 Porter Ave. The 0.57 acre site is in

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

East Williamsburg, an urban area of Brooklyn. The tax map identifies the site as Block 2993, Lot 1. The site is bordered by Porter Avenue to the west, by Ingraham Street to the south, by Joyva Candy Factory's parking lot to the east, and by Johnson Avenue to the north. Site Features: The site is completely covered by a four story building, which was renovated in order to be designated for restricted residential use. Current zoning/use(s): The site is in an area zoned M1-2, light manufacturing. The site building is currently operated as the Peter Jay Sharp Center for Opportunity (PJSCO). The building is used as shelter and rehabilitation center for homeless men. The surrounding parcels are currently used for a combination of commercial, industrial and residential. Historical Use(s): Until 1980 the property was operated by Cornish Knit Goods/Cornish Mini-Mills as a textile factory. From 1980 until 1995, the building was vacant, and it was illegally operated as a dry cleaning facility and as a stolen car scrap yard. In 2000, the property was owned by ABC Closing Corp. and the owner entered in a Voluntary Cleanup Agreement (VCA) with NYSDEC. In 2003, site ownership was transferred to Porter Avenue HDFC, a subsidiary of the DOE Fund, Inc., and the VCA was amended to reflect the change in ownership. Dry cleaning activities and uncontrolled disposal of waste solvents (perchloroethylene, or PCE, and its breakdown product trichloroethylene, or TCE) led to contamination of the soil and groundwater at the site. Site Geology and Hydrogeology: The surficial geology in the vicinity of the site is characterized by layered loose sediment. Soils recovered from the western portion of the site appear to be loose sands and sediments to approximately nine feet below ground surface (bgs) mixed with fill material such as gravels, brick, and old timbers. From 9 feet bgs to the top of the water table (approximately 13 feet bgs), soils are compact clays and sands. Soils recovered from drilling in the eastern portion of the site were characterized as fill. Groundwater depth ranges from 7 feet below ground surface (ft bgs) at the northwest portion of the site, 11-11.5 ft bgs across the western portion of the site, and 12-12.5 ft bgs across the southeast portion of the site.

Env Problem: Nature and Extent of the Contamination: Post-Remediation: Remediation at the site is complete. Prior to remediation, the primary contaminants of concern at the site included the volatile organic compounds (VOCs) tetrachloroethylene (PCE) and its degradation products trichloroethene (TCE), cis-1,2-dichloroethene (DCE) and vinyl chloride (VC) in soil, groundwater and soil vapor. A vapor barrier and an Air Sparge/Soil Vapor Extraction System (AS/SVES) were installed and are operating on site to mitigate the remaining PCE and TCE contamination in soil vapor. Remaining contamination in soil and groundwater is being managed under a Site Management Plan.

Health Problem: Groundwater beneath the site is contaminated with volatile organic compounds (VOCs), primarily tetrachloroethene (PCE), at levels above NYS drinking water standards. There are no active public water supply wells within a one mile radius of the site and public exposure to contaminated groundwater is unlikely because all businesses and residences are supplied by public water. Exposure to contaminated soil is not expected since the site is covered by buildings and is paved. A vapor barrier and active soil vapor extraction system is at the site to prevent exposures from soil vapor intrusion.

Dump: False
Structure: True
Lagoon: False
Landfill: False

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported
Record Add: 2009-11-30 14:48:00
Record Upd: 2011-04-11 15:21:00
Updated By: IXMUNTEA
Own Op: Owner
Sub Type: 06
Owner Name: Stephen M. Starensier AIA, CSI
Owner Company: The DOE Fund, Inc.
Owner Address: 345 East 102nd Street
Owner Addr2: Not reported
Owner City,St,Zip: New York, NY 10029
Owner Country: United States of America
Own Op: On-Site Operator
Sub Type: E
Owner Name: Giana Gigante
Owner Company: Porter Avenue HDFC A DIV. OF DOE FUND Inc.
Owner Address: 345 EAST 102ND STREET, 3RD FLOOR
Owner Addr2: Not reported
Owner City,St,Zip: NEW YORK, NY 10029
Owner Country: United States of America
Own Op: Applicant/Requestor
Sub Type: P03
Owner Name: John Mc Donnel
Owner Company: The DOE Fund, Inc.
Owner Address: 345 East 102nd Street, Third Floor
Owner Addr2: Not reported
Owner City,St,Zip: New York, NY 10029
Owner Country: United States of America
HW Code: V00409
Waste Type: 1,1,1,2-TETRACHLOROETHANE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: Hazardous Substances
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: 1,1 Dichloroethene
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: CHROMIUM
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: DICHLOROETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: METHYL CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

Waste Type: VINYL CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: 00-TEMP-03-24(I
Cross Ref Type Code: 20
Cross Ref Type: Haz. Substance ID
Record Added Date: 2000-11-30 16:07:00
Record Updated: 2005-02-24 15:54:00
Updated By: VCPTRANS
Crossref ID: 2010000128456
Cross Ref Type Code: 25
Cross Ref Type: County Recording Identifier
Record Added Date: 2011-04-13 14:06:00
Record Updated: 2011-04-13 14:06:00
Updated By: JHOCONNE

Name: CORNISH KNIT GOODS/CORNISH MINI-MILLS
Address: 121 INGRAHAM ST./89 PORTER AVE.
City,State,Zip: BROOKLYN, NY 11237
Site Code: 58133
Control Name: Deed Restriction
HW Code: V00409
Control Code: A
Control Type: INST
Dt record added: 05/10/2010
Dt rec updated: 04/16/2019
Updated By: MXMAGLOI
Site Code: 58133
Site Description: Location: The Cornish Knit Goods/Cornish Mini-Mills site is located at 89 Porter Avenue, Brooklyn, NY. The former address of this site was 121 Ingraham Street/89-111 Porter Ave. The 0.57 acre site is in East Williamsburg, an urban area of Brooklyn. The tax map identifies the site as Block 2993, Lot 1. The site is bordered by Porter Avenue to the west, by Ingraham Street to the south, by Joyva Candy Factory's parking lot to the east, and by Johnson Avenue to the north. Site Features: The site is completely covered by a four story building, which was renovated in order to be designated for restricted residential use. Current zoning/use(s): The site is in an area zoned M1-2, light manufacturing. The site building is currently operated as the Peter Jay Sharp Center for Opportunity (PJSCO). The building is used as shelter and rehabilitation center for homeless men. The surrounding parcels are currently used for a combination of commercial, industrial and residential. Historical Use(s): Until 1980 the property was operated by Cornish Knit Goods/Cornish Mini-Mills as a textile factory. From 1980 until 1995, the building was vacant, and it was illegally operated as a dry cleaning facility and as a stolen car scrap yard. In 2000, the property was owned by ABC Closing Corp. and the owner entered in a Voluntary Cleanup Agreement (VCA) with NYSDEC. In 2003, site ownership was transferred to Porter Avenue HDFC, a subsidiary of the DOE Fund, Inc., and the VCA was amended to reflect the change in ownership. Dry cleaning activities and uncontrolled disposal of waste solvents (perchloroethylene, or PCE, and its breakdown product trichloroethylene, or TCE) led to contamination of the soil and groundwater at the site. Site Geology and Hydrogeology: The surficial geology in the vicinity of the site is characterized by layered loose sediment. Soils recovered from the western portion of the site appear to be loose sands and sediments to

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

approximately nine feet below ground surface (bgs) mixed with fill material such as gravels, brick, and old timbers. From 9 feet bgs to the top of the water table (approximately 13 feet bgs), soils are compact clays and sands. Soils recovered from drilling in the eastern portion of the site were characterized as fill. Groundwater depth ranges from 7 feet below ground surface (ft bgs) at the northwest portion of the site, 11-11.5 ft bgs across the western portion of the site, and 12-12.5 ft bgs across the southeast portion of the site.

Env Problem: Nature and Extent of the Contamination: Post-Remediation: Remediation at the site is complete. Prior to remediation, the primary contaminants of concern at the site included the volatile organic compounds (VOCs) tetrachloroethylene (PCE) and its degradation products trichloroethene (TCE), cis-1,2-dichloroethene (DCE) and vinyl chloride (VC) in soil, groundwater and soil vapor. A vapor barrier and an Air Sparge/Soil Vapor Extraction System (AS/SVES) were installed and are operating on site to mitigate the remaining PCE and TCE contamination in soil vapor. Remaining contamination in soil and groundwater is being managed under a Site Management Plan.

Health Problem: Groundwater beneath the site is contaminated with volatile organic compounds (VOCs), primarily tetrachloroethene (PCE), at levels above NYS drinking water standards. There are no active public water supply wells within a one mile radius of the site and public exposure to contaminated groundwater is unlikely because all businesses and residences are supplied by public water. Exposure to contaminated soil is not expected since the site is covered by buildings and is paved. A vapor barrier and active soil vapor extraction system is at the site to prevent exposures from soil vapor intrusion.

Dump: False
Structure: True
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported
Record Add: 2009-11-30 14:48:00
Record Upd: 2011-04-11 15:21:00
Updated By: IXMUNTEA
Own Op: Owner
Sub Type: 06
Owner Name: Stephen M. Starensier AIA, CSI
Owner Company: The DOE Fund, Inc.
Owner Address: 345 East 102nd Street
Owner Addr2: Not reported
Owner City,St,Zip: New York, NY 10029
Owner Country: United States of America
Own Op: On-Site Operator
Sub Type: E
Owner Name: Giana Gigante
Owner Company: Porter Avenue HDFC A DIV. OF DOE FUND Inc.
Owner Address: 345 EAST 102ND STREET, 3RD FLOOR
Owner Addr2: Not reported
Owner City,St,Zip: NEW YORK, NY 10029
Owner Country: United States of America
Own Op: Applicant/Requestor
Sub Type: P03

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

Owner Name: John Mc Donnel
Owner Company: The DOE Fund, Inc.
Owner Address: 345 East 102nd Street, Third Floor
Owner Addr2: Not reported
Owner City,St,Zip: New York, NY 10029
Owner Country: United States of America
HW Code: V00409
Waste Type: 1,1,1,2-TETRACHLOROETHANE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: Hazardous Substances
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: 1,1 Dichloroethene
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: CHROMIUM
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: DICHLOROETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: METHYL CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: VINYL CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: 00-TEMP-03-24(I
Cross Ref Type Code: 20
Cross Ref Type: Haz. Substance ID
Record Added Date: 2000-11-30 16:07:00
Record Updated: 2005-02-24 15:54:00
Updated By: VCPTRANS
Crossref ID: 2010000128456
Cross Ref Type Code: 25
Cross Ref Type: County Recording Identifier
Record Added Date: 2011-04-13 14:06:00
Record Updated: 2011-04-13 14:06:00
Updated By: JHOCONNE

Name: CORNISH KNIT GOODS/CORNISH MINI-MILLS
Address: 121 INGRAHAM ST./89 PORTER AVE.
City,State,Zip: BROOKLYN, NY 11237
Site Code: 58133
Control Name: Monitoring Plan
HW Code: V00409
Control Code: 31
Control Type: INST
Dt record added: 05/10/2010
Dt rec updated: 04/16/2019

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

Updated By: MXMAGLOI
Site Code: 58133
Site Description: Location: The Cornish Knit Goods/Cornish Mini-Mills site is located at 89 Porter Avenue, Brooklyn, NY. The former address of this site was 121 Ingraham Street/89-111 Porter Ave. The 0.57 acre site is in East Williamsburg, an urban area of Brooklyn. The tax map identifies the site as Block 2993, Lot 1. The site is bordered by Porter Avenue to the west, by Ingraham Street to the south, by Joyva Candy Factory's parking lot to the east, and by Johnson Avenue to the north. Site Features: The site is completely covered by a four story building, which was renovated in order to be designated for restricted residential use. Current zoning/use(s): The site is in an area zoned M1-2, light manufacturing. The site building is currently operated as the Peter Jay Sharp Center for Opportunity (PJSCO). The building is used as shelter and rehabilitation center for homeless men. The surrounding parcels are currently used for a combination of commercial, industrial and residential. Historical Use(s): Until 1980 the property was operated by Cornish Knit Goods/Cornish Mini-Mills as a textile factory. From 1980 until 1995, the building was vacant, and it was illegally operated as a dry cleaning facility and as a stolen car scrap yard. In 2000, the property was owned by ABC Closing Corp. and the owner entered in a Voluntary Cleanup Agreement (VCA) with NYSDEC. In 2003, site ownership was transferred to Porter Avenue HDFC, a subsidiary of the DOE Fund, Inc., and the VCA was amended to reflect the change in ownership. Dry cleaning activities and uncontrolled disposal of waste solvents (perchloroethylene, or PCE, and its breakdown product trichloroethylene, or TCE) led to contamination of the soil and groundwater at the site. Site Geology and Hydrogeology: The surficial geology in the vicinity of the site is characterized by layered loose sediment. Soils recovered from the western portion of the site appear to be loose sands and sediments to approximately nine feet below ground surface (bgs) mixed with fill material such as gravels, brick, and old timbers. From 9 feet bgs to the top of the water table (approximately 13 feet bgs), soils are compact clays and sands. Soils recovered from drilling in the eastern portion of the site were characterized as fill. Groundwater depth ranges from 7 feet below ground surface (ft bgs) at the northwest portion of the site, 11-11.5 ft bgs across the western portion of the site, and 12-12.5 ft bgs across the southeast portion of the site.
Env Problem: Nature and Extent of the Contamination: Post-Remediation: Remediation at the site is complete. Prior to remediation, the primary contaminants of concern at the site included the volatile organic compounds (VOCs) tetrachloroethylene (PCE) and its degradation products trichloroethene (TCE), cis-1,2-dichloroethene (DCE) and vinyl chloride (VC) in soil, groundwater and soil vapor. A vapor barrier and an Air Sparge/Soil Vapor Extraction System (AS/SVES) were installed and are operating on site to mitigate the remaining PCE and TCE contamination in soil vapor. Remaining contamination in soil and groundwater is being managed under a Site Management Plan.
Health Problem: Groundwater beneath the site is contaminated with volatile organic compounds (VOCs), primarily tetrachloroethene (PCE), at levels above NYS drinking water standards. There are no active public water supply wells within a one mile radius of the site and public exposure to contaminated groundwater is unlikely because all businesses and residences are supplied by public water. Exposure to contaminated soil is not expected since the site is covered by buildings and is paved. A vapor barrier and active soil vapor extraction system is at

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

the site to prevent exposures from soil vapor intrusion.
Dump: False
Structure: True
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported
Record Add: 2009-11-30 14:48:00
Record Upd: 2011-04-11 15:21:00
Updated By: IXMUNTEA
Own Op: Owner
Sub Type: 06
Owner Name: Stephen M. Starensier AIA, CSI
Owner Company: The DOE Fund, Inc.
Owner Address: 345 East 102nd Street
Owner Addr2: Not reported
Owner City,St,Zip: New York, NY 10029
Owner Country: United States of America
Own Op: On-Site Operator
Sub Type: E
Owner Name: Giana Gigante
Owner Company: Porter Avenue HDFC A DIV. OF DOE FUND Inc.
Owner Address: 345 EAST 102ND STREET, 3RD FLOOR
Owner Addr2: Not reported
Owner City,St,Zip: NEW YORK, NY 10029
Owner Country: United States of America
Own Op: Applicant/Requestor
Sub Type: P03
Owner Name: John Mc Donnel
Owner Company: The DOE Fund, Inc.
Owner Address: 345 East 102nd Street, Third Floor
Owner Addr2: Not reported
Owner City,St,Zip: New York, NY 10029
Owner Country: United States of America
HW Code: V00409
Waste Type: 1,1,1,2-TETRACHLOROETHANE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: Hazardous Substances
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: 1,1 Dichloroethene
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: CHROMIUM
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: DICHLOROETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

HW Code: V00409
Waste Type: METHYL CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: VINYL CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: 00-TEMP-03-24(I
Cross Ref Type Code: 20
Cross Ref Type: Haz. Substance ID
Record Added Date: 2000-11-30 16:07:00
Record Updated: 2005-02-24 15:54:00
Updated By: VCPTRANS
Crossref ID: 2010000128456
Cross Ref Type Code: 25
Cross Ref Type: County Recording Identifier
Record Added Date: 2011-04-13 14:06:00
Record Updated: 2011-04-13 14:06:00
Updated By: JHOCONNE

Name: CORNISH KNIT GOODS/CORNISH MINI-MILLS
Address: 121 INGRAHAM ST./89 PORTER AVE.
City,State,Zip: BROOKLYN, NY 11237
Site Code: 58133
Control Name: O&M Plan
HW Code: V00409
Control Code: 33
Control Type: INST
Dt record added: 05/10/2010
Dt rec updated: 04/16/2019
Updated By: MXMAGLOI
Site Code: 58133
Site Description: Location: The Cornish Knit Goods/Cornish Mini-Mills site is located at 89 Porter Avenue, Brooklyn, NY. The former address of this site was 121 Ingraham Street/89-111 Porter Ave. The 0.57 acre site is in East Williamsburg, an urban area of Brooklyn. The tax map identifies the site as Block 2993, Lot 1. The site is bordered by Porter Avenue to the west, by Ingraham Street to the south, by Joyva Candy Factory's parking lot to the east, and by Johnson Avenue to the north. Site Features: The site is completely covered by a four story building, which was renovated in order to be designated for restricted residential use. Current zoning/use(s): The site is in an area zoned M1-2, light manufacturing. The site building is currently operated as the Peter Jay Sharp Center for Opportunity (PJSCO). The building is used as shelter and rehabilitation center for homeless men. The surrounding parcels are currently used for a combination of commercial, industrial and residential. Historical Use(s): Until 1980 the property was operated by Cornish Knit Goods/Cornish Mini-Mills as a textile factory. From 1980 until 1995, the building was vacant, and it was illegally operated as a dry cleaning facility and as a stolen car scrap yard. In 2000, the property was owned by ABC Closing Corp. and the owner entered in a Voluntary Cleanup Agreement (VCA) with NYSDEC. In 2003, site ownership was transferred to Porter Avenue HDFC, a subsidiary of the DOE Fund, Inc., and the VCA was amended to reflect the change in ownership. Dry cleaning activities and uncontrolled disposal of waste solvents (perchloroethylene, or PCE,

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

and its breakdown product trichloroethylene, or TCE) led to contamination of the soil and groundwater at the site. Site Geology and Hydrogeology: The surficial geology in the vicinity of the site is characterized by layered loose sediment. Soils recovered from the western portion of the site appear to be loose sands and sediments to approximately nine feet below ground surface (bgs) mixed with fill material such as gravels, brick, and old timbers. From 9 feet bgs to the top of the water table (approximately 13 feet bgs), soils are compact clays and sands. Soils recovered from drilling in the eastern portion of the site were characterized as fill. Groundwater depth ranges from 7 feet below ground surface (ft bgs) at the northwest portion of the site, 11-11.5 ft bgs across the western portion of the site, and 12-12.5 ft bgs across the southeast portion of the site.

Env Problem: Nature and Extent of the Contamination: Post-Remediation: Remediation at the site is complete. Prior to remediation, the primary contaminants of concern at the site included the volatile organic compounds (VOCs) tetrachloroethylene (PCE) and its degradation products trichloroethene (TCE), cis-1,2-dichloroethene (DCE) and vinyl chloride (VC) in soil, groundwater and soil vapor. A vapor barrier and an Air Sparge/Soil Vapor Extraction System (AS/SVES) were installed and are operating on site to mitigate the remaining PCE and TCE contamination in soil vapor. Remaining contamination in soil and groundwater is being managed under a Site Management Plan.

Health Problem: Groundwater beneath the site is contaminated with volatile organic compounds (VOCs), primarily tetrachloroethene (PCE), at levels above NYS drinking water standards. There are no active public water supply wells within a one mile radius of the site and public exposure to contaminated groundwater is unlikely because all businesses and residences are supplied by public water. Exposure to contaminated soil is not expected since the site is covered by buildings and is paved. A vapor barrier and active soil vapor extraction system is at the site to prevent exposures from soil vapor intrusion.

Dump: False
Structure: True
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported
Record Add: 2009-11-30 14:48:00
Record Upd: 2011-04-11 15:21:00
Updated By: IXMUNTEA
Own Op: Owner
Sub Type: 06
Owner Name: Stephen M. Starensier AIA, CSI
Owner Company: The DOE Fund, Inc.
Owner Address: 345 East 102nd Street
Owner Addr2: Not reported
Owner City,St,Zip: New York, NY 10029
Owner Country: United States of America
Own Op: On-Site Operator
Sub Type: E
Owner Name: Giana Gigante
Owner Company: Porter Avenue HDFC A DIV. OF DOE FUND Inc.
Owner Address: 345 EAST 102ND STREET, 3RD FLOOR

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

Owner Addr2: Not reported
Owner City,St,Zip: NEW YORK, NY 10029
Owner Country: United States of America
Own Op: Applicant/Requestor
Sub Type: P03
Owner Name: John Mc Donnel
Owner Company: The DOE Fund, Inc.
Owner Address: 345 East 102nd Street, Third Floor
Owner Addr2: Not reported
Owner City,St,Zip: New York, NY 10029
Owner Country: United States of America
HW Code: V00409
Waste Type: 1,1,1,2-TETRACHLOROETHANE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: Hazardous Substances
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: 1,1 Dichloroethene
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: CHROMIUM
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: DICHLOROETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: METHYL CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: VINYL CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: 00-TEMP-03-24(I
Cross Ref Type Code: 20
Cross Ref Type: Haz. Substance ID
Record Added Date: 2000-11-30 16:07:00
Record Updated: 2005-02-24 15:54:00
Updated By: VCPTRANS
Crossref ID: 2010000128456
Cross Ref Type Code: 25
Cross Ref Type: County Recording Identifier
Record Added Date: 2011-04-13 14:06:00
Record Updated: 2011-04-13 14:06:00
Updated By: JHOCONNE

Name: CORNISH KNIT GOODS/CORNISH MINI-MILLS
Address: 121 INGRAHAM ST./89 PORTER AVE.
City,State,Zip: BROOKLYN, NY 11237
Site Code: 58133
Control Name: Site Management Plan

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

HW Code: V00409
Control Code: 32
Control Type: INST
Dt record added: 05/10/2010
Dt rec updated: 04/16/2019
Updated By: MXMAGLOI
Site Code: 58133
Site Description: Location: The Cornish Knit Goods/Cornish Mini-Mills site is located at 89 Porter Avenue, Brooklyn, NY. The former address of this site was 121 Ingraham Street/89-111 Porter Ave. The 0.57 acre site is in East Williamsburg, an urban area of Brooklyn. The tax map identifies the site as Block 2993, Lot 1. The site is bordered by Porter Avenue to the west, by Ingraham Street to the south, by Joyva Candy Factory's parking lot to the east, and by Johnson Avenue to the north. Site Features: The site is completely covered by a four story building, which was renovated in order to be designated for restricted residential use. Current zoning/use(s): The site is in an area zoned M1-2, light manufacturing. The site building is currently operated as the Peter Jay Sharp Center for Opportunity (PJSCO). The building is used as shelter and rehabilitation center for homeless men. The surrounding parcels are currently used for a combination of commercial, industrial and residential. Historical Use(s): Until 1980 the property was operated by Cornish Knit Goods/Cornish Mini-Mills as a textile factory. From 1980 until 1995, the building was vacant, and it was illegally operated as a dry cleaning facility and as a stolen car scrap yard. In 2000, the property was owned by ABC Closing Corp. and the owner entered in a Voluntary Cleanup Agreement (VCA) with NYSDEC. In 2003, site ownership was transferred to Porter Avenue HDFC, a subsidiary of the DOE Fund, Inc., and the VCA was amended to reflect the change in ownership. Dry cleaning activities and uncontrolled disposal of waste solvents (perchloroethylene, or PCE, and its breakdown product trichloroethylene, or TCE) led to contamination of the soil and groundwater at the site. Site Geology and Hydrogeology: The surficial geology in the vicinity of the site is characterized by layered loose sediment. Soils recovered from the western portion of the site appear to be loose sands and sediments to approximately nine feet below ground surface (bgs) mixed with fill material such as gravels, brick, and old timbers. From 9 feet bgs to the top of the water table (approximately 13 feet bgs), soils are compact clays and sands. Soils recovered from drilling in the eastern portion of the site were characterized as fill. Groundwater depth ranges from 7 feet below ground surface (ft bgs) at the northwest portion of the site, 11-11.5 ft bgs across the western portion of the site, and 12-12.5 ft bgs across the southeast portion of the site.
Env Problem: Nature and Extent of the Contamination: Post-Remediation: Remediation at the site is complete. Prior to remediation, the primary contaminants of concern at the site included the volatile organic compounds (VOCs) tetrachloroethylene (PCE) and its degradation products trichloroethene (TCE), cis-1,2-dichloroethene (DCE) and vinyl chloride (VC) in soil, groundwater and soil vapor. A vapor barrier and an Air Sparge/Soil Vapor Extraction System (AS/SVES) were installed and are operating on site to mitigate the remaining PCE and TCE contamination in soil vapor. Remaining contamination in soil and groundwater is being managed under a Site Management Plan.
Health Problem: Groundwater beneath the site is contaminated with volatile organic compounds (VOCs), primarily tetrachloroethene (PCE), at levels above NYS drinking water standards. There are no active public water supply

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

wells within a one mile radius of the site and public exposure to contaminated groundwater is unlikely because all businesses and residences are supplied by public water. Exposure to contaminated soil is not expected since the site is covered by buildings and is paved. A vapor barrier and active soil vapor extraction system is at the site to prevent exposures from soil vapor intrusion.

Dump: False
Structure: True
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported
Record Add: 2009-11-30 14:48:00
Record Upd: 2011-04-11 15:21:00
Updated By: IXMUNTEA
Own Op: Owner
Sub Type: 06
Owner Name: Stephen M. Starensier AIA, CSI
Owner Company: The DOE Fund, Inc.
Owner Address: 345 East 102nd Street
Owner Addr2: Not reported
Owner City,St,Zip: New York, NY 10029
Owner Country: United States of America
Own Op: On-Site Operator
Sub Type: E
Owner Name: Giana Gigante
Owner Company: Porter Avenue HDFC A DIV. OF DOE FUND Inc.
Owner Address: 345 EAST 102ND STREET, 3RD FLOOR
Owner Addr2: Not reported
Owner City,St,Zip: NEW YORK, NY 10029
Owner Country: United States of America
Own Op: Applicant/Requestor
Sub Type: P03
Owner Name: John Mc Donnel
Owner Company: The DOE Fund, Inc.
Owner Address: 345 East 102nd Street, Third Floor
Owner Addr2: Not reported
Owner City,St,Zip: New York, NY 10029
Owner Country: United States of America
HW Code: V00409
Waste Type: 1,1,1,2-TETRACHLOROETHANE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: Hazardous Substances
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: 1,1 Dichloroethene
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: CHROMIUM
Waste Quantity: UNKNOWN

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

Waste Code: Not reported
HW Code: V00409
Waste Type: DICHLOROETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: METHYL CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: V00409
Waste Type: VINYL CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: 00-TEMP-03-24(I
Cross Ref Type Code: 20
Cross Ref Type: Haz. Substance ID
Record Added Date: 2000-11-30 16:07:00
Record Updated: 2005-02-24 15:54:00
Updated By: VCPTRANS
Crossref ID: 2010000128456
Cross Ref Type Code: 25
Cross Ref Type: County Recording Identifier
Record Added Date: 2011-04-13 14:06:00
Record Updated: 2011-04-13 14:06:00
Updated By: JHOCONNE

VCP:
Name: CORNISH KNIT GOODS/CORNISH MINI-MILLS
Address: 121 INGRAHAM ST./89 PORTER AVE.
City,State,Zip: BROOKLYN, NY 11237
Program Type: VCP
Site Code: 58133
HW Code: V00409
Site Class: C
SWIS: 2401
Region: 2
Town: New York City
Acres: 0.57
Date Record Added: 11/30/2000
Date Record Updated: 07/09/2018
Updated By: MXMAGLOI
Site Description: Location: The Cornish Knit Goods/Cornish Mini-Mills site is located at 89 Porter Avenue, Brooklyn, NY. The former address of this site was 121 Ingraham Street/89-111 Porter Ave. The 0.57 acre site is in East Williamsburg, an urban area of Brooklyn. The tax map identifies the site as Block 2993, Lot 1. The site is bordered by Porter Avenue to the west, by Ingraham Street to the south, by Joyva Candy Factory’s parking lot to the east, and by Johnson Avenue to the north. Site Features: The site is completely covered by a four story building, which was renovated in order to be designated for restricted residential use. Current zoning/use(s): The site is in an area zoned M1-2, light manufacturing. The site building is currently operated as the Peter Jay Sharp Center for Opportunity (PJSCO). The building is used as shelter and rehabilitation center for homeless men. The surrounding parcels are currently used for a combination of commercial, industrial and residential. Historical Use(s): Until 1980 the property was operated by Cornish Knit Goods/Cornish Mini-Mills as

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

a textile factory. From 1980 until 1995, the building was vacant, and it was illegally operated as a dry cleaning facility and as a stolen car scrap yard. In 2000, the property was owned by ABC Closing Corp. and the owner entered in a Voluntary Cleanup Agreement (VCA) with NYSDEC. In 2003, site ownership was transferred to Porter Avenue HDFC, a subsidiary of the DOE Fund, Inc., and the VCA was amended to reflect the change in ownership. Dry cleaning activities and uncontrolled disposal of waste solvents (perchloroethylene, or PCE, and its breakdown product trichloroethylene, or TCE) led to contamination of the soil and groundwater at the site. Site Geology and Hydrogeology: The surficial geology in the vicinity of the site is characterized by layered loose sediment. Soils recovered from the western portion of the site appear to be loose sands and sediments to approximately nine feet below ground surface (bgs) mixed with fill material such as gravels, brick, and old timbers. From 9 feet bgs to the top of the water table (approximately 13 feet bgs), soils are compact clays and sands. Soils recovered from drilling in the eastern portion of the site were characterized as fill. Groundwater depth ranges from 7 feet below ground surface (ft bgs) at the northwest portion of the site, 11-11.5 ft bgs across the western portion of the site, and 12-12.5 ft bgs across the southeast portion of the site.

Env Problem: Nature and Extent of the Contamination: Post-Remediation: Remediation at the site is complete. Prior to remediation, the primary contaminants of concern at the site included the volatile organic compounds (VOCs) tetrachloroethylene (PCE) and its degradation products trichloroethene (TCE), cis-1,2-dichloroethene (DCE) and vinyl chloride (VC) in soil, groundwater and soil vapor. A vapor barrier and an Air Sparge/Soil Vapor Extraction System (AS/SVES) were installed and are operating on site to mitigate the remaining PCE and TCE contamination in soil vapor. Remaining contamination in soil and groundwater is being managed under a Site Management Plan.

Health Problem: Groundwater beneath the site is contaminated with volatile organic compounds (VOCs), primarily tetrachloroethene (PCE), at levels above NYS drinking water standards. There are no active public water supply wells within a one mile radius of the site and public exposure to contaminated groundwater is unlikely because all businesses and residences are supplied by public water. Exposure to contaminated soil is not expected since the site is covered by buildings and is paved. A vapor barrier and active soil vapor extraction system is at the site to prevent exposures from soil vapor intrusion.

Dump: False
Structure: True
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported
Record Add: 2009-11-30 14:48:00
Record Upd: 2011-04-11 15:21:00
Updated By: IXMUNTEA
Own Op: Owner
Sub Type: 06
Owner Name: Stephen M. Starensier AIA, CSI
Owner Company: The DOE Fund, Inc.
Owner Address: 345 East 102nd Street

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

Owner Addr2:	Not reported
Owner City,St,Zip:	New York, NY 10029
Owner Country:	United States of America
Own Op:	On-Site Operator
Sub Type:	E
Owner Name:	Giana Gigante
Owner Company:	Porter Avenue HDFC A DIV. OF DOE FUND Inc.
Owner Address:	345 EAST 102ND STREET, 3RD FLOOR
Owner Addr2:	Not reported
Owner City,St,Zip:	NEW YORK, NY 10029
Owner Country:	United States of America
Own Op:	Applicant/Requestor
Sub Type:	P03
Owner Name:	John Mc Donnel
Owner Company:	The DOE Fund, Inc.
Owner Address:	345 East 102nd Street, Third Floor
Owner Addr2:	Not reported
Owner City,St,Zip:	New York, NY 10029
Owner Country:	United States of America
HW Code:	V00409
Waste Type:	1,1,1,2-TETRACHLOROETHANE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	Hazardous Substances
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	1,1 Dichloroethene
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	CHROMIUM
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	DICHLOROETHYLENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	METHYL CHLORIDE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	V00409
Waste Type:	VINYL CHLORIDE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
Crossref ID:	00-TEMP-03-24(I
Cross Ref Type Code:	20
Cross Ref Type:	Haz. Substance ID
Record Added Date:	2000-11-30 16:07:00
Record Updated:	2005-02-24 15:54:00
Updated By:	VCPTRANS
Crossref ID:	2010000128456
Cross Ref Type Code:	25
Cross Ref Type:	County Recording Identifier
Record Added Date:	2011-04-13 14:06:00

CORNISH KNIT GOODS/CORNISH MINI-MILLS (Continued) **S110043685**

Record Updated: 2011-04-13 14:06:00
Updated By: JHOCONNE

F39
SE
< 1/8
0.072 mi.
380 ft.

CON EDISON SERVICE BOX: 8558
104 HARRISON PL
BROOKLYN, NY 11237

Site 1 of 7 in cluster F

RCRA NonGen / NLR **1016963131**
NY MANIFEST **NYP004361614**

Relative:
Higher

Actual:
22 ft.

RCRA NonGen / NLR:

Date form received by agency:	07/03/2014
Facility name:	CON EDISON SERVICE BOX: 8558
Facility address:	104 HARRISON PL BROOKLYN, NY 11237
EPA ID:	NYP004361614
Mailing address:	IRVING PL, 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	212-460-3770
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	06/03/2014
Site name:	CON EDISON
Classification:	Small Quantity Generator

Date form received by agency:	06/03/2014
Site name:	CON EDISON
Classification:	Not a generator, verified

Violation Status: No violations found

NY MANIFEST:
Country: USA

CON EDISON SERVICE BOX: 8558 (Continued) **1016963131**

EPA ID:	NYP004361614
Facility Status:	Not reported
Location Address 1:	F/O 104 HARRISON PL
Code:	BP
Location Address 2:	SERVICE BOX # 8558
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004361614
Mailing Name:	CON EDISON
Mailing Contact:	TOM TEELING
Mailing Address 1:	4 IRVING PLACE 15TH FLOOR
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	2124603770

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2013
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	09/17/2013
Trans1 Recv Date:	09/17/2013
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	09/24/2013
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004361614
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002219613GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported

CON EDISON SERVICE BOX: 8558 (Continued) **1016963131**

Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	100
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

F40 **CON EDISON** **NY MANIFEST** **S117062750**
SE **104 HARRISON PL** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.072 mi.
380 ft. **Site 2 of 7 in cluster F**

Relative:
Higher

Actual:
22 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004551313
Facility Status:	Not reported
Location Address 1:	104 HARRISON PL
Code:	BP
Location Address 2:	SB 8558
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004551313
Mailing Name:	CON EDISON
Mailing Contact:	TOM TEELING
Mailing Address 1:	4 IRVING PLACE 15TH FLOOR
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJ0000027193

CON EDISON (Continued) **S117062750**

Trans2 State ID:	Not reported
Generator Ship Date:	06/03/2014
Trans1 Recv Date:	06/03/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	06/03/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004551313
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD002200046
TSDF ID 2:	Not reported
Manifest Tracking Number:	013245925JJK
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	50
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

E41 **PORTER AVENUE TRANSITIONAL RESIDENCE** **NY UST** **U004048007**
ENE **89-111 PORTER AVENUE** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.074 mi.
389 ft. **Site 8 of 12 in cluster E**

Relative: UST:
Lower

Name:	PORTER AVENUE TRANSITIONAL RESIDENCE
Address:	89-111 PORTER AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Id/Status:	2-607895 / Unregulated/Closed

Actual:
14 ft.

PORTER AVENUE TRANSITIONAL RESIDENCE (Continued) **U004048007**

Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	N/A
UTM X:	590487.99959
UTM Y:	4506856.31915
Site Type:	Other

Affiliation Records:

Site Id:	29747
Affiliation Type:	Facility Owner
Company Name:	PORTER AVE HOUSING DEV.FUND CORP.
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	232 EAST 84TH STREET
Address2:	Not reported
City:	NEW YORK
State:	NY
Zip Code:	10028
Country Code:	001
Phone:	(212) 628-5207
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	29747
Affiliation Type:	Mail Contact
Company Name:	PORTER AVE HDFC
Contact Type:	Not reported
Contact Name:	VINCENT ZAZA
Address1:	2960 FREDERICK DOUGLASS BLVD
Address2:	Not reported
City:	NEW YORK
State:	NY
Zip Code:	10039
Country Code:	001
Phone:	(212) 690-6480
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	29747
Affiliation Type:	Facility Operator
Company Name:	PORTER AVENUE TRANSITIONAL RESIDENCE
Contact Type:	Not reported
Contact Name:	VINCENT ZAZA
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(212) 690-6480
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT

PORTER AVENUE TRANSITIONAL RESIDENCE (Continued) **U004048007**

Date Last Modified: 2004-03-04

Site Id: 29747
Affiliation Type: Emergency Contact
Company Name: PORTER AVE HOUSING DEV.FUND CORP.
Contact Type: Not reported
Contact Name: VINCENT ZAZA
Address1: Not reported
Address2: Not reported
City: Not reported
State: NN
Zip Code: Not reported
Country Code: 001
Phone: (212) 690-6480
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Tank Info:

Tank Number: 001
Tank ID: 63764
Tank Status: Closed - In Place
Material Name: Closed - In Place
Capacity Gallons: 10000
Install Date: 07/01/1972
Date Tank Closed: 10/03/2002
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0001
Common Name of Substance: #2 Fuel Oil (On-Site Consumption)

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
H00 - Tank Leak Detection - None
I00 - Overfill - None
F00 - Pipe External Protection - None
B00 - Tank External Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
A00 - Tank Internal Protection - None

Tank Number: 002
Tank ID: 63765
Tank Status: Closed - In Place
Material Name: Closed - In Place

PORTER AVENUE TRANSITIONAL RESIDENCE (Continued) **U004048007**

Capacity Gallons:	5000
Install Date:	05/01/1970
Date Tank Closed:	10/03/2002
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
H00 - Tank Leak Detection - None
I00 - Overfill - None
B00 - Tank External Protection - None
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

E42 **PETER JAY SHARP CENTER FOR OPPORTUNITY DBA CORNISH** **PA MANIFEST** **S111771541**
ENE **89 W PORTER AVENUE** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.074 mi.
389 ft. **Site 9 of 12 in cluster E**

Relative: **Lower**

Actual: **14 ft.**

Manifest Details:

Year:	2010
Manifest Number:	000171707JJK
Manifest Type:	TSD Copy
Generator EPA Id:	NYD001683457
Generator Date:	09/01/2010
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	646-672-4465
TSD EPA Id:	PAD987270725
TSD Date:	Not reported
TSD Facility Name:	SIEMENS INDUSTRIES INC
TSD Facility Address:	118 PARK RD
TSD Facility City:	DARLINGTON
TSD Facility State:	PA
Facility Telephone:	Not reported
Page Number:	1
Line Number:	1
Waste Number:	F001
Container Number:	2
Container Type:	Metal drums, barrels, kegs
Waste Quantity:	300
Unit:	Pounds
Handling Code:	Not reported

PETER JAY SHARP CENTER FOR OPPORTUNITY DBA CORNISH KNIT GOOD (Continued) **S111771541**

TSP EPA Id: Not reported
Date TSP Sig: Not reported

E43 **CENTER FOR OPPORTUNITY** **NY Spills** **S109415471**
ENE **89 PORTER AVE** **N/A**
< 1/8 **BROOKLYN, NY**
0.074 mi.
389 ft. **Site 10 of 12 in cluster E**

Relative: **Lower**

Actual: **14 ft.**

SPILLS:

Name:	CENTER FOR OPPORTUNITY
Address:	89 PORTER AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0812527 / 2009-02-19
Facility ID:	0812527
Facility Type:	ER
DER Facility ID:	359385
Site ID:	410148
DEC Region:	2
Spill Cause:	Equipment Failure
Spill Class:	C4
SWIS:	2401
Spill Date:	2009-02-17
Investigator:	smsanges
Referred To:	Not reported
Reported to Dept:	2009-02-17
CID:	Not reported
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Responsible Party
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	Not reported
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2009-02-17
Spill Record Last Update:	2009-02-19
Spiller Name:	NICOLLE GARNER
Spiller Company:	CENTER FOR OPPORTUNITY
Spiller Address:	89 PORTER AVE
Spiller Company:	999
Contact Name:	NICOLLE GARNER
DEC Memo:	"Sangesland called back to callers number several times over 2 days & left messages. No answer. By 2/19/2009 mercury spill has probably been dealt with. Case Closed"
Remarks:	"Caller states a blood pressure monitor broke spilling mercury to the floor. Cleanup will be started."

All Materials:

Site ID:	410148
Operable Unit ID:	1166647
Operable Unit:	01
Material ID:	2158098
Material Code:	0031A
Material Name:	mercury
Case No.:	07439976
Material FA:	Hazardous Material

CENTER FOR OPPORTUNITY (Continued) **S109415471**

Quantity:	Not reported
Units:	Not reported
Recovered:	Not reported
Oxygenate:	Not reported

G44 **SPILL NUMBER 0303242** **NY Spills** **S106015449**
West **MORGAN AV/JOHNSON AV** **N/A**
< 1/8 **BROOKLYN, NY**
0.074 mi.
391 ft. **Site 1 of 9 in cluster G**

Relative: SPILLS:
Lower

Actual:
17 ft.

Name:	SPILL NUMBER 0303242
Address:	MORGAN AV/JOHNSON AV
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0303242 / 2003-08-18
Facility ID:	0303242
Facility Type:	ER
DER Facility ID:	143420
Site ID:	170448
DEC Region:	2
Spill Cause:	Unknown
Spill Class:	C4
SWIS:	2401
Spill Date:	2003-06-26
Investigator:	AERODRIG
Referred To:	Not reported
Reported to Dept:	2003-06-26
CID:	270
Water Affected:	Not reported
Spill Source:	Unknown
Spill Notifier:	Local Agency
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2003-06-26
Spill Record Last Update:	2003-08-20
Spiller Name:	Not reported
Spiller Company:	UNKNOWN
Spiller Address:	Not reported
Spiller Company:	999
Contact Name:	CALLER
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was RODRIGUEZ E2MIS 148912 26/03 - N1730 R. ROMAN - 74309 - SSC, WHILE ATTEMPTING TO BREAK OUT A VAULT SLAB FOR A TRANSFORMER REPLACEMENT, FOUND APPROX 5 GALS OF MOTOR OIL DIRECTLY IN FRONT OF THE VAULT ON THE ASPHALT STREET. SPILL IS CONTAINED. NO SEWERS OR WATERWAYS AFFECTED. NO PRIVATE PROPERTY AFFECTED. MR. ROMAN PLACED BALONEYS AROUND THE SPILL AND DIAPERS ON TOP OF THE SPILL. AN ENV OPS CREW HAS BEEN SENT TO THE 3RD AVE YD TO PICK UP SOME OIL ABSORB & DIAPERS TO FINISH UP THE CLEANUP. TJ - 50495 UPDATE @ 2200 HRS 6/16 W.TUDY COMPLETED USED 4 BAGS ABSORBANT REMOVED ALL SOLIDS. #12255 VDC."
Remarks:	"5 gals in street unknown further"

SPILL NUMBER 0303242 (Continued) **S106015449**

All Materials:

Site ID:	170448
Operable Unit ID:	870353
Operable Unit:	01
Material ID:	571389
Material Code:	0015
Material Name:	motor oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	5.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

G45 **0282-BOX** **NY Spills** **S107787480**
West **MORGAN /JOHNSON AVE** **N/A**
< 1/8 **BROOKLYN, NY**
0.074 mi.
391 ft. **Site 2 of 9 in cluster G**

Relative: **Lower**
Actual: **17 ft.**

SPILLS:

Name:	0282-BOX
Address:	MORGAN /JOHNSON AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0600727 / 2006-04-20
Facility ID:	0600727
Facility Type:	ER
DER Facility ID:	313025
Site ID:	362799
DEC Region:	2
Spill Cause:	Equipment Failure
Spill Class:	C4
SWIS:	2401
Spill Date:	2006-04-19
Investigator:	SMSANGES
Referred To:	Not reported
Reported to Dept:	2006-04-19
CID:	444
Water Affected:	Not reported
Spill Source:	Commercial Vehicle
Spill Notifier:	Fire Department
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	Not reported
UST Trust:	Not reported
Remediation Phase:	0
Date Entered In Computer:	2006-04-19
Spill Record Last Update:	2006-04-20
Spiller Name:	Not reported
Spiller Company:	TRACTOR TRAILER
Spiller Address:	Not reported
Spiller Company:	999
Contact Name:	FIREFIGHTER REEDER
DEC Memo:	""
Remarks:	"SADDLE TANK IS LEAKING ON TRACTOR TRAILER: ON ROAD ONLY: VACING

0282-BOX (Continued) **S107787480**

PRODUCT NOW:"

All Materials:

Site ID:	362799
Operable Unit ID:	1120878
Operable Unit:	01
Material ID:	2110359
Material Code:	0008
Material Name:	diesel
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	30.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

G46 **VAULT 7037** **NY Spills** **S106015428**
West **MORGAN AVE& JOHNSON AVE** **N/A**
< 1/8 **BROOKLYN, NY**
0.074 mi.
391 ft. **Site 3 of 9 in cluster G**

Relative: **Lower**

Actual: **17 ft.**

SPILLS:

Name:	VAULT 7037
Address:	MORGAN AVE& JOHNSON AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0303199 / 2003-08-18
Facility ID:	0303199
Facility Type:	ER
DER Facility ID:	258429
Site ID:	320774
DEC Region:	2
Spill Cause:	Equipment Failure
Spill Class:	C4
SWIS:	2401
Spill Date:	2003-06-25
Investigator:	AERODRIG
Referred To:	Not reported
Reported to Dept:	2003-06-25
CID:	207
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Affected Persons
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2003-06-25
Spill Record Last Update:	2003-08-20
Spiller Name:	Not reported
Spiller Company:	Not reported
Spiller Address:	Not reported
Spiller Company:	001
Contact Name:	KEVIN MCARDLE
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was

VAULT 7037 (Continued) **S106015428**

RODRIQUEZ e2mis 148885 6/25/03=2050HRS TYLER #16520 FOD REPORTS FEEDER 5B25 OPENED AUTO CAUSING DAMGE IN V7037 . AND RUPTURED GAS TANK TO (VEHICLE PLATE# AHS8084) . VEHICLE SPILLED APPROX 2-GALLONS OF GASOLINE ONTO 200 GALLONS OF WATER IN V 7037. IT APPEARS TO BE CONTAINED AT THIS TIME NO SEWERS OR WATERWAYS EFFECTED. NO FIRE OR SMOKE OR PRIVATE PROPERTY INVOLVED . NO SAMPLE TO BE TAKEN ENVIR TAG#04565 PLACED VENDER(ALL STATE POWER VAC) WAS CALLED WILL RESPOND FOR CLEANUP. MORE INFO TO FOLLOW 6/25/03=2345HRS J.GAGLIO AFTER EXAMINING VEHICLE GASOLINE GAUGE AND SPEAKING TO MR.ANDREI SELEMSKIKH OWNER OF VEHICLE REPORTED TO ME ON SITE THAT LESS THEN 1-GALLON OF GASOLINE WAS LOST DURING THIS INCIDENT.AND THERE IS 5000 GALLONS OF WATER IN STRUCTURE. 6/25/03=0005HRS CIG K.MACARDLE NOTIFIED. 6/26/03=0510HRS OPERATING SUP J. DEKANCHUK REPORTS ALLSTATE POWER VAC ARRIVED ON LOCATION AT ABOUT 2315 HRS AND PUMPED 4500 GAL OF WATER CONTAMINATED WITH ABOUT 2 GAL OF GASOLINE. ERT DAN POTECORVO VISITED SITE.VENDOR STEAM CLEANED WALLS OF VAULT AND WASH WATER PUMPED INTO TANKER.VAULT CLEANED FROM TOP ONLY DUE TO FEEDER ON. FOLLOW UP WITH VACTOR IN AM SSC CREW REMOVED 3 DAMAGED COVERS AND REPLACED WITH NEW. UPDATE: 6/27/03 - 1520 D. WILLIAMS - ENV. OPS., REPORTS CLEANUP COMPLETED BY DOUBLE WASHING STRUCTURE WITH BULLDOG. NO EARTHEN SUMP IN "

Remarks: "on 200 gals water in the vault all contained 148885"

All Materials:

Site ID:	320774
Operable Unit ID:	871226
Operable Unit:	01
Material ID:	504071
Material Code:	0009
Material Name:	gasoline
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	2.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

G47 **VAULT 3640** **NY Spills** **S106719228**
West **MORGAN AVE & JOHNSON AVE** **N/A**
< 1/8 **BROOKLYN, NY**
0.074 mi.
391 ft. **Site 4 of 9 in cluster G**

Relative: SPILLS:
Lower

Actual:
17 ft.

Name:	VAULT 3640
Address:	MORGAN AVE & JOHNSON AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0308984 / 2003-12-22
Facility ID:	0308984
Facility Type:	ER
DER Facility ID:	184269
Site ID:	222845
DEC Region:	2
Spill Cause:	Unknown
Spill Class:	C4
SWIS:	2401
Spill Date:	2003-11-23

VAULT 3640 (Continued) **S106719228**

Investigator:	AERODRIG
Referred To:	Not reported
Reported to Dept:	2003-11-23
CID:	322
Water Affected:	Not reported
Spill Source:	Unknown
Spill Notifier:	Affected Persons
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2003-11-23
Spill Record Last Update:	2004-03-02
Spiller Name:	UNKNOWN
Spiller Company:	Unknown
Spiller Address:	UNKNOWN
Spiller Company:	999
Contact Name:	Not reported
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was RODRIGUEZ E2MIS 151243 23-NOV-2003 17:53 HRS. B/Q EQUIPT. GROUP DEPT.SPLICER W.THORNGREN EMP# 14916 REPORTS: WHILE ON LOCATION VS-3640 FOR INSPECTION ON FEEDER 5B25 FOUND: UNIT MIN/MINUS AND APPROX. 8 GAL'S OF UNKNOWN OIL ON SOIL IN A CONCRETE STRUCTURE. NO WATER. SPILL IS CONTAINED. NO SEWERS OR WATER WAYS APPEAR TO BE AFFECTED. NO KNOWN SEWER CONNECTION PRESENT. 1 LIQ. SAMPLE TO BE TAKEN FROM UNIT WHEN DEENERGIZED & MARKED PRIORITY E CHAIN OF CUSTODY# CC-16723. FEEDER TO COME OUT CAT2. UNIT IS IN DRIVEWAY OF BUILDING (ANIXTER). UPDATE -23-NOV-2003 18:33 HRS. HISTORICAL RECORDS INDICATE 10 PPM 1/16/97 . EQUIPMENT INFO: SERIAL # 3987704, MFR: GE, CLASS: GA8S, 500 KVA, YR. OF MFR: 1/1/62. UNIT WAS NOT PRESSURE TESTED AT THIS TIME. HISTORICAL VAULT RECORDS INDICATE: NO SEWER CONNECTION PRESENT. 11/24/03 TANKER REMOVED 315 GALLONS FROM UNIT. UNIT HOLDS 370 GALLONS. UNIT MISSING 55 GALLONS. 50-499 PPM PARTIAL CLEANUP IS COMPLETE. ASTORIA TANKER REMOVED ALL LIQUIDS FROM UNIT. CLEANUP GENERATED DRUM OF PPE BROUGHT BACK TO 3AVE YARD UNDER THE 1 TRIP RULE. ENVIR. TAG REMAINS IN PLACE. LAB RESULT RETURNED 6 PPM LSN#03-09489-001 11/26/03 BQ TRANSFORMER GROUP REPORTS TRANSFORMER REMOVED AT THIS TIME. DOUBLE WASHED STRUCTURE WITH BIO GEN 760. REMOVED ALL LIQUIDS. FOUND SUMP CEMENTED. REMOVED TAG."
Remarks:	"8 GAL UNK OIL ON SOIL IN A VAULT - SAMPLES HAVE BEEN TAKEN AND CLEAN UP IS PENDING RESULTS - CON ED #151243 "

All Materials:

Site ID:	222845
Operable Unit ID:	875085
Operable Unit:	01
Material ID:	498900
Material Code:	0066A
Material Name:	unknown petroleum
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	8.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

G48 **CON EDISON - VS 7037** **RCRA NonGen / NLR** **1008195679**
West **E/S MORGAN JAVE. 114‘ N/O JOHN** **NY MANIFEST** **NYP004112298**
< 1/8 **BROOKLYN, NY 11206**
0.076 mi.
400 ft. **Site 5 of 9 in cluster G**

Relative:
Lower

Actual:
17 ft.

RCRA NonGen / NLR:

Date form received by agency:	02/27/2004
Facility name:	CON EDISON - VS 7037
Facility address:	E/S MORGAN JAVE. 114‘ N/O JOHN BROOKLYN, NY 11206
EPA ID:	NYP004112298
Mailing address:	4 IRVING PLACE NEW YORK, NY 10003
Contact:	ANTHONY DRUMMINGS
Contact address:	4 IRVING PLACE NEW YORK, NY 10003
Contact country:	US
Contact telephone:	212-460-3770
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	CONSOLIDATED EDISON COMPANY OF NY, INC.
Owner/operator address:	4 IRVING PLACE NEW YORK, NY 10003
Owner/operator country:	US
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	06/26/2003
Owner/Op end date:	Not reported

Owner/operator name:	CONSOLIDATED EDISON COMPANY OF NY, INC.
Owner/operator address:	4 IRVING PLACE NEW YORK, NY 10003
Owner/operator country:	US
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	06/26/2003
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No

CON EDISON - VS 7037 (Continued) **1008195679**

On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 02/26/2004
Site name: CON EDISON - VS 7037
Classification: Not a generator, verified

Date form received by agency: 02/25/2004
Site name: CON EDISON - VS 7037
Classification: Large Quantity Generator

Hazardous Waste Summary:

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D018
. Waste name: BENZENE

Violation Status: No violations found

NY MANIFEST:
Country: USA
EPA ID: NYP004112298
Facility Status: Not reported
Location Address 1: MORGAN AVE & JOHNSON AVE
Code: BP
Location Address 2: Not reported
Total Tanks: Not reported
Location City: NEW YORK
Location State: NY
Location Zip: Not reported
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYP004112298
Mailing Name: CONSOLIDATED EDISON
Mailing Contact: FRANKLIN MURRAY
Mailing Address 1: 4 IRVING PLACE RM 828
Mailing Address 2: Not reported
Mailing City: NEW YORK
Mailing State: NY
Mailing Zip: 10003
Mailing Zip 4: Not reported
Mailing Country: USA
Mailing Phone: 2124602808

NY MANIFEST:
Document ID: NJA3277638

CON EDISON - VS 7037 (Continued) **1008195679**

Manifest Status:	Not reported
seq:	01
Year:	2003
Trans1 State ID:	H10376
Trans2 State ID:	Not reported
Generator Ship Date:	06/26/2003
Trans1 Recv Date:	06/26/2003
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	07/03/2003
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004112298
Trans1 EPA ID:	NYD003812047
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD002385730
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	D018 - BENZENE 0.5 MG/L TCLP
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	04500
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	001
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	L Landfill.
Specific Gravity:	01.00

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

D49 **HARRISON KNIKERBOCKER REALTY CORP.** **NY AST** **A100300999**
SSW **54 KNICKERBOCKER AVE** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.076 mi.
401 ft. **Site 5 of 9 in cluster D**

Relative: AST:
Higher

Name:	HARRISON KNIKERBOCKER REALTY CORP.
Address:	54 KNICKERBOCKER AVE
City,State,Zip:	BROOKLYN, NY 11237
Region:	STATE
DEC Region:	2
Site Status:	Unregulated/Closed

Actual:
23 ft.

HARRISON KNIKERBOCKER REALTY CORP. (Continued) **A100300999**

Facility Id: 2-609504
Program Type: PBS
UTM X: 590312.54048
UTM Y: 4506715.84659
Expiration Date: N/A
Site Type: Manufacturing (Other than Chemical)/Processing

Affiliation Records:

Site Id: 55521
Affiliation Type: Facility Owner
Company Name: HARRISON - KNIKER BOCKER REALTY CORP.
Contact Type: PRES.
Contact Name: HARRISON KNIKERBOCKER REALTY CORP.
Address1: P.O.BOX 204
Address2: Not reported
City: BROOKLYN
State: NY
Zip Code: 11211
Country Code: 001
Phone: (718) 260-8035
EMail: Not reported
Fax Number: Not reported
Modified By: kxtang
Date Last Modified: 2004-04-01

Site Id: 55521
Affiliation Type: Mail Contact
Company Name: HARRISON - KNIKER BOCKER REALTY CORP.
Contact Type: Not reported
Contact Name: MR. POLLACK
Address1: P.O.BOX 204
Address2: Not reported
City: BROOKLYN
State: NY
Zip Code: 11211
Country Code: 001
Phone: (718) 260-8035
EMail: Not reported
Fax Number: Not reported
Modified By: kxtang
Date Last Modified: 2004-04-01

Site Id: 55521
Affiliation Type: Facility Operator
Company Name: HARRISON KNIKERBOCKER REALTY CORP.
Contact Type: Not reported
Contact Name: ASHER POLLAK
Address1: Not reported
Address2: Not reported
City: Not reported
State: NN
Zip Code: Not reported
Country Code: 001
Phone: (718) 260-8035
EMail: Not reported
Fax Number: Not reported
Modified By: kxtang
Date Last Modified: 2004-04-01

HARRISON KNIKERBOCKER REALTY CORP. (Continued) **A100300999**

Site Id:	55521
Affiliation Type:	Emergency Contact
Company Name:	HARRISON - KNIKER BOCKER REALTY CORP.
Contact Type:	Not reported
Contact Name:	ASHER POLLAK
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 260-8035
EMail:	Not reported
Fax Number:	Not reported
Modified By:	kxtang
Date Last Modified:	2004-04-01

Tank Info:

Tank Number:	01
Tank Id:	178370
Material Code:	0000
Common Name of Substance:	Empty
Tank Location:	Partially buried tank (tank with 10% or more below ground).... Tank is less than 90% above grade, partially buried.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Closed - In Place
Pipe Model:	Not reported
Install Date:	Not reported
Capacity Gallons:	3000
Tightness Test Method:	00
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	07/31/2003
Register:	True
Modified By:	cgfreedm
Last Modified:	04/14/2017
Material Name:	empty

E50 **ADVERTISING CRAFTSMAN CO** **NY AST** **A100300636**
ESE **65 PORTER AVE** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.078 mi.
414 ft. **Site 11 of 12 in cluster E**

Relative:
Higher

Actual:
19 ft.

AST:

Name:	ADVERTISING CRAFTSMAN CO
Address:	65 PORTER AVE
City,State,Zip:	BROOKLYN, NY 11237
Region:	STATE
DEC Region:	2
Site Status:	Inactive
Facility Id:	2-193003
Program Type:	PBS
UTM X:	590553.34806
UTM Y:	4506736.37572

ADVERTISING CRAFTSMAN CO (Continued) **A100300636**

Expiration Date: N/A
Site Type: Unknown

Affiliation Records:
Site Id: 6101
Affiliation Type: Facility Owner
Company Name: PORHAR HOLDING CORP
Contact Type: Not reported
Contact Name: Not reported
Address1: 141-25 NORTHERN BLVD
Address2: Not reported
City: FLUSHING
State: NY
Zip Code: 11534
Country Code: 001
Phone: (718) 539-0600
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 6101
Affiliation Type: Mail Contact
Company Name: PORHAR HOLDING CORP
Contact Type: Not reported
Contact Name: Not reported
Address1: 141-25 NORTHERN BLVD
Address2: Not reported
City: FLUSHING
State: NY
Zip Code: 11534
Country Code: 001
Phone: (718) 539-0600
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 6101
Affiliation Type: Facility Operator
Company Name: ADVERTISING CRAFTSMAN CO
Contact Type: Not reported
Contact Name: ADVERTISING CRAFTSMAN CO
Address1: Not reported
Address2: Not reported
City: Not reported
State: NN
Zip Code: Not reported
Country Code: 001
Phone: (718) 366-1400
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 6101
Affiliation Type: Emergency Contact
Company Name: PORHAR HOLDING CORP

ADVERTISING CRAFTSMAN CO (Continued) **A100300636**

Contact Type:	Not reported
Contact Name:	ADVERTISING CRAFTSMAN CO
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 366-1400
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	001
Tank Id:	11346
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Equipment Records:

	J02 - Dispenser - Suction Dispenser
	H00 - Tank Leak Detection - None
	B00 - Tank External Protection - None
	C00 - Pipe Location - No Piping
	F00 - Pipe External Protection - None
	I04 - Overfill - Product Level Gauge (A/G)
	A00 - Tank Internal Protection - None
	D01 - Pipe Type - Steel/Carbon Steel/Iron
	G07 - Tank Secondary Containment - Excavation Liner
Tank Location:	Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Tank Converted to Non-Regulated Use
Pipe Model:	Not reported
Install Date:	Not reported
Capacity Gallons:	5000
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	01/01/1994
Register:	True
Modified By:	TRANSLAT
Last Modified:	04/14/2017
Material Name:	#2 fuel oil (on-site consumption)

E51
ESE
< 1/8
0.078 mi.
414 ft.

VOILA BAKERY
65 PORTER AVENUE
BROOKLYN, NY 11237

Site 12 of 12 in cluster E

NY UST **U000411749**
N/A

Relative:
Higher

Actual:
19 ft.

UST:

Name:	VOILA BAKERIES, INC
Address:	65 PORTER AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Id/Status:	2-481726 / Unregulated/Closed
Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	N/A
UTM X:	590553.34806
UTM Y:	4506736.37572
Site Type:	Unknown

Affiliation Records:

Site Id:	21553
Affiliation Type:	Facility Owner
Company Name:	VIOLA BAKERIES, INC
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	140 LEONARD STREET
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11206
Country Code:	001
Phone:	(718) 782-2700
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	21553
Affiliation Type:	Mail Contact
Company Name:	VIOLA BAKERIES, INC
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	140 LEONARD STREET
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11206
Country Code:	001
Phone:	(718) 782-2700
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	21553
Affiliation Type:	Facility Operator
Company Name:	VIOLA BAKERIES, INC
Contact Type:	Not reported
Contact Name:	FRANK F KITCHENS
Address1:	Not reported

VOILA BAKERY (Continued) **U000411749**

Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 456-7678
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	21553
Affiliation Type:	Emergency Contact
Company Name:	VIOLA BAKERIES, INC
Contact Type:	Not reported
Contact Name:	FRANK F KITCHENS
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(212) 227-4946
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	001
Tank ID:	41143
Tank Status:	Closed Prior to Micro Conversion, 03/91
Material Name:	Closed Prior to Micro Conversion, 03/91
Capacity Gallons:	5000
Install Date:	11/01/1958
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
G00 - Tank Secondary Containment - None

VOILA BAKERY (Continued) **U000411749**

J02 - Dispenser - Suction Dispenser
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Number:	001
Tank ID:	39929
Tank Status:	Closed - Removed
Material Name:	Closed - Removed
Capacity Gallons:	3000
Install Date:	Not reported
Date Tank Closed:	06/01/1994
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

J02 - Dispenser - Suction Dispenser
G00 - Tank Secondary Containment - None
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Affiliation Records:

Site Id:	21986
Affiliation Type:	Facility Owner
Company Name:	FRANK KITCHENS
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	65 PORTER AVE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(718) 366-1100
EMail:	Not reported
Fax Number:	Not reported
Modified By:	CGFREEDM
Date Last Modified:	2004-12-16
Site Id:	21986
Affiliation Type:	Mail Contact
Company Name:	VOILA BAKERIES, INC.

VOILA BAKERY (Continued) **U000411749**

Contact Type:	Not reported
Contact Name:	JACK HANAN
Address1:	65 PORTER AVE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(718) 366-1100
EMail:	Not reported
Fax Number:	Not reported
Modified By:	CGFREEDM
Date Last Modified:	2004-12-16

Site Id:	21986
Affiliation Type:	Facility Operator
Company Name:	VOILA BAKERY
Contact Type:	Not reported
Contact Name:	FRANK KITCHENS
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 366-1100
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	21986
Affiliation Type:	Emergency Contact
Company Name:	FRANK KITCHENS
Contact Type:	Not reported
Contact Name:	EYRES PRODUCTIONS
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 366-1100
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	001
Tank ID:	41143
Tank Status:	Closed Prior to Micro Conversion, 03/91
Material Name:	Closed Prior to Micro Conversion, 03/91
Capacity Gallons:	5000
Install Date:	11/01/1958
Date Tank Closed:	Not reported

VOILA BAKERY (Continued) **U000411749**

Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0001
Common Name of Substance: #2 Fuel Oil (On-Site Consumption)

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Number: 001
Tank ID: 39929
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 3000
Install Date: Not reported
Date Tank Closed: 06/01/1994
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0001
Common Name of Substance: #2 Fuel Oil (On-Site Consumption)

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

J02 - Dispenser - Suction Dispenser
G00 - Tank Secondary Containment - None
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

H52 **MILHAN REALTY CORP** **RCRA NonGen / NLR** **1004758044**
WSW **40 INGRAHAM ST** **FINDS** **NYD986974392**
< 1/8 **BROOKLYN, NY 11206** **ECHO**
0.081 mi. **NY MANIFEST**
429 ft. **Site 1 of 7 in cluster H**

Relative: Higher

Actual: 20 ft.

RCRA NonGen / NLR:

Date form received by agency:	01/01/2007
Facility name:	MILHAN REALTY CORP
Facility address:	40 INGRAHAM ST BROOKLYN, NY 11206
EPA ID:	NYD986974392
Mailing address:	INGRAHAM ST BROOKLYN, NY 11206
Contact:	ALFRED COHEN
Contact address:	INGRAHAM ST BROOKLYN, NY 11206
Contact country:	US
Contact telephone:	718-969-1535
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	MILHAN REALTY CORP
Owner/operator address:	40 INGRAHAM ST BROOKLYN, NY 11206
Owner/operator country:	US
Owner/operator telephone:	718-969-1535
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	MILHAN REALTY CORP
Owner/operator address:	40 INGRAHAM ST BROOKLYN, NY 11206
Owner/operator country:	US
Owner/operator telephone:	718-969-1535
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No

MILHAN REALTY CORP (Continued) **1004758044**

On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2006
Site name: MILHAN REALTY CORP
Classification: Not a generator, verified

Date form received by agency: 09/27/1991
Site name: MILHAN REALTY CORP
Classification: Conditionally Exempt Small Quantity Generator

Hazardous Waste Summary:

. Waste code: D000
. Waste name: Not Defined

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D003
. Waste name: REACTIVE WASTE

. Waste code: F006
. Waste name: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS, EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC, AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

. Waste code: F009
. Waste name: SPENT STRIPPING AND CLEANING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS IN WHICH CYANIDES ARE USED IN THE PROCESS.

Violation Status: No violations found

FINDS:

Registry ID: 110004477842

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

MILHAN REALTY CORP (Continued) **1004758044**

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1004758044
Registry ID:	110004477842
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110004477842

NY MANIFEST:

Country:	USA
EPA ID:	NYD986974392
Facility Status:	Not reported
Location Address 1:	40 INGRAHAM ST
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11206
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYD986974392
Mailing Name:	MILHAN REALTY CORP
Mailing Contact:	MILHAN REALTY CORP
Mailing Address 1:	40 INGRAHAM STREET
Mailing Address 2:	Not reported
Mailing City:	BROOKLYN
Mailing State:	NY
Mailing Zip:	11206
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	7183314400

NY MANIFEST:

Document ID:	NYB4963275
Manifest Status:	C
seq:	Not reported
Year:	1992
Trans1 State ID:	NYPD1010
Trans2 State ID:	Not reported
Generator Ship Date:	11/12/1992
Trans1 Recv Date:	11/12/1992
Trans2 Recv Date:	/ /
TSD Site Recv Date:	11/12/1992
Part A Recv Date:	11/25/1992
Part B Recv Date:	11/25/1992
Generator EPA ID:	NYD986974392
Trans1 EPA ID:	NYD077444263
Trans2 EPA ID:	Not reported
TSDF ID 1:	NYD077444263
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported

MILHAN REALTY CORP (Continued) **1004758044**

Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	D002 - NON-LISTED CORROSIVE WASTES
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	00600
Units:	P - Pounds
Number of Containers:	001
Container Type:	DF - Fiberboard or plastic drums (glass)
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	100
Waste Code:	D002 - NON-LISTED CORROSIVE WASTES
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	00110
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	002
Container Type:	DF - Fiberboard or plastic drums (glass)
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	100
Waste Code:	D002 - NON-LISTED CORROSIVE WASTES
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	00275
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	005
Container Type:	DF - Fiberboard or plastic drums (glass)
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	100
Waste Code:	D007 - CHROMIUM 5.0 MG/L TCLP
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	00055
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	001
Container Type:	DF - Fiberboard or plastic drums (glass)
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	100

MILHAN REALTY CORP (Continued) **1004758044**

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

H53 **40 INGRAHAM ST** **NY AST** **U003384150**
WSW **40 INGRAHAM STREET** **N/A**
< 1/8 **BROOKLYN, NY 11206**
0.081 mi.
429 ft. **Site 2 of 7 in cluster H**

Relative:
Higher

Actual:
20 ft.

AST:

Name:	40 INGRAHAM ST
Address:	40 INGRAHAM STREET
City,State,Zip:	BROOKLYN, NY 11206
Region:	STATE
DEC Region:	2
Site Status:	Inactive
Facility Id:	2-083879
Program Type:	PBS
UTM X:	590250.68781
UTM Y:	4506748.04573
Expiration Date:	N/A
Site Type:	Manufacturing (Other than Chemical)/Processing

Affiliation Records:

Site Id:	1908
Affiliation Type:	Facility Owner
Company Name:	MILHAN REALTY CORP
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	2 INGRAHAM ST
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11206
Country Code:	001
Phone:	(718) 381-4400
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	1908
Affiliation Type:	Mail Contact
Company Name:	MILHAN REALTY CORP
Contact Type:	Not reported
Contact Name:	AL COHEN
Address1:	2 INGRAHAM ST
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11206
Country Code:	001
Phone:	(718) 381-4400
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

40 INGRAHAM ST (Continued) **U003384150**

Site Id:	1908
Affiliation Type:	Facility Operator
Company Name:	40 INGRAHAM ST
Contact Type:	Not reported
Contact Name:	AL COHEN-MILHAN REALTY CO
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 456-7676
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	1908
Affiliation Type:	Emergency Contact
Company Name:	MILHAN REALTY CORP
Contact Type:	Not reported
Contact Name:	AL COHEN-MILHAN REALTY CO
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 456-7676
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	001
Tank Id:	3152
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Equipment Records:

J02 - Dispenser - Suction Dispenser
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
I00 - Overfill - None
G03 - Tank Secondary Containment - Vault (w/o access)
H00 - Tank Leak Detection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
A00 - Tank Internal Protection - None

Tank Location:	Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Tank Converted to Non-Regulated Use
Pipe Model:	Not reported

40 INGRAHAM ST (Continued) **U003384150**

Install Date:	Not reported
Capacity Gallons:	3000
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	07/29/2003
Register:	True
Modified By:	TRANSLAT
Last Modified:	04/14/2017
Material Name:	#2 fuel oil (on-site consumption)

D54 **CON EDISON** **NY MANIFEST** **S117740530**
SSW **54 HARRISON PL** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.081 mi.
430 ft. **Site 6 of 9 in cluster D**

Relative:
Higher

Actual:
23 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004736997
Facility Status:	Not reported
Location Address 1:	F/O 54 HARRISON PL
Code:	BP
Location Address 2:	SB 8553
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004736997
Mailing Name:	CON EDISON
Mailing Contact:	TOM TEELING
Mailing Address 1:	4 IRVING PLACE - 15TH FLOOR
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2015
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	02/24/2015
Trans1 Recv Date:	02/24/2015
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	02/26/2015
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004736997
Trans1 EPA ID:	Not reported

CON EDISON (Continued) **S117740530**

Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002610801GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	1400
Units:	P - Pounds
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

D55 **CON EDISON** **NJ MANIFEST** **S120667761**
SSW **54 HARRISON PL** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.081 mi.
430 ft. **Site 7 of 9 in cluster D**

Relative: NJ MANIFEST:
Higher

Actual:
23 ft.

EPA Id:	NYP004736997
Mail Address:	IRVING PL, 15TH FL NE
Mail City/State/Zip:	NEW YORK, NY 10003
Facility Phone:	Not reported
Emergency Phone:	Not reported
Contact:	THOMAS TEELING
Comments:	Not reported
SIC Code:	Not reported
County:	NY047
Municipal:	Not reported
Previous EPA Id:	Not reported
Gen Flag:	Not reported
Trans Flag:	Not reported

CON EDISON (Continued) **S120667761**

TSDF Flag:	Not reported
Name Change:	Not reported
Date Change:	Not reported

Manifest:

Manifest Number:	002610801GBF
EPA ID:	NYP004736997
Date Shipped:	2/24/2015
TSDF EPA ID:	NJD991291105
Transporter EPA ID:	NJD003812047
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	Not reported
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	Not reported
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	NEW YORK, NY 10003
Reason Load Was Rejected:	Not reported

D56 **CON EDISON** **RCRA NonGen / NLR** **1018278914**
SSW **54 HARRISON PL** **FINDS** **NYP004736997**
< 1/8 **BROOKLYN, NY 11237** **ECHO**
0.081 mi.
430 ft. **Site 8 of 9 in cluster D**

Relative:
Higher

Actual:
23 ft.

RCRA NonGen / NLR:

Date form received by agency:	02/24/2015
Facility name:	CON EDISON
Facility address:	54 HARRISON PL

CON EDISON (Continued) **1018278914**

BROOKLYN, NY 11237
EPA ID: NYP004736997
Mailing address: IRVING PL, 15TH FL NE
NEW YORK, NY 10003
Contact: THOMAS TEELING
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: 212-460-3770
Contact email: Not reported
EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 02/24/2015
Site name: CON EDISON
Classification: Small Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110067683279

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1018278914

CON EDISON (Continued) **1018278914**

Registry ID: 110067683279
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110067683279

D57 **B.B. BODY AND AUTO REPAIR** **NY AST** **A100349539**
SSW **52 HARRISON PLACE** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.084 mi.
446 ft. **Site 9 of 9 in cluster D**

Relative:
Higher

Actual:
23 ft.

AST:
Name: B.B. BODY AND AUTO REPAIR
Address: 52 HARRISON PLACE
City,State,Zip: BROOKLYN, NY 11237
Region: STATE
DEC Region: 2
Site Status: Active
Facility Id: 2-611253
Program Type: PBS
UTM X: 590271.99404
UTM Y: 4506711.31333
Expiration Date: 02/18/2015
Site Type: Auto Service/Repair (No Gasoline Sales)

Affiliation Records:
Site Id: 424975
Affiliation Type: Facility Owner
Company Name: FRANKLIN ANDRAMUNO
Contact Type: Not reported
Contact Name: Not reported
Address1: 2670 BRIGGS AVE #1
Address2: Not reported
City: BRONX
State: NY
Zip Code: 10458
Country Code: 001
Phone: (718) 683-7965
EMail: Not reported
Fax Number: Not reported
Modified By: NRLOMBAR
Date Last Modified: 2010-02-18

Site Id: 424975
Affiliation Type: Mail Contact
Company Name: B.B. BODY AND AUTO REPAIR
Contact Type: Not reported
Contact Name: FRANKLIN ANDRAMUNO
Address1: 52 HARRISON PLACE
Address2: Not reported
City: BROOKLYN
State: NY
Zip Code: 11237
Country Code: 001
Phone: (718) 683-7965
EMail: Not reported
Fax Number: Not reported
Modified By: NRLOMBAR
Date Last Modified: 2010-02-18

B.B. BODY AND AUTO REPAIR (Continued) **A100349539**

Site Id:	424975
Affiliation Type:	Facility Operator
Company Name:	B.B. BODY AND AUTO REPAIR
Contact Type:	Not reported
Contact Name:	FRANKLIN ANDRAMUNO
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 683-7965
EMail:	Not reported
Fax Number:	Not reported
Modified By:	NRLOMBAR
Date Last Modified:	2010-02-18

Site Id:	424975
Affiliation Type:	Emergency Contact
Company Name:	FRANKLIN ANDRAMUNO
Contact Type:	Not reported
Contact Name:	FRANKLIN ANDRAMUNO
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 683-7965’
EMail:	Not reported
Fax Number:	Not reported
Modified By:	NRLOMBAR
Date Last Modified:	2010-02-18

Tank Info:

Tank Number:	001
Tank Id:	233043
Material Code:	0022
Common Name of Substance:	Waste Oil/Used Oil

Equipment Records:

I04 - Overfill - Product Level Gauge (A/G)
L00 - Piping Leak Detection - None
D00 - Pipe Type - No Piping
F00 - Pipe External Protection - None
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
E00 - Piping Secondary Containment - None
H00 - Tank Leak Detection - None
J02 - Dispenser - Suction Dispenser
G00 - Tank Secondary Containment - None
K00 - Spill Prevention - None
A00 - Tank Internal Protection - None

Tank Location: Aboveground - contact with impervious barrier... Tank bottom rests on impervious barrier, allowing visual indication of leaks.

B.B. BODY AND AUTO REPAIR (Continued) **A100349539**

Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	In Service
Pipe Model:	Not reported
Install Date:	12/01/2009
Capacity Gallons:	275
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	Not reported
Register:	True
Modified By:	NRLOMBAR
Last Modified:	04/14/2017
Material Name:	waste oil/used oil

G58 **CON EDISON SERVICE BOX: 16113** **RCRA NonGen / NLR** **1016962655**
WSW **99 MORGAN AVE** **NY MANIFEST** **NYP004357158**
< 1/8 **BROOKLYN, NY 11237**
0.087 mi.
461 ft. **Site 6 of 9 in cluster G**

Relative:
Higher

Actual:
19 ft.

RCRA NonGen / NLR:

Date form received by agency:	10/09/2013
Facility name:	CON EDISON SERVICE BOX: 16113
Facility address:	99 MORGAN AVE BROOKLYN, NY 11237
EPA ID:	NYP004357158
Mailing address:	IRVING PL, RM 828 NEW YORK, NY 10003
Contact:	LISA HUGHES
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	718-321-6958
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	09/09/2013

CON EDISON SERVICE BOX: 16113 (Continued) **1016962655**

Site name: CON EDISON SERVICE BOX: 16113
Classification: Conditionally Exempt Small Quantity Generator

Violation Status: No violations found

NY MANIFEST:
Country: USA
EPA ID: NYP004357158
Facility Status: Not reported
Location Address 1: 99 MORGAN AVE
Code: BP
Location Address 2: STRUCTURE # 16113
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: Not reported
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYP004357158
Mailing Name: CON EDISON
Mailing Contact: CON EDISON
Mailing Address 1: 4 IRVING PL 15TH FL
Mailing Address 2: Not reported
Mailing City: NEW YORK
Mailing State: NY
Mailing Zip: 10003
Mailing Zip 4: Not reported
Mailing Country: USA
Mailing Phone: 2124603770

NY MANIFEST:
Document ID: Not reported
Manifest Status: Not reported
seq: Not reported
Year: 2013
Trans1 State ID: NJD003812047
Trans2 State ID: Not reported
Generator Ship Date: 09/09/2013
Trans1 Recv Date: 09/09/2013
Trans2 Recv Date: Not reported
TSD Site Recv Date: 09/12/2013
Part A Recv Date: Not reported
Part B Recv Date: Not reported
Generator EPA ID: NYP004357158
Trans1 EPA ID: Not reported
Trans2 EPA ID: Not reported
TSDF ID 1: NJD991291105
TSDF ID 2: Not reported
Manifest Tracking Number: 002221597GBF
Import Indicator: N
Export Indicator: N
Discr Quantity Indicator: N
Discr Type Indicator: N
Discr Residue Indicator: N
Discr Partial Reject Indicator: N
Discr Full Reject Indicator: N
Manifest Ref Number: Not reported

CON EDISON SERVICE BOX: 16113 (Continued) **1016962655**

Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	60
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

G59 **CON EDISON** **NY MANIFEST** **S113920706**
WSW **99 MORGAN AVE** **N/A**
< 1/8 **BROOKLYN, NY**
0.087 mi.
461 ft. **Site 7 of 9 in cluster G**

Relative: **Higher**
Actual: **19 ft.**

NY MANIFEST:

Country:	USA
EPA ID:	NYP004368031
Facility Status:	Not reported
Location Address 1:	99 MORGAN AVE
Code:	BP
Location Address 2:	SB 16113
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	Not reported
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004368031
Mailing Name:	CON EDISON
Mailing Contact:	CON EDISON
Mailing Address 1:	4 IRVING PL 15TH FL
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	2124603770

CON EDISON (Continued) **S113920706**

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2013
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	09/30/2013
Trans1 Recv Date:	09/30/2013
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	10/02/2013
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004368031
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002236429GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	50
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

F60 **CON ED** **NY MANIFEST** **S118259248**
SSE **89 GRATTAN ST** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.088 mi.
465 ft. **Site 3 of 7 in cluster F**

Relative:
Higher

Actual:
23 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004828754
Facility Status:	Not reported
Location Address 1:	89 GRATTAN STREET
Code:	BP
Location Address 2:	SB 8523
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004828754
Mailing Name:	CON ED
Mailing Contact:	TOM TEELING
Mailing Address 1:	4 IRVING PLACE - 15TH FLOOR
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	2124603770

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2015
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	08/24/2015
Trans1 Recv Date:	08/24/2015
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	08/26/2015
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004828754
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002624836GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported

CON ED (Continued) **S118259248**

Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	50
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

F61 **CON EDISON** **RCRA NonGen / NLR** **1019906981**
SSE **89 GRATTAN ST** **NYP004828754**
< 1/8 **BROOKLYN, NY 11237**
0.088 mi.
465 ft. **Site 4 of 7 in cluster F**

Relative: **Higher**

Actual: **23 ft.**

RCRA NonGen / NLR:

Date form received by agency:	08/24/2015
Facility name:	CON EDISON
Facility address:	89 GRATTAN ST BROOKLYN, NY 11237
EPA ID:	NYP004828754
Mailing address:	IRVING PL 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	212-460-3770
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No

CON EDISON (Continued) **1019906981**

On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	08/24/2015
Site name:	CON EDISON
Classification:	Small Quantity Generator

Violation Status: No violations found

F62 **CON EDISON** **NJ MANIFEST** **S120675808**
SSE **89 GRATTAN ST** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.088 mi.
465 ft. **Site 5 of 7 in cluster F**

Relative:
Higher

Actual:
23 ft.

NJ MANIFEST:

EPA Id:	NYP004828754
Mail Address:	IRVING PL 15TH FL NE
Mail City/State/Zip:	NEW YORK, NY 10003
Facility Phone:	Not reported
Emergency Phone:	Not reported
Contact:	THOMAS TEELING
Comments:	Not reported
SIC Code:	Not reported
County:	NY047
Municipal:	Not reported
Previous EPA Id:	Not reported
Gen Flag:	Not reported
Trans Flag:	Not reported
TSDF Flag:	Not reported
Name Change:	Not reported
Date Change:	Not reported

Manifest:

Manifest Number:	002624836GBF
EPA ID:	NYP004828754
Date Shipped:	8/24/2015
TSDF EPA ID:	NJD991291105
Transporter EPA ID:	NJD003812047
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	Not reported
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported

CON EDISON (Continued) **S120675808**

Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	Not reported
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	NEW YORK, NY 10003
Reason Load Was Rejected:	Not reported

I63 **IDEAL SERVICENTER** **EDR Hist Auto** **1020353011**
SSW **66 KNICKERBOCKER AV** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.090 mi.
477 ft. **Site 1 of 4 in cluster I**

Relative: EDR Hist Auto
Higher

Actual:
24 ft.

Year:	Name:	Type:
1969	IDEAL SERVICENTER	Gasoline Service Stations
1970	IDEAL SERVICENTER	Gasoline Service Stations
1971	IDEAL SERVICENTER	Gasoline Service Stations
1972	IDEAL SERVICENTER	Gasoline Service Stations
1973	IDEAL SERVICENTER	Gasoline Service Stations
1974	IDEAL SERVICENTER	Gasoline Service Stations
1975	IDEAL SERVICENTER	Gasoline Service Stations
1985	B D S ASSOCIATES INC	Gasoline Service Stations
1986	B D S ASSOCIATES INC	Gasoline Service Stations
1987	B D S ASSOCIATES INC	Gasoline Service Stations
1988	B D S ASSOCIATES INC	Gasoline Service Stations
1989	B D S ASSOCIATES INC	Gasoline Service Stations
1990	B D S ASSOCIATES INC	Gasoline Service Stations
1991	B D S ASSOCIATES INC	Gasoline Service Stations
1992	B D S ASSOCIATES INC	Gasoline Service Stations
1993	B D S ASSOCIATES INC	Gasoline Service Stations
1994	IDEAL AUTO REPAIR CORP	General Automotive Repair Shops
1995	IDEAL AUTO REPAIR CORP	General Automotive Repair Shops

I64 **66-78 KNICKERBOCKER AVE** **NY UST** **U004045714**
SSW **66-78 KNICKERBOCKER AVENUE** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.090 mi.
477 ft. **Site 2 of 4 in cluster I**

Relative:
Higher

Actual:
24 ft.

UST:

Name:	66-78 KNICKERBOCKER AVE
Address:	66-78 KNICKERBOCKER AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Id/Status:	2-609421 / Unregulated/Closed
Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	N/A
UTM X:	581567.86165
UTM Y:	4498218.63601
Site Type:	Other Wholesale/Retail Sales

Affiliation Records:

Site Id:	31265
Affiliation Type:	Facility Owner
Company Name:	6678 KNICKERBOCKER REALTY ASSOC., LLC
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	519 FLUSHING AVE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11205
Country Code:	001
Phone:	(718) 855-1100
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	31265
Affiliation Type:	Mail Contact
Company Name:	JADE ENVIRONMENTAL, INC.
Contact Type:	Not reported
Contact Name:	DAVE PELLETIER
Address1:	8 LINDEN ROAD
Address2:	Not reported
City:	CARMEL
State:	NY
Zip Code:	10512
Country Code:	001
Phone:	(914) 882-6074
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	31265
Affiliation Type:	Facility Operator
Company Name:	66-78 KNICKERBOCKER AVE
Contact Type:	Not reported
Contact Name:	DAVE PELLETIER
Address1:	Not reported

66-78 KNICKERBOCKER AVE (Continued) **U004045714**

Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(914) 882-6074
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	31265
Affiliation Type:	Emergency Contact
Company Name:	6678 KNICKERBOCKER REALTY ASSOC., LLC
Contact Type:	Not reported
Contact Name:	DAVE PELLETIER
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(914) 882-6074
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	1
Tank ID:	67378
Tank Status:	Closed - Removed
Material Name:	Closed - Removed
Capacity Gallons:	550
Install Date:	Not reported
Date Tank Closed:	09/30/2003
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0009
Common Name of Substance:	Gasoline

Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
B05 - Tank External Protection - Jacketed
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser

66-78 KNICKERBOCKER AVE (Continued) **U004045714**

F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Number: 10
Tank ID: 67387
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: 09/30/2003
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
B05 - Tank External Protection - Jacketed
J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Number: 2
Tank ID: 67379
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: 09/30/2003
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

66-78 KNICKERBOCKER AVE (Continued) **U004045714**

H00 - Tank Leak Detection - None
I00 - Overfill - None
B05 - Tank External Protection - Jacketed
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
F00 - Pipe External Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
A00 - Tank Internal Protection - None

Tank Number: 3
Tank ID: 67380
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: 09/30/2003
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
B05 - Tank External Protection - Jacketed
J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Number: 4
Tank ID: 67381
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: 09/30/2003
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported

66-78 KNICKERBOCKER AVE (Continued) **U004045714**

Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
B05 - Tank External Protection - Jacketed
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
F00 - Pipe External Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
A00 - Tank Internal Protection - None

Tank Number: 5
Tank ID: 67382
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: 09/30/2003
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
B05 - Tank External Protection - Jacketed
J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Number: 6
Tank ID: 67383
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: 09/30/2003
Registered: True
Tank Location: Underground

66-78 KNICKERBOCKER AVE (Continued) **U004045714**

Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
B05 - Tank External Protection - Jacketed
J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Number: 7
Tank ID: 67384
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: 09/30/2003
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
B05 - Tank External Protection - Jacketed
J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Number: 8
Tank ID: 67385
Tank Status: Closed - Removed

66-78 KNICKERBOCKER AVE (Continued) **U004045714**

Material Name:	Closed - Removed
Capacity Gallons:	550
Install Date:	Not reported
Date Tank Closed:	09/30/2003
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0009
Common Name of Substance:	Gasoline
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
B05 - Tank External Protection - Jacketed
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
F00 - Pipe External Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
A00 - Tank Internal Protection - None

Tank Number:	9
Tank ID:	67386
Tank Status:	Closed - Removed
Material Name:	Closed - Removed
Capacity Gallons:	550
Install Date:	Not reported
Date Tank Closed:	09/30/2003
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0009
Common Name of Substance:	Gasoline
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
B05 - Tank External Protection - Jacketed
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
F00 - Pipe External Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

66-78 KNICKERBOCKER AVE (Continued) **U004045714**

A00 - Tank Internal Protection - None

F65 **CON EDISON SERVICE BOX: 8524** **RCRA NonGen / NLR** **1017779707**
SSE **103 GRATTAN ST** **NYP004577177**
< 1/8 **BROOKLYN, NY 11237**
0.093 mi.
491 ft. **Site 6 of 7 in cluster F**

Relative:
Higher

Actual:
23 ft.

RCRA NonGen / NLR:

Date form received by agency:	07/26/2014
Facility name:	CON EDISON SERVICE BOX: 8524
Facility address:	103 GRATTAN ST BROOKLYN, NY 11237
EPA ID:	NYP004577177
Mailing address:	IRVING PL, 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	212-460-3770
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	06/26/2014
Site name:	CON EDISON
Classification:	Small Quantity Generator

Date form received by agency:	06/26/2014
Site name:	CON EDISON
Classification:	Not a generator, verified

Violation Status: No violations found

F66 **CON EDISON** **NY MANIFEST** **S117065180**
SSE **103 GRATTAN ST** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.093 mi.
491 ft. **Site 7 of 7 in cluster F**

Relative:
Higher

Actual:
23 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004577177
Facility Status:	Not reported
Location Address 1:	103 GRATTAN ST
Code:	BP
Location Address 2:	SB 8524
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004577177
Mailing Name:	CON EDISON
Mailing Contact:	TOM TEELING
Mailing Address 1:	4 IRVING PLACE 15TH FLOOR
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	06/26/2014
Trans1 Recv Date:	06/26/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	06/27/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004577177
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002502913GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported

CON EDISON (Continued) **S117065180**

Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	50
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

J67 **100 MORGAN AVENUE** **NY LTANKS** **S104278698**
WNW **100 MORGAN AVE** **N/A**
< 1/8 **BROOKLYN, NY**
0.094 mi.
498 ft. **Site 1 of 8 in cluster J**

Relative: LTANKS:
Lower

Name:	100 MORGAN AVENUE
Address:	100 MORGAN AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9909719 / 2000-11-20
Facility ID:	9909719
Site ID:	328581
Spill Date:	1999-11-10
Spill Cause:	Tank Test Failure
Spill Source:	Commercial/Industrial
Spill Class:	B3
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	SIGONA
Referred To:	Not reported
Reported to Dept:	1999-11-10
CID:	281
Water Affected:	Not reported
Spill Notifier:	Tank Tester
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	True
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	1999-11-10
Spill Record Last Update:	2000-11-20

Actual:
13 ft.

100 MORGAN AVENUE (Continued) **S104278698**

Spiller Name: KEVIN LUMPE
Spiller Company: STEEL LOS LP
Spiller Address: HICKSVILLE RD
Spiller County: 001
Spiller Contact: KEVIN LUMPE
Spiller Phone: (516) 576-3165
Spiller Extention: Not reported
DEC Region: 2
DER Facility ID: 264440
DEC Memo: ""
Remarks: "TANK PERFORMED AT ABOVE LOCATION. PLANS HAVE BEEN MADE TO REMOVE TANK. NO CALL BACK REQUESTED."

All TTF:
Facility ID: 9909719
Spill Number: 9909719
Spill Tank Test: 1547833
Site ID: 328581
Tank Number: Not reported
Tank Size: 2500
Material: 0001
EPA UST: Not reported
UST: Not reported
Cause: Not reported
Source: Not reported
Test Method: 03
Test Method 2: Horner EZ Check I or II
Leak Rate: .00
Gross Fail: F
Modified By: Spills
Last Modified Date: Not reported

All Materials:
Site ID: 328581
Operable Unit ID: 1084487
Operable Unit: 01
Material ID: 298793
Material Code: 0001A
Material Name: #2 fuel oil
Case No.: Not reported
Material FA: Petroleum
Quantity: .00
Units: G
Recovered: .00
Oxygenate: Not reported

J68 **ENVELOPE CONVERTORS INC** **RCRA NonGen / NLR** **1000205282**
WNW **100 MORGAN AVE** **FINDS** **NYD001360635**
< 1/8 **BROOKLYN, NY 11237** **ECHO**
0.094 mi. **NY MANIFEST**
498 ft. **Site 2 of 8 in cluster J**

Relative: **Lower**
Actual: **13 ft.**

RCRA NonGen / NLR:
Date form received by agency: 01/01/2007
Facility name: ENVELOPE CONVERTORS INC
Facility address: 100 MORGAN AVE
BROOKLYN, NY 11237-1497

ENVELOPE CONVERTORS INC (Continued) **1000205282**

EPA ID: NYD001360635
Mailing address: MORGAN AVE
BROOKLYN, NY 11237
Contact: Not reported
Contact address: MORGAN AVE
BROOKLYN, NY 11237
Contact country: US
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 02
Land type: Facility is not located on Indian land. Additional information is not known.
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: NEW YORK ENVELOPE CORP
Owner/operator address: NOT REQUIRED
NOT REQUIRED, WY 99999
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NEW YORK ENVELOPE CORP
Owner/operator address: NOT REQUIRED
NOT REQUIRED, WY 99999
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No

ENVELOPE CONVERTORS INC (Continued) **1000205282**

Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2006
Site name: ENVELOPE CONVERTORS INC
Classification: Not a generator, verified

Date form received by agency: 07/08/1999
Site name: ENVELOPE CONVERTORS INC
Classification: Not a generator, verified

Date form received by agency: 03/11/1987
Site name: ENVELOPE CONVERTORS INC
Classification: Small Quantity Generator

Hazardous Waste Summary:

. Waste code: F001
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE, TRICHLORETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE AND CHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F002
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2, TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Facility Has Received Notices of Violations:
Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 06/13/1991
Date achieved compliance: 09/05/1991
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/13/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 05/15/1991

ENVELOPE CONVERTORS INC (Continued) **1000205282**

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 09/05/1991
Evaluation lead agency: State

FINDS:

Registry ID: 110055208163

Environmental Interest/Information System
US National Pollutant Discharge Elimination System (NPDES) module of the Compliance Information System (ICIS) tracks surface water permits issued under the Clean Water Act. Under NPDES, all facilities that discharge pollutants from any point source into waters of the United States are required to obtain a permit. The permit will likely contain limits on what can be discharged, impose monitoring and reporting requirements, and include other provisions to ensure that the discharge does not adversely affect water quality.

Registry ID: 110004334060

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000205282
Registry ID: 110055208163
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110055208163

Envid: 1000205282
Registry ID: 110004334060
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110004334060

NY MANIFEST:
Country: USA
EPA ID: NYD001360635
Facility Status: Not reported
Location Address 1: 100 MORGAN AVENUE
Code: BP
Location Address 2: Not reported
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: 11379
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYD001360635

ENVELOPE CONVERTORS INC (Continued) **1000205282**

Mailing Name:	ENVELOPE CONVERTERS INC
Mailing Contact:	ENVELOPE CONVERTERS INC
Mailing Address 1:	100 MORGAN AVENUE
Mailing Address 2:	Not reported
Mailing City:	BROOKLYN
Mailing State:	NY
Mailing Zip:	11237
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	7183866000

NY MANIFEST:

Document ID:	NJA2521302
Manifest Status:	K
seq:	Not reported
Year:	1996
Trans1 State ID:	08690
Trans2 State ID:	00602
Generator Ship Date:	07/26/1996
Trans1 Recv Date:	07/26/1996
Trans2 Recv Date:	07/30/1996
TSD Site Recv Date:	07/30/1996
Part A Recv Date:	/ /
Part B Recv Date:	08/21/1996
Generator EPA ID:	NYD001360635
Trans1 EPA ID:	ILD984908202
Trans2 EPA ID:	NYD980769947
TSDF ID 1:	NJD002182897
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	D001 - NON-LISTED IGNITABLE WASTES
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	02360
Units:	P - Pounds
Number of Containers:	005
Container Type:	DM - Metal drums, barrels
Handling Method:	B Incineration, heat recovery, burning.
Specific Gravity:	100

ENVELOPE CONVERTORS INC (Continued) **1000205282**

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

J69 **FED EX** **NY Spills** **S123159571**
WNW **100 MORGAN AVE** **N/A**
< 1/8 **BROOKLYN, NY**
0.094 mi.
498 ft. **Site 3 of 8 in cluster J**

Relative: **Lower**

Actual: **13 ft.**

SPILLS:

Name:	FED EX
Address:	100 MORGAN AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	1807604 / 2018-11-20
Facility ID:	1807604
Facility Type:	ER
DER Facility ID:	264440
Site ID:	578371
DEC Region:	2
Spill Cause:	Equipment Failure
Spill Class:	C4
SWIS:	2401
Spill Date:	2018-10-16
Investigator:	AAOBLIGA
Referred To:	Not reported
Reported to Dept:	2018-10-16
CID:	Not reported
Water Affected:	Not reported
Spill Source:	Commercial Vehicle
Spill Notifier:	Other
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2018-10-16
Spill Record Last Update:	2018-11-27
Spiller Name:	HEATHER
Spiller Company:	FED EX
Spiller Address:	100 MORGAN AVE
Spiller Company:	999
Contact Name:	HEATHER
DEC Memo:	"10/16/18 - Desk Duty - Obligado - Desk Duty - I spoke to Heather. The spill is on a fedex facility. No drains impacted. Speedy dry has been put down. A contractor is enroute. She will email me when the cleanup is complete. 11/20/18 - Obligado - I received a Correction Action Final Report. Clean up was performed by Hepaco. They used absorbent materials and generating (2) 55-gallon metal drums of impacted materials. According to the report, no evidence of significant environmental impact remains. Non-hazardous waste manifests were provided. Spill closed."
Remarks:	"lost to roadway. c/u pending"

All Materials:

Site ID:	578371
Operable Unit ID:	1326122
Operable Unit:	01

FED EX (Continued) **S123159571**

Material ID:	2334833
Material Code:	0008
Material Name:	diesel
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	120.00
Units:	G
Recovered:	20.00
Oxygenate:	Not reported

J70 **STEEL LOS** **NY UST U003200578**
WNW **100 MORGAN AVENUE** **NY AST N/A**
< 1/8 **BROOKLYN, NY 11237**
0.094 mi.
498 ft. **Site 4 of 8 in cluster J**

Relative:
Lower

Actual:
13 ft.

UST:

Name:	STEEL LOS
Address:	100 MORGAN AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Id/Status:	2-603123 / Unregulated/Closed
Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	N/A
UTM X:	590181.07756
UTM Y:	4506936.52807
Site Type:	Unknown

Affiliation Records:

Site Id:	25075
Affiliation Type:	Facility Owner
Company Name:	STEEL LOS
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	700 HICKSVILLE ROAD
Address2:	Not reported
City:	BETHPAGE
State:	NY
Zip Code:	11714
Country Code:	001
Phone:	(516) 576-3165
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	25075
Affiliation Type:	Mail Contact
Company Name:	STEEL LOS
Contact Type:	Not reported
Contact Name:	JOSEPH LOSTRITTO
Address1:	700 HICKSVILLE ROAD
Address2:	Not reported
City:	BETHPAGE
State:	NY
Zip Code:	11714

STEEL LOS (Continued) **U003200578**

Country Code:	001
Phone:	(516) 576-3165
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04
Site Id:	25075
Affiliation Type:	Facility Operator
Company Name:	STEEL LOS
Contact Type:	Not reported
Contact Name:	STEVEN SPALLINO
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 366-6513
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04
Site Id:	25075
Affiliation Type:	Emergency Contact
Company Name:	STEEL LOS
Contact Type:	Not reported
Contact Name:	STEVEN SPALLINO
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 366-6513
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	002
Tank ID:	53160
Tank Status:	Closed - Removed
Material Name:	Closed - Removed
Capacity Gallons:	2500
Install Date:	01/01/1965
Date Tank Closed:	11/01/1999
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)
Tightness Test Method:	NN

STEEL LOS (Continued) **U003200578**

Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
H00 - Tank Leak Detection - None
I00 - Overfill - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
D01 - Pipe Type - Steel/Carbon Steel/Iron
F01 - Pipe External Protection - Painted/Asphalt Coating

Tank Number:	003
Tank ID:	53161
Tank Status:	Closed - In Place
Material Name:	Closed - In Place
Capacity Gallons:	3000
Install Date:	01/01/1965
Date Tank Closed:	11/01/1999
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
D01 - Pipe Type - Steel/Carbon Steel/Iron
F01 - Pipe External Protection - Painted/Asphalt Coating

AST:

Name:	STEEL LOS
Address:	100 MORGAN AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Region:	STATE
DEC Region:	2
Site Status:	Unregulated/Closed
Facility Id:	2-603123
Program Type:	PBS

STEEL LOS (Continued) **U003200578**

UTM X: 590181.07756
UTM Y: 4506936.52807
Expiration Date: N/A
Site Type: Unknown

Affiliation Records:

Site Id: 25075
Affiliation Type: Facility Owner
Company Name: STEEL LOS
Contact Type: Not reported
Contact Name: Not reported
Address1: 700 HICKSVILLE ROAD
Address2: Not reported
City: BETHPAGE
State: NY
Zip Code: 11714
Country Code: 001
Phone: (516) 576-3165
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 25075
Affiliation Type: Mail Contact
Company Name: STEEL LOS
Contact Type: Not reported
Contact Name: JOSEPH LOSTRITTO
Address1: 700 HICKSVILLE ROAD
Address2: Not reported
City: BETHPAGE
State: NY
Zip Code: 11714
Country Code: 001
Phone: (516) 576-3165
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 25075
Affiliation Type: Facility Operator
Company Name: STEEL LOS
Contact Type: Not reported
Contact Name: STEVEN SPALLINO
Address1: Not reported
Address2: Not reported
City: Not reported
State: NN
Zip Code: Not reported
Country Code: 001
Phone: (718) 366-6513
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 25075

STEEL LOS (Continued) **U003200578**

Affiliation Type:	Emergency Contact
Company Name:	STEEL LOS
Contact Type:	Not reported
Contact Name:	STEVEN SPALLINO
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 366-6513
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	001
Tank Id:	53159
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Equipment Records:

	H00 - Tank Leak Detection - None
	I00 - Overfill - None
	C01 - Pipe Location - Aboveground
	G00 - Tank Secondary Containment - None
	B00 - Tank External Protection - None
	F00 - Pipe External Protection - None
	A00 - Tank Internal Protection - None
	D01 - Pipe Type - Steel/Carbon Steel/Iron
Tank Location:	Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Closed - Removed
Pipe Model:	Not reported
Install Date:	05/01/1988
Capacity Gallons:	2500
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	01/01/2000
Register:	True
Modified By:	TRANSLAT
Last Modified:	04/14/2017
Material Name:	#2 fuel oil (on-site consumption)

H71 **MTA NYCT - MORGAN AVENUE STATION - L LINE** **NY MANIFEST** **S118091526**
SW **HARRISON PLACE & MORGAN AVE** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.097 mi.
513 ft. **Site 3 of 7 in cluster H**

Relative:
Higher

Actual:
22 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYR000163543
Facility Status:	Not reported
Location Address 1:	HARRISON PLACE & MORGAN AVE
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYR000163543
Mailing Name:	MTA NYCT - MORGAN AVENUE STATION - L LINE
Mailing Contact:	NYCT-OSS(CPM) CONT# A36912
Mailing Address 1:	2 BROADWAY - RM A27.64
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10004
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	6462525777

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2015
Trans1 State ID:	NJ0000027193
Trans2 State ID:	Not reported
Generator Ship Date:	05/29/2015
Trans1 Recv Date:	05/29/2015
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	05/29/2015
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYR000163543
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD002200046
TSDF ID 2:	Not reported
Manifest Tracking Number:	013244705JJK
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported

MTA NYCT - MORGAN AVENUE STATION - L LINE (Continued) **S118091526**

Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	200
Units:	P - Pounds
Number of Containers:	1
Container Type:	DM - Metal drums, barrels
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

H72 **MTA NYCT - MORGAN AVENUE STATION - L LINE** **RCRA-SQG** **1012186493**
SW **HARRISON PLACE & MORGAN AVE** **NYR000163543**
< 1/8 **BROOKLYN, NY 11237**
0.097 mi.
513 ft. **Site 4 of 7 in cluster H**

Relative: **Higher**

Actual: **22 ft.**

RCRA-SQG:

Date form received by agency:	03/23/2009
Facility name:	MTA NYCT - MORGAN AVENUE STATION - L LINE
Facility address:	HARRISON PLACE & MORGAN AVE BROOKLYN, NY 11237
EPA ID:	NYR000163543
Mailing address:	BROADWAY 5TH FLOOR 503 NEW YORK, NY 10004
Contact:	GERALD LEZEAU
Contact address:	BROADWAY 5TH FLOOR 503 NEW YORK, NY 10004
Contact country:	US
Contact telephone:	646-252-3535
Contact email:	GERALD.LEZEAU@NYCT.COM
EPA Region:	02
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	MTA NYCT
Owner/operator address:	Not reported

MTA NYCT - MORGAN AVENUE STATION - L LINE (Continued) **1012186493**

	Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	State
Owner/Operator Type:	Owner
Owner/Op start date:	03/01/1968
Owner/Op end date:	Not reported
Owner/operator name:	MTA NYCT
Owner/operator address:	Not reported
	Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	State
Owner/Operator Type:	Operator
Owner/Op start date:	03/01/1968
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Hazardous Waste Summary:

. Waste code:	D008
. Waste name:	LEAD

Violation Status: No violations found

H73 **MTA NYCT - MORGAN AVENUE STATION - L LINE** **NJ MANIFEST** **S120678864**
SW **HARRISON PLACE & MORGAN AVE** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.097 mi.
513 ft. **Site 5 of 7 in cluster H**

Relative:
Higher

Actual:
22 ft.

NJ MANIFEST:

EPA Id:	NYR000163543
Mail Address:	BROADWAY 5TH FLOOR 503
Mail City/State/Zip:	NEW YORK, NY 10004
Facility Phone:	Not reported
Emergency Phone:	Not reported
Contact:	GERALD LEZEAU
Comments:	Not reported
SIC Code:	Not reported
County:	NY047
Municipal:	Not reported
Previous EPA Id:	Not reported
Gen Flag:	Not reported
Trans Flag:	Not reported
TSDF Flag:	Not reported
Name Change:	Not reported
Date Change:	Not reported

Manifest:

Manifest Number:	013244705JJK
EPA ID:	NYR000163543
Date Shipped:	5/29/2015
TSDF EPA ID:	NJD002200046
Transporter EPA ID:	NJ0000027193
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	Not reported
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	Not reported
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported

MTA NYCT - MORGAN AVENUE STATION - L LINE (Continued) **S120678864**

Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	NEW YORK, NY 10004
Reason Load Was Rejected:	Not reported

K74 **WASTE MANAGEMENT OF NY LLC - NYC HAULING** **NY SWRCY** **S104953192**
NE **101 VARICK AVE** **NY Spills** **N/A**
< 1/8 **BROOKLYN, NY 10454** **NY SPDES**
0.098 mi.
520 ft. **Site 1 of 2 in cluster K**

Relative:
Lower

Actual:
9 ft.

SWRCY:

Region:	2
Facility Address 2:	Not reported
Phone Number:	7183867900
Owner Type:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Owner Email:	Not reported
Owner Phone:	Not reported
Contact Name:	ANTHONY LOMANGINO; PRES.
Contact Address:	Not reported
Contact Address 2:	Not reported
Contact City,St,Zip:	Not reported
Contact Email:	Not reported
Contact Phone:	Not reported
Activity Desc:	z Retired - RHRF - registration
Activity Number:	[24MD7]
Active:	No
East Coordinate:	Not reported
North Coordinate:	Not reported
Accuracy Code:	Not reported
Regulatory Status:	Not reported
Permit #:	Not reported
Auth. Date:	Not reported
Expiration Date:	Not reported
Waste Types:	Not reported
Operator Name:	Not reported
Operator Type:	Not reported
Last Date:	Not reported

SPILLS:

Name:	WASTE MANAGEMENT
Address:	101 VARICK AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0012799 / 2001-03-05
Facility ID:	0012799
Facility Type:	ER
DER Facility ID:	264863
Site ID:	329115
DEC Region:	2
Spill Cause:	Other

WASTE MANAGEMENT OF NY LLC - NYC HAULING (Continued) **S104953192**

Spill Class:	C4
SWIS:	2401
Spill Date:	2001-03-03
Investigator:	TJDEMEO
Referred To:	Not reported
Reported to Dept:	2001-03-03
CID:	396
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Local Agency
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2001-03-03
Spill Record Last Update:	2001-07-11
Spiller Name:	Not reported
Spiller Company:	LAFAYETTE GRINDING
Spiller Address:	115 BANKER ST
Spiller Company:	001
Contact Name:	NYC DEP
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was DEMEO nyfd RESPONDED TO SCENE OF SMOKING DEBRIS. NO SPILL"
Remarks:	"caller was advised by waste management that they picked up a 20 yard roll off container of unk. material in dirt...it is smoking...container was picked up at lafayette grinding and transported to wastemanagement facility...it is still there now."

All Materials:

Site ID:	329115
Operable Unit ID:	834334
Operable Unit:	01
Material ID:	543069
Material Code:	0064A
Material Name:	unknown material
Case No.:	Not reported
Material FA:	Other
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

Name:	WASTE MANAGEMENT
Address:	101 VARICK AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	1001432 / 2010-09-02
Facility ID:	1001432
Facility Type:	ER
DER Facility ID:	264863
Site ID:	434486
DEC Region:	2
Spill Cause:	Unknown
Spill Class:	Not reported
SWIS:	2401
Spill Date:	2010-05-06

WASTE MANAGEMENT OF NY LLC - NYC HAULING (Continued) **S104953192**

Investigator:	HRAHMED
Referred To:	Not reported
Reported to Dept:	2010-05-06
CID:	Not reported
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Other
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2010-05-06
Spill Record Last Update:	2010-09-02
Spiller Name:	JAY KAPLAN
Spiller Company:	HISTORICAL SPILL
Spiller Address:	101 VARICK AVE
Spiller Company:	999
Contact Name:	JAY KAPLAN
DEC Memo:	"7/7/10-HRAHMED-Receieved Remedial Action report from Day Environmental. 8/4/10-HRAHMED-Started Reviewing Remedial Action report. PBS#2-605608 Requirements: 1) Update PBS records to reflect closure and removal of 8000 gal UST and resolve conflicts with Fire dept. record "
Remarks:	"During excavation abandoned tank filled with concrete was found. Soil was contaminated. Clean up is in progress. Environmnetal Consultant has been hired to perform an environmnetal closure report and remeidiation."

All Materials:

Site ID:	434486
Operable Unit ID:	1185310
Operable Unit:	01
Material ID:	2179628
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	Not reported
Units:	Not reported
Recovered:	Not reported
Oxygenate:	Not reported

SPDES:

Permit Number:	NYR00D388
State-Region:	02
Expiration Date:	03/31/2012
Current Major Minor Status:	Minor
Primary Facility SIC Code:	4212
State Water Body Name:	ENGLISH KILLS CREEK
Limit Set Status Flag:	Active
Total Actual Average Flow(MGD):	Not reported
Total App Design Flow(MGD):	Not reported
UDF1:	Not reported

WASTE MANAGEMENT OF NY LLC - NYC HAULING (Continued) **S104953192**

Lat/Long:	+40.708806 / -73.928222
DMR Cognizant Official:	Not reported
UDF2:	Not reported
UDF3:	Not reported
FIPS County Code:	NY047
Non-Gov Permit Affiliation Type Desc:	DMR Mailing Address
Non-Gov Permit Org Formal Name:	WAST MANAGEMENT OF NEW YORK LLC
Non-Gov Permit Street Address:	NYC HAULING
Non-Gov Permit Supplemental Location:	123 VARICK AVE
Non-Gov Permit City:	BROOKLYN
Non-Gov Permit State Code:	NY
Non-Gov Permit Zip Code:	11237
Non-Gov Facility Affiliation Type Desc:	Owner
Non-Gov Facility Org Formal Name:	WASTE MANAGEMENT OF NEW YORK LLC
Non-Gov Facility Street Address:	WASTE MANAGEMENT OF NY LLC - NYC HAULING
Non-Gov Facility Supplemental Location:	123 VARICK AVE
Non-Gov Facility City:	BROOKLYN
Non-Gov Facility State Code:	NY
Non-Gov Facility Zip Code:	11237
State Water Body:	Not reported
UDF2:	Not reported
UDF3:	Not reported
FIPS County Code:	NY047
Non-Gov Permit Affiliation Type Desc:	Permittee
Non-Gov Permit Org Formal Name:	WASTE MANAGEMENT OF NEW YORK LLC
Non-Gov Permit Street Address:	123 VARICK AVE
Non-Gov Permit Supplemental Location:	Not reported
Non-Gov Permit City:	BROOKLYN
Non-Gov Permit State Code:	NY
Non-Gov Permit Zip Code:	11237
Non-Gov Facility Affiliation Type Desc:	Owner
Non-Gov Facility Org Formal Name:	WASTE MANAGEMENT OF NEW YORK LLC
Non-Gov Facility Street Address:	WASTE MANAGEMENT OF NY LLC - NYC HAULING
Non-Gov Facility Supplemental Location:	123 VARICK AVE
Non-Gov Facility City:	BROOKLYN
Non-Gov Facility State Code:	NY
Non-Gov Facility Zip Code:	11237
State Water Body:	Not reported
UDF2:	Not reported
UDF3:	Not reported
FIPS County Code:	NY047
Non-Gov Permit Affiliation Type Desc:	Not reported
Non-Gov Permit Org Formal Name:	Not reported
Non-Gov Permit Street Address:	Not reported
Non-Gov Permit Supplemental Location:	Not reported
Non-Gov Permit City:	Not reported
Non-Gov Permit State Code:	Not reported
Non-Gov Permit Zip Code:	Not reported
Non-Gov Facility Affiliation Type Desc:	Owner
Non-Gov Facility Org Formal Name:	WASTE MANAGEMENT OF NEW YORK LLC
Non-Gov Facility Street Address:	WASTE MANAGEMENT OF NY LLC - NYC HAULING
Non-Gov Facility Supplemental Location:	123 VARICK AVE

WASTE MANAGEMENT OF NY LLC - NYC HAULING (Continued) **S104953192**

Non-Gov Facility City: BROOKLYN
Non-Gov Facility State Code: NY
Non-Gov Facility Zip Code: 11237
State Water Body: Not reported

K75 **101 VARICK, WASTE MANAGEMENT OF NY, LLC** **NY UST** **U003790770**
NE **101 VARICK AVENUE** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.098 mi.
520 ft. **Site 2 of 2 in cluster K**

Relative:
Lower

Actual:
9 ft.

UST:
Name: 101 VARICK, WASTE MANAGEMENT OF NY, LLC
Address: 101 VARICK AVENUE
City,State,Zip: BROOKLYN, NY 11237
Id/Status: 2-605608 / Unregulated/Closed
Program Type: PBS
Region: STATE
DEC Region: 2
Expiration Date: N/A
UTM X: 590627.55497
UTM Y: 4506985.67143
Site Type: Other

Affiliation Records:
Site Id: 27475
Affiliation Type: Mail Contact
Company Name: ADAR HOLDINGS
Contact Type: Not reported
Contact Name: CHARLES KRIEGER
Address1: 101 VARICK AVENUE
Address2: Not reported
City: BROOKLYN
State: NY
Zip Code: 11237
Country Code: 001
Phone: (718) 246-4762
EMail: CH@RABSKYGROUP.COM
Fax Number: Not reported
Modified By: DMPOKRZY
Date Last Modified: 2016-07-19

Site Id: 27475
Affiliation Type: Facility Operator
Company Name: 101 VARICK, WASTE MANAGEMENT OF NY, LLC
Contact Type: Not reported
Contact Name: CHARLES KRIEGER
Address1: Not reported
Address2: Not reported
City: Not reported
State: NN
Zip Code: Not reported
Country Code: 001
Phone: (718) 246-4762
EMail: Not reported
Fax Number: Not reported
Modified By: DMPOKRZY
Date Last Modified: 2016-07-19

101 VARICK, WASTE MANAGEMENT OF NY, LLC (Continued) **U003790770**

Site Id:	27475
Affiliation Type:	Emergency Contact
Company Name:	ADAR HOLDINGS
Contact Type:	Not reported
Contact Name:	CHARLES KRIEGER
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	999
Phone:	(718) 246-4762
EMail:	Not reported
Fax Number:	Not reported
Modified By:	DMPOKRZY
Date Last Modified:	2016-07-19

Site Id:	27475
Affiliation Type:	Facility Owner
Company Name:	ADAR HOLDINGS
Contact Type:	MEMBER
Contact Name:	SIMON DUSHINSKY
Address1:	101 VARICK AVENUE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(718) 246-4762
EMail:	Not reported
Fax Number:	Not reported
Modified By:	DMPOKRZY
Date Last Modified:	2016-07-19

Tank Info:

Tank Number:	001
Tank ID:	60108
Tank Status:	Closed - Removed
Material Name:	Closed - Removed
Capacity Gallons:	3000
Install Date:	03/01/1984
Date Tank Closed:	11/27/2015
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Tightness Test Method:	21
Date Test:	08/24/2011
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	JAAVERSA
Last Modified:	04/14/2017

Equipment Records:

101 VARICK, WASTE MANAGEMENT OF NY, LLC (Continued) **U003790770**

C03 - Pipe Location - Aboveground/Underground Combination
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
E00 - Piping Secondary Containment - None
H00 - Tank Leak Detection - None
K01 - Spill Prevention - Catch Basin
L09 - Piping Leak Detection - Exempt Suction Piping
F00 - Pipe External Protection - None
I05 - Overfill - Vent Whistle
D10 - Pipe Type - Copper
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number:	002
Tank ID:	60109
Tank Status:	Closed - Removed
Material Name:	Closed - Removed
Capacity Gallons:	2000
Install Date:	Not reported
Date Tank Closed:	09/14/2000
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0009
Common Name of Substance:	Gasoline
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	NRLOMBAR
Last Modified:	04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
G00 - Tank Secondary Containment - None
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
J00 - Dispenser - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Number:	003
Tank ID:	60110
Tank Status:	Closed - Removed
Material Name:	Closed - Removed
Capacity Gallons:	2000
Install Date:	Not reported
Date Tank Closed:	09/14/2000
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0009
Common Name of Substance:	Gasoline

101 VARICK, WASTE MANAGEMENT OF NY, LLC (Continued) **U003790770**

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: NRLOMBAR
Last Modified: 04/14/2017

Equipment Records:

G00 - Tank Secondary Containment - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
J00 - Dispenser - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Number: UO1
Tank ID: 235837
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 8000
Install Date: Not reported
Date Tank Closed: 05/20/2010
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0001
Common Name of Substance: #2 Fuel Oil (On-Site Consumption)

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: NRLOMBAR
Last Modified: 04/14/2017

Tank Number: UO2
Tank ID: 235838
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 5000
Install Date: Not reported
Date Tank Closed: 08/30/1990
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0001
Common Name of Substance: #2 Fuel Oil (On-Site Consumption)

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: NRLOMBAR

101 VARICK, WASTE MANAGEMENT OF NY, LLC (Continued) **U003790770**

Last Modified:	04/14/2017
Tank Number:	UO3
Tank ID:	235839
Tank Status:	Closed - Removed
Material Name:	Closed - Removed
Capacity Gallons:	3000
Install Date:	Not reported
Date Tank Closed:	08/30/1990
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	NRLOMBAR
Last Modified:	04/14/2017

L76 **JOYVA VACANT LOT** **NY VCP** **S113922066**
ENE **498 JOHNSON AVENUE** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.103 mi.
543 ft. **Site 1 of 3 in cluster L**

Relative: VCP:
Lower

Name:	JOYVA VACANT LOT
Address:	498 JOHNSON AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Program Type:	VCP
Site Code:	56948
HW Code:	V00332
Site Class:	N
SWIS:	2401
Region:	2
Town:	New York City
Acres:	Not reported
Date Record Added:	11/30/2000
Date Record Updated:	07/14/2004
Updated By:	VCPTRANS
Site Description:	The site did not qualify for addition to the Registry of Inactive Hazardous Disposal Sites
Env Problem:	Not reported
Health Problem:	Not reported
Dump:	Not reported
Structure:	Not reported
Lagoon:	Not reported
Landfill:	Not reported
Pond:	Not reported
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	Not reported
Dell:	Not reported
Record Add:	Not reported

Actual:
14 ft.

JOYVA VACANT LOT (Continued) **S113922066**

Record Upd:	Not reported
Updated By:	Not reported
Own Op:	Applicant/Requestor
Sub Type:	ZZZ
Owner Name:	Not reported
Owner Company:	Joyva Corporation
Owner Address:	Not reported
Owner Addr2:	Not reported
Owner City,St,Zip:	ZZ
Owner Country:	United States of America
HW Code:	Not reported
Waste Type:	Not reported
Waste Quantity:	Not reported
Waste Code:	Not reported
Crossref ID:	Not reported
Cross Ref Type Code:	Not reported
Cross Ref Type:	Not reported
Record Added Date:	Not reported
Record Updated:	Not reported
Updated By:	Not reported

G77 **KORNBLUM, SIDNEY** **SEMS-ARCHIVE** **1018149164**
West **394 JOHNSON AVE.** **LEAD SMELTERS** **NYN000206627**
< 1/8 **BROOKLYN, NY 11206**
0.105 mi.
556 ft. **Site 8 of 9 in cluster G**

Relative:
Higher

Actual:
19 ft.

SEMS Archive:

Site ID:	0206627
EPA ID:	NYN000206627
Cong District:	Not reported
FIPS Code:	36047
FF:	N
NPL:	Not on the NPL
Non NPL Status:	Referred to Removal - NFRAP

SEMS Archive Detail:

Region:	02
Site ID:	0206627
EPA ID:	NYN000206627
Site Name:	KORNBLUM, SIDNEY
NPL:	N
FF:	N
OU:	00
Action Code:	RS
Action Name:	RV ASSESS
SEQ:	1
Start Date:	2014-10-30 04:00:00
Finish Date:	2016-11-23 05:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf

Region:	02
Site ID:	0206627
EPA ID:	NYN000206627
Site Name:	KORNBLUM, SIDNEY
NPL:	N
FF:	N

KORNBLUM, SIDNEY (Continued) **1018149164**

OU:	00
Action Code:	SI
Action Name:	SI
SEQ:	1
Start Date:	2014-10-01 04:00:00
Finish Date:	2015-03-31 04:00:00
Qual:	N
Current Action Lead:	EPA Perf
Region:	02
Site ID:	0206627
EPA ID:	NYN000206627
Site Name:	KORNBLUM, SIDNEY
NPL:	N
FF:	N
OU:	00
Action Code:	PA
Action Name:	PA
SEQ:	1
Start Date:	2014-10-16 04:00:00
Finish Date:	2014-10-16 04:00:00
Qual:	H
Current Action Lead:	EPA Perf
Region:	02
Site ID:	0206627
EPA ID:	NYN000206627
Site Name:	KORNBLUM, SIDNEY
NPL:	N
FF:	N
OU:	00
Action Code:	DS
Action Name:	DISCVRY
SEQ:	1
Start Date:	2014-05-16 05:00:00
Finish Date:	2014-05-16 05:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf

Lead Smelter Sites:

Site ID:	206627
Facility Region Id:	2
Latitude:	Not reported
Longitude:	Not reported
CoC Ind:	Not reported
Contaminant Name:	Not reported
FF Ind:	N
NAI:	N
Non-Primary Site-Sub Type:	Not reported
NPL:	Not on the NPL
Primary Site-Sub Type:	Metal fabrication/finishing/coating and allied industries (Manufacturing/Processing/Maintenance)
Special Initiative:	Unrecognized Smelter per 2001 Report

H78 **CON EDISON** **NY MANIFEST** **S117058890**
WSW **23 INGRAHAM ST** **N/A**
< 1/8 **BROOKLYN, NY 11206**
0.110 mi.
583 ft. **Site 6 of 7 in cluster H**

Relative:
Higher

Actual:
20 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004510293
Facility Status:	Not reported
Location Address 1:	23 INGRAHAM ST
Code:	BP
Location Address 2:	SB8606
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11206
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004510293
Mailing Name:	CON EDISON
Mailing Contact:	CON EDISON
Mailing Address 1:	4 IRVING PL
Mailing Address 2:	15TH ST
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	04/24/2014
Trans1 Recv Date:	04/24/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	04/24/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004510293
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002407581GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported

CON EDISON (Continued) **S117058890**

Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	50
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

H79 **CON EDISON SERVICE BOX: 8606** **RCRA NonGen / NLR** **1017773249**
WSW **23 INGRAHAM ST** **NYP004510293**
< 1/8 **BROOKLYN, NY 11206**
0.110 mi.
583 ft. **Site 7 of 7 in cluster H**

Relative: **Higher**

Actual: **20 ft.**

RCRA NonGen / NLR:

Date form received by agency:	05/24/2014
Facility name:	CON EDISON SERVICE BOX: 8606
Facility address:	23 INGRAHAM ST BROOKLYN, NY 11206
EPA ID:	NYP004510293
Mailing address:	IRVING PL, 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	212-460-3770
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No

CON EDISON SERVICE BOX: 8606 (Continued) **1017773249**

On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 04/24/2014
Site name: CON EDISON
Classification: Small Quantity Generator

Date form received by agency: 04/24/2014
Site name: CON EDISON
Classification: Not a generator, verified

Violation Status: No violations found

G80 **388 JOHNSON AVE.** **NY Spills** **S102143360**
West **388 JOHNSON AVE** **N/A**
< 1/8 **BROOKLYN, NY**
0.112 mi.
593 ft. **Site 9 of 9 in cluster G**

Relative: **Lower**

Actual: **18 ft.**

SPILLS:
Name: 388 JOHNSON AVE.
Address: 388 JOHNSON AVE
City,State,Zip: BROOKLYN, NY
Spill Number/Closed Date: 9208256 / 2010-02-05
Facility ID: 9208256
Facility Type: ER
DER Facility ID: 85978
Site ID: 96172
DEC Region: 2
Spill Cause: Equipment Failure
Spill Class: C5
SWIS: 2401
Spill Date: 1992-09-16
Investigator: RWAUSTIN
Referred To: Not reported
Reported to Dept: 1992-10-16
CID: Not reported
Water Affected: Not reported
Spill Source: Commercial/Industrial
Spill Notifier: Citizen
Cleanup Ceased: Not reported
Cleanup Meets Std: False
Last Inspection: Not reported
Recommended Penalty: False
UST Trust: False
Remediation Phase: 0
Date Entered In Computer: 1992-10-20
Spill Record Last Update: 2010-02-05
Spiller Name: Not reported
Spiller Company: Not reported

388 JOHNSON AVE. (Continued) **S102143360**

Spiller Address: Not reported
Spiller Company: 001
Contact Name: Not reported
DEC Memo: "Prior to Sept, 2004 data translation this spill Lead_DEC Field was MILLER 10/10/95: This is additional information about material spilled from the translation of the old spill file: CONTAMINATED SOIL. Austin - 2/5/10 - Unsubstanciated surface spill report from 18 years ago. Closed - End"
Remarks: "THIS BUISNESS HAS BEEN SPILLING OIL AND ALLOWING OIL LEAK FROM THEIR TRUCKS ONTO SOIL AREAS FOR A LONG TIME AT TWO LOCATIONS-NO CLEAN-UP INITIATED."

All Materials:
Site ID: 96172
Operable Unit ID: 971895
Operable Unit: 01
Material ID: 408849
Material Code: 0008
Material Name: diesel
Case No.: Not reported
Material FA: Petroleum
Quantity: -1.00
Units: Not reported
Recovered: .00
Oxygenate: Not reported

I81 **CON EDISON SERVICE BOX: 72632** **RCRA NonGen / NLR** **1017776303**
South **60 GRATTAN ST** **NYP004541587**
< 1/8 **BROOKLYN, NY 11237**
0.114 mi.
602 ft. **Site 3 of 4 in cluster I**

Relative:
Higher

Actual:
25 ft.

RCRA NonGen / NLR:
Date form received by agency: 06/23/2014
Facility name: CON EDISON SERVICE BOX: 72632
Facility address: 60 GRATTAN ST
BROOKLYN, NY 11237
EPA ID: NYP004541587
Mailing address: IRVING PL, 15TH FL NE
NEW YORK, NY 10003
Contact: THOMAS TEELING
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: 212-460-3770
Contact email: Not reported
EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No

CON EDISON SERVICE BOX: 72632 (Continued) **1017776303**

On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 05/23/2014
Site name: CON EDISON
Classification: Small Quantity Generator

Date form received by agency: 05/23/2014
Site name: CON EDISON
Classification: Not a generator, verified

Violation Status: No violations found

I82 **CON EDISON** **NY MANIFEST** **S117061836**
South **60 GRATTAN ST** **N/A**
< 1/8 **BROOKLYN, NY 11201**
0.114 mi.
602 ft. **Site 4 of 4 in cluster I**

Relative:
Higher

Actual:
25 ft.

NY MANIFEST:
Country: USA
EPA ID: NYP004653630
Facility Status: Not reported
Location Address 1: 60 GRATTAN ST
Code: BP
Location Address 2: SB72632
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: 11201
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYP004653630
Mailing Name: CON EDISON
Mailing Contact: CON EDISON
Mailing Address 1: 4 IRVING PL
Mailing Address 2: 15TH FL
Mailing City: NEW YORK
Mailing State: NY
Mailing Zip: 10003
Mailing Zip 4: Not reported
Mailing Country: USA
Mailing Phone: Not reported

NY MANIFEST:
Document ID: Not reported
Manifest Status: Not reported
seq: Not reported
Year: 2014

CON EDISON (Continued) **S117061836**

Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	09/10/2014
Trans1 Recv Date:	09/10/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	09/15/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004653630
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002617193GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	100
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Country:	USA
EPA ID:	NYP004541587
Facility Status:	Not reported
Location Address 1:	60 GRATTAN ST
Code:	BP
Location Address 2:	SB 72632
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

CON EDISON (Continued) **S117061836**

NY MANIFEST:

EPAID:	NYP004541587
Mailing Name:	CON EDISON
Mailing Contact:	TOM TEELING
Mailing Address 1:	4 IRVING PLACE 15TH FLOOR
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	05/23/2014
Trans1 Recv Date:	05/23/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	05/23/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004541587
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002423683GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	50
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008

CON EDISON (Continued) **S117061836**

Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

M83 **132 HARRISON PLACE** **NY UST** **U003418601**
ESE **132 HARRISON PLACE** **NY AST** **N/A**
< 1/8 **BROOKLYN, NY 11237**
0.116 mi.
613 ft. **Site 1 of 5 in cluster M**

Relative:
Higher

Actual:
20 ft.

UST:

Name:	132 HARRISON PLACE
Address:	132 HARRISON PLACE
City,State,Zip:	BROOKLYN, NY 11237
Id/Status:	2-603715 / Unregulated/Closed
Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	N/A
UTM X:	590590.00239
UTM Y:	4506743.35985
Site Type:	Manufacturing (Other than Chemical)/Processing

Affiliation Records:

Site Id:	25619
Affiliation Type:	Facility Owner
Company Name:	GREENPOINT MFG & DESIGN CENTER
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	1155-1205 MANHATTAN AVENUE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11222
Country Code:	001
Phone:	(718) 383-3935
EMail:	Not reported
Fax Number:	Not reported
Modified By:	NRLOMBAR
Date Last Modified:	2007-07-02

Site Id:	25619
Affiliation Type:	Mail Contact
Company Name:	GREENPOINT MFG & DESIGN CENTER
Contact Type:	Not reported
Contact Name:	MICHAEL LYPEN
Address1:	1155 MANHATTAN AVENUE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11222
Country Code:	001

132 HARRISON PLACE (Continued) **U003418601**

Phone:	(718) 383-3935
EMail:	Not reported
Fax Number:	Not reported
Modified By:	NRLOMBAR
Date Last Modified:	2007-07-02

Site Id:	25619
Affiliation Type:	Facility Operator
Company Name:	132 HARRISON PLACE
Contact Type:	Not reported
Contact Name:	GLEN HO
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 628-8672
EMail:	Not reported
Fax Number:	Not reported
Modified By:	NRLOMBAR
Date Last Modified:	2007-07-02

Site Id:	25619
Affiliation Type:	Emergency Contact
Company Name:	GREENPOINT MFG & DESIGN CENTER
Contact Type:	Not reported
Contact Name:	MICHAEL LYPEN
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	999
Phone:	(718) 383-3935
EMail:	Not reported
Fax Number:	Not reported
Modified By:	NRLOMBAR
Date Last Modified:	2007-07-02

Tank Info:

Tank Number:	001
Tank ID:	55384
Tank Status:	Closed - In Place
Material Name:	Closed - In Place
Capacity Gallons:	1500
Install Date:	Not reported
Date Tank Closed:	06/01/2000
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Tightness Test Method:	NN
Date Test:	Not reported

132 HARRISON PLACE (Continued) **U003418601**

Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	NRLOMBAR
Last Modified:	04/14/2017

Equipment Records:

B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
E00 - Piping Secondary Containment - None
H00 - Tank Leak Detection - None
D00 - Pipe Type - No Piping
L00 - Piping Leak Detection - None
A00 - Tank Internal Protection - None
K00 - Spill Prevention - None
I05 - Overfill - Vent Whistle

AST:

Name:	132 HARRISON PLACE
Address:	132 HARRISON PLACE
City,State,Zip:	BROOKLYN, NY 11237
Region:	STATE
DEC Region:	2
Site Status:	Unregulated/Closed
Facility Id:	2-603715
Program Type:	PBS
UTM X:	590590.00239
UTM Y:	4506743.35985
Expiration Date:	N/A
Site Type:	Manufacturing (Other than Chemical)/Processing

Affiliation Records:

Site Id:	25619
Affiliation Type:	Facility Owner
Company Name:	GREENPOINT MFG & DESIGN CENTER
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	1155-1205 MANHATTAN AVENUE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11222
Country Code:	001
Phone:	(718) 383-3935
EMail:	Not reported
Fax Number:	Not reported
Modified By:	NRLOMBAR
Date Last Modified:	2007-07-02

Site Id:	25619
Affiliation Type:	Mail Contact
Company Name:	GREENPOINT MFG & DESIGN CENTER
Contact Type:	Not reported
Contact Name:	MICHAEL LYPEN
Address1:	1155 MANHATTAN AVENUE
Address2:	Not reported

132 HARRISON PLACE (Continued) **U003418601**

City:	BROOKLYN
State:	NY
Zip Code:	11222
Country Code:	001
Phone:	(718) 383-3935
EMail:	Not reported
Fax Number:	Not reported
Modified By:	NRLOMBAR
Date Last Modified:	2007-07-02

Site Id:	25619
Affiliation Type:	Facility Operator
Company Name:	132 HARRISON PLACE
Contact Type:	Not reported
Contact Name:	GLEN HO
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 628-8672
EMail:	Not reported
Fax Number:	Not reported
Modified By:	NRLOMBAR
Date Last Modified:	2007-07-02

Site Id:	25619
Affiliation Type:	Emergency Contact
Company Name:	GREENPOINT MFG & DESIGN CENTER
Contact Type:	Not reported
Contact Name:	MICHAEL LYPEN
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	999
Phone:	(718) 383-3935
EMail:	Not reported
Fax Number:	Not reported
Modified By:	NRLOMBAR
Date Last Modified:	2007-07-02

Tank Info:

Tank Number:	002
Tank Id:	55385
Material Code:	2642
Common Name of Substance:	Used Oil (Heating, On-Site Consumption)

Equipment Records:

I05 - Overfill - Vent Whistle
G03 - Tank Secondary Containment - Vault (w/o access)
H00 - Tank Leak Detection - None
J02 - Dispenser - Suction Dispenser

132 HARRISON PLACE (Continued) **U003418601**

F00 - Pipe External Protection - None
C01 - Pipe Location - Aboveground
B01 - Tank External Protection - Painted/Asphalt Coating
D01 - Pipe Type - Steel/Carbon Steel/Iron
A00 - Tank Internal Protection - None

Tank Location:	Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Closed - Removed
Pipe Model:	Not reported
Install Date:	Not reported
Capacity Gallons:	5000
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	Not reported
Register:	True
Modified By:	TRANSLAT
Last Modified:	04/14/2017
Material Name:	used oil (heating, on-site consumption)

J84 **MOOTCH & MUCK DIST.** **NY Spills** **S102401937**
NW **134 MORGAN AVE** **N/A**
< 1/8 **BROOKLYN, NY**
0.119 mi.
628 ft. **Site 5 of 8 in cluster J**

Relative: **Lower**
Actual: **13 ft.**

SPILLS:

Name:	MOOTCH & MUCK DIST.
Address:	134 MORGAN AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9606468 / 1996-08-20
Facility ID:	9606468
Facility Type:	ER
DER Facility ID:	175838
Site ID:	212184
DEC Region:	2
Spill Cause:	Deliberate
Spill Class:	D5
SWIS:	2401
Spill Date:	1996-08-20
Investigator:	SMMARTIN
Referred To:	Not reported
Reported to Dept:	1996-08-20
CID:	Not reported
Water Affected:	ENGLISH KILLS
Spill Source:	Commercial/Industrial
Spill Notifier:	Citizen
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	1996-08-20
Spill Record Last Update:	1996-09-23
Spiller Name:	FRED SIPPER
Spiller Company:	MOOTCH & MUCK DIST.

MOOTCH & MUCK DIST. (Continued) **S102401937**

Spiller Address:	134 MORGAN AV
Spiller Company:	001
Contact Name:	FRED SIPPER
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was MARTINKAT "
Remarks:	"THERE IS A PVC PIPE RUNNING FROM BACK OF BUILDING INTO CREEK -DUMPING ALL OUTDATED BEVERAGES INTO CREEK - OTHER MATERIALS ARE FRUIT JUCIES AND SODAS"

All Materials:

Site ID:	212184
Operable Unit ID:	1037450
Operable Unit:	01
Material ID:	345728
Material Code:	0457A
Material Name:	beer
Case No.:	Not reported
Material FA:	Other
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

J85 **140 MORGAN AVE. WHSE. (GORDON)** **NY UST** **U004045011**
NW **140 MORGAN AVENUE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.125 mi.
661 ft. **Site 6 of 8 in cluster J**

Relative: **Lower**

Actual: **13 ft.**

UST:

Name:	140 MORGAN AVE. WHSE. (GORDON)
Address:	140 MORGAN AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Id/Status:	2-608398 / Active
Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	03/02/2022
UTM X:	590168.87700
UTM Y:	4506948.02525
Site Type:	Apartment Building/Office Building

Affiliation Records:

Site Id:	30250
Affiliation Type:	Mail Contact
Company Name:	MILLSTONE MANAGEMENT, LLC
Contact Type:	Not reported
Contact Name:	FRED J. CARILLO
Address1:	25 SOUTH SERVICE ROAD
Address2:	SUITE #320
City:	JERICHO
State:	NY
Zip Code:	11753
Country Code:	001
Phone:	(516) 997-4100
EMail:	INFO@CARCOCORP.COM
Fax Number:	Not reported
Modified By:	MFLEONAR

140 MORGAN AVE. WHSE. (GORDON) (Continued) **U004045011**

Date Last Modified: 2018-01-29

Site Id: 30250
Affiliation Type: Facility Operator
Company Name: 140 MORGAN AVE. WHSE. (GORDON)
Contact Type: Not reported
Contact Name: AR NEW YORK CORP
Address1: Not reported
Address2: Not reported
City: Not reported
State: NN
Zip Code: Not reported
Country Code: 001
Phone: (718) 821-8861
EMail: Not reported
Fax Number: Not reported
Modified By: MSBAPTIS
Date Last Modified: 2013-03-11

Site Id: 30250
Affiliation Type: Emergency Contact
Company Name: MILLSTONE MANAGEMENT, LLC
Contact Type: Not reported
Contact Name: PHENG, AR NEW YORK CORP
Address1: Not reported
Address2: Not reported
City: Not reported
State: NN
Zip Code: Not reported
Country Code: 999
Phone: (718) 821-8861
EMail: Not reported
Fax Number: Not reported
Modified By: MFLEONAR
Date Last Modified: 2018-01-29

Site Id: 30250
Affiliation Type: Facility Owner
Company Name: MILLSTONE MANAGEMENT, LLC
Contact Type: MEMBER
Contact Name: FRED J. CARILLO
Address1: 25 SOUTH SERVICE ROAD, SUITE #320
Address2: Not reported
City: JERICHO
State: NY
Zip Code: 11753
Country Code: 001
Phone: (516) 997-4100
EMail: Not reported
Fax Number: Not reported
Modified By: MFLEONAR
Date Last Modified: 2018-01-29

Tank Info:

Tank Number: 001
Tank ID: 65122

140 MORGAN AVE. WHSE. (GORDON) (Continued) **U004045011**

Tank Status:	In Service
Material Name:	In Service
Capacity Gallons:	10000
Install Date:	01/01/1963
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)
Tightness Test Method:	21
Date Test:	10/05/2017
Next Test Date:	10/05/2018
Pipe Model:	Not reported
Modified By:	MFLEONAR
Last Modified:	02/01/2018

Equipment Records:

D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
A01 - Tank Internal Protection - Epoxy Liner
E00 - Piping Secondary Containment - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
L09 - Piping Leak Detection - Exempt Suction Piping
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
B01 - Tank External Protection - Painted/Asphalt Coating
K00 - Spill Prevention - None

J86 **140 MORGAN AVE/BROOKLYN** **NY LTANKS S102145602**
NW **140 MORGAN AVENUE** **NY Spills N/A**
1/8-1/4 **BROOKLYN, NY**
0.125 mi.
661 ft. **Site 7 of 8 in cluster J**

Relative: **Lower**

Actual: **13 ft.**

LTANKS:

Name:	140 MORGAN AVE/BROOKLYN
Address:	140 MORGAN AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	8910515 / 1990-02-03
Facility ID:	8910515
Site ID:	113471
Spill Date:	1990-01-30
Spill Cause:	Tank Overfill
Spill Source:	Private Dwelling
Spill Class:	Not reported
Cleanup Ceased:	1990-02-03
SWIS:	2401
Investigator:	TOMASELLO
Referred To:	Not reported
Reported to Dept:	1990-02-02
CID:	Not reported
Water Affected:	Not reported
Spill Notifier:	Responsible Party
Last Inspection:	Not reported

140 MORGAN AVE/BROOKLYN (Continued) **S102145602**

Recommended Penalty:	False
Meets Standard:	True
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	1990-02-07
Spill Record Last Update:	2003-04-09
Spiller Name:	Not reported
Spiller Company:	PETRO HEAT & POWER
Spiller Address:	Not reported
Spiller County:	001
Spiller Contact:	Not reported
Spiller Phone:	Not reported
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	99025
DEC Memo:	""
Remarks:	"CUSTOMER OVER ORDERED & FUEL GAUGE WAS BROKEN, CLEANED UP BY PETRO HEAT & POWER SPILL TEAM."

All Materials:

Site ID:	113471
Operable Unit ID:	937444
Operable Unit:	01
Material ID:	443617
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	3.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

SPILLS:

Name:	GORDON INTERNATIONAL/BKLN
Address:	140 MORGAN AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	8909334 / 1989-12-26
Facility ID:	8909334
Facility Type:	ER
DER Facility ID:	99025
Site ID:	169713
DEC Region:	2
Spill Cause:	Unknown
Spill Class:	Not reported
SWIS:	2401
Spill Date:	1989-12-23
Investigator:	TAYLOR
Referred To:	Not reported
Reported to Dept:	1989-12-26
CID:	Not reported
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Other
Cleanup Ceased:	1989-12-26
Cleanup Meets Std:	True

140 MORGAN AVE/BROOKLYN (Continued) **S102145602**

Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	1990-01-03
Spill Record Last Update:	1990-02-14
Spiller Name:	Not reported
Spiller Company:	UNK
Spiller Address:	Not reported
Spiller Company:	001
Contact Name:	Not reported
DEC Memo:	""
Remarks:	"SATURDAY ROUTINE DELIVERY MADE - CUSTOMER REPORTED SPILL ON ASPHALT. PETRO TEAM RESPONDED - TYREE BROS CALLED TO CLEAN"

All Materials:

Site ID:	169713
Operable Unit ID:	934266
Operable Unit:	01
Material ID:	442499
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	25.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

N87 **CON EDISON SERVICE BOX: 72404** **RCRA NonGen / NLR** **1017776540**
SE **36 PORTER AVE** **NYP004544003**
1/8-1/4 **BROOKLYN, NY 11237**
0.126 mi.
663 ft. **Site 1 of 16 in cluster N**

Relative:
Higher

Actual:
23 ft.

RCRA NonGen / NLR:

Date form received by agency:	06/27/2014
Facility name:	CON EDISON SERVICE BOX: 72404
Facility address:	36 PORTER AVE BROOKLYN, NY 11237
EPA ID:	NYP004544003
Mailing address:	IRVING PL, 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	212-460-3770
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No

CON EDISON SERVICE BOX: 72404 (Continued) **1017776540**

Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	05/27/2014
Site name:	CON EDISON
Classification:	Small Quantity Generator

Date form received by agency:	05/27/2014
Site name:	CON EDISON
Classification:	Not a generator, verified

Violation Status: No violations found

N88 **CON EDISON** **NY MANIFEST** **S116551583**
SE **36 PORTER AV** **N/A**
1/8-1/4 **BROOKLYN, NY 11201**
0.126 mi.
663 ft. **Site 2 of 16 in cluster N**

Relative:
Higher

Actual:
23 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004500989
Facility Status:	Not reported
Location Address 1:	36 PORTER AV
Code:	BP
Location Address 2:	SB72404
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11201
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004500989
Mailing Name:	CON EDISON
Mailing Contact:	CON EDISON
Mailing Address 1:	4 IRIVING PL
Mailing Address 2:	15TH FL
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported

CON EDISON (Continued) **S116551583**

Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJ0000027193
Trans2 State ID:	Not reported
Generator Ship Date:	04/15/2014
Trans1 Recv Date:	04/15/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	04/19/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004500989
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD002200046
TSDF ID 2:	Not reported
Manifest Tracking Number:	011694027JJK
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	100
Units:	P - Pounds
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Country:	USA
EPA ID:	NYP004544003
Facility Status:	Not reported
Location Address 1:	36 PORTER AVE
Code:	BP
Location Address 2:	SB 72404
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY

CON EDISON (Continued) **S116551583**

Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004544003
Mailing Name:	CON EDISON
Mailing Contact:	TOM TEELING
Mailing Address 1:	4 IRVING PLACE 15TH FLOOR
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	05/27/2014
Trans1 Recv Date:	05/27/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	05/29/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004544003
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002423158GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	80
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.

CON EDISON (Continued) **S116551583**

Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

O89 **SUPERIOR HOLDING LLC** **NY UST** **U004079711**
West **375 JOHNSON AVE** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.130 mi.
686 ft. **Site 1 of 3 in cluster O**

Relative:
Lower

Actual:
17 ft.

UST:

Name:	SUPERIOR HOLDING LLC
Address:	375 JOHNSON AVE
City,State,Zip:	BROOKLYN, NY 11206
Id/Status:	2-607340 / Unregulated/Closed
Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	N/A
UTM X:	590063.24283
UTM Y:	4506838.41133
Site Type:	Other

Affiliation Records:

Site Id:	29193
Affiliation Type:	Facility Owner
Company Name:	SUPERIOR HOLDING LLC
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	375 JHONSON AVE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11206
Country Code:	001
Phone:	(718) 417-4436
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	29193
Affiliation Type:	Mail Contact
Company Name:	SUPERIOR HOLDING LLC
Contact Type:	Not reported
Contact Name:	MR. ARNOLD ROTH
Address1:	375 JHONSON AVE
Address2:	Not reported
City:	BROOKLYN
State:	NY

SUPERIOR HOLDING LLC (Continued) **U004079711**

Zip Code:	11206
Country Code:	001
Phone:	(718) 417-4436
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	29193
Affiliation Type:	Facility Operator
Company Name:	SUPERIOR HOLDING LLC
Contact Type:	Not reported
Contact Name:	JAKE ROTH
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 417-4436
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	29193
Affiliation Type:	Emergency Contact
Company Name:	SUPERIOR HOLDING LLC
Contact Type:	Not reported
Contact Name:	JAKE ROTH
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 417-4436
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	05
Tank ID:	62765
Tank Status:	Closed - Removed
Material Name:	Closed - Removed
Capacity Gallons:	550
Install Date:	Not reported
Date Tank Closed:	02/01/2002
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0008
Common Name of Substance:	Diesel

SUPERIOR HOLDING LLC (Continued) **U004079711**

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
J00 - Dispenser - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number: 06
Tank ID: 62766
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: 02/01/2002
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0008
Common Name of Substance: Diesel

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

J00 - Dispenser - None
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number: 07
Tank ID: 62767
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: 02/01/2002

SUPERIOR HOLDING LLC (Continued) **U004079711**

Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0009
Common Name of Substance:	Gasoline
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
J00 - Dispenser - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number:	08
Tank ID:	62768
Tank Status:	Closed - In Place
Material Name:	Closed - In Place
Capacity Gallons:	20000
Install Date:	Not reported
Date Tank Closed:	01/01/2002
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0003
Common Name of Substance:	#6 Fuel Oil (On-Site Consumption)
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

F00 - Pipe External Protection - None
C03 - Pipe Location - Aboveground/Underground Combination
G00 - Tank Secondary Containment - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
J00 - Dispenser - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
D01 - Pipe Type - Steel/Carbon Steel/Iron

O90 **SUPERIOR HOLDING LLC** **NY AST** **A100296213**
West **375 JOHNSON AVE** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.130 mi.
686 ft. **Site 2 of 3 in cluster O**

Relative:
Lower

Actual:
17 ft.

AST:

Name:	SUPERIOR HOLDING LLC
Address:	375 JOHNSON AVE
City,State,Zip:	BROOKLYN, NY 11206
Region:	STATE
DEC Region:	2
Site Status:	Unregulated/Closed
Facility Id:	2-607340
Program Type:	PBS
UTM X:	590063.24283
UTM Y:	4506838.41133
Expiration Date:	N/A
Site Type:	Other

Affiliation Records:

Site Id:	29193
Affiliation Type:	Facility Owner
Company Name:	SUPERIOR HOLDING LLC
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	375 JHONSON AVE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11206
Country Code:	001
Phone:	(718) 417-4436
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	29193
Affiliation Type:	Mail Contact
Company Name:	SUPERIOR HOLDING LLC
Contact Type:	Not reported
Contact Name:	MR. ARNOLD ROTH
Address1:	375 JHONSON AVE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11206
Country Code:	001
Phone:	(718) 417-4436
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	29193
Affiliation Type:	Facility Operator
Company Name:	SUPERIOR HOLDING LLC
Contact Type:	Not reported
Contact Name:	JAKE ROTH

SUPERIOR HOLDING LLC (Continued) **A100296213**

Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 417-4436
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	29193
Affiliation Type:	Emergency Contact
Company Name:	SUPERIOR HOLDING LLC
Contact Type:	Not reported
Contact Name:	JAKE ROTH
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 417-4436
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	01
Tank Id:	62761
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Equipment Records:

	G00 - Tank Secondary Containment - None
	H00 - Tank Leak Detection - None
	I00 - Overfill - None
	F00 - Pipe External Protection - None
	A00 - Tank Internal Protection - None
	B01 - Tank External Protection - Painted/Asphalt Coating
	D01 - Pipe Type - Steel/Carbon Steel/Iron
	C01 - Pipe Location - Aboveground
	J00 - Dispenser - None
Tank Location:	Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	In Service
Pipe Model:	Not reported
Install Date:	02/01/2002
Capacity Gallons:	275
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported

SUPERIOR HOLDING LLC (Continued) **A100296213**

Date Tank Closed:	Not reported
Register:	True
Modified By:	TRANSLAT
Last Modified:	04/14/2017
Material Name:	#2 fuel oil (on-site consumption)
Tank Number:	02
Tank Id:	62762
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
G00 - Tank Secondary Containment - None
F00 - Pipe External Protection - None
J00 - Dispenser - None
C01 - Pipe Location - Aboveground
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Location:	Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	In Service
Pipe Model:	Not reported
Install Date:	02/01/2002
Capacity Gallons:	275
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	Not reported
Register:	True
Modified By:	TRANSLAT
Last Modified:	04/14/2017
Material Name:	#2 fuel oil (on-site consumption)
Tank Number:	03
Tank Id:	62763
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Equipment Records:

A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
D01 - Pipe Type - Steel/Carbon Steel/Iron
F00 - Pipe External Protection - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
G00 - Tank Secondary Containment - None
C01 - Pipe Location - Aboveground
J00 - Dispenser - None

Tank Location:	Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.

SUPERIOR HOLDING LLC (Continued) **A100296213**

Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	In Service
Pipe Model:	Not reported
Install Date:	02/01/2002
Capacity Gallons:	275
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	Not reported
Register:	True
Modified By:	TRANSLAT
Last Modified:	04/14/2017
Material Name:	#2 fuel oil (on-site consumption)

Tank Number:	04
Tank Id:	62764
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
F00 - Pipe External Protection - None
C01 - Pipe Location - Aboveground
J00 - Dispenser - None
G00 - Tank Secondary Containment - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Location:	Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	In Service
Pipe Model:	Not reported
Install Date:	02/01/2002
Capacity Gallons:	275
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	Not reported
Register:	True
Modified By:	TRANSLAT
Last Modified:	04/14/2017
Material Name:	#2 fuel oil (on-site consumption)

J91 **MORGAN TERMINAL** **NY HSWDS** **S108146606**
WNW **200 MORGAN AVE** **N/A**
1/8-1/4 **NEW YORK, NY**
0.130 mi.
687 ft. **Site 8 of 8 in cluster J**

Relative: **Lower**

Actual: **15 ft.**

HSWDS:

Facility ID:	Not reported
Region:	2
Facility Status:	Unknown
Owner Type:	Puplic

MORGAN TERMINAL (Continued) **S108146606**

Owner:	Morgan Oil Corporation
Owner Address:	c/o Shatzkin&F 99 Wall St
Owner Phone:	Unknown
Operator Type:	Puplic
Operator:	N/A
Operator:	N/A
Operator Phone:	Not reported
EPA ID:	Not reported
Registry:	Unknown
Registry Site ID:	Unknown
RCRA Permitted:	Unknown
Site Code:	Leaking tanks, drums, lagoons, other containers
Owner City State:	New York, NY
Operator City State:	Not reported
Quadrange:	Brooklyn Quadrangle
Latitude:	40 42 30 N
Longitude:	73 56 00 W
Acres:	0.00
Operator Date:	> 40 yrs
Close Date:	Unknown
Completed:	Unknown
Active:	No
PCB's Disposed:	No
Pesticides Disposed:	No
Metals Disposed:	Yes
Asbestos Disposed:	Yes
Volatile Organic Compounds Disposed:	No
Semi Volatile Organic Compounds Disposed:	No
Analytical Info Exists for Air:	Not reported
Analytical Info Exists for Ground:	Groundwater
Analytical Info Exists for Surface:	Not reported
Analytical Info Exists for Sediments:	Not reported
Analytical Info Exists for Surface:	Surface Soil
Analytical Info Exists for Substance:	Subsurface
Analytical Info Exists for Waste:	Not reported
Analytical Info Exists for Leachate:	Not reported
Analytical Info Exists for EP Toxicity:	Not reported
Analytical Info Exists for TCLP:	TCLP
Threat to Environment/Public Health:	Environmental
Surface Water Contamination:	Yes
Surface Water Body Class:	SD
Groundwater Contamination:	Yes
Groundwater Classification:	SoleSource
Drinking Water Contamination:	No
Drinking Water Supply is Active:	Unknown
Any Known Fish or Wildlife:	Unknown
Hazardous Exposure:	No
Site Has Controlled Acess:	No
Ambient Air Contamination:	No
Direct Contact:	No
EPA Hazardous Ranking System Score:	Not reported
Inventory:	F
Nefrap:	Not reported
Mailing:	Not reported
Tax Map No:	Not reported
Qualify:	0
Next Action:	Not reported

MORGAN TERMINAL (Continued) **S108146606**

Agencies:	Not reported
Air:	Not reported
Building:	Not reported
Site Desc:	Not reported
Drink:	Not reported
Eptox:	Not reported
Fish:	Not reported
Ground:	Not reported
Ground Desc:	Not reported
Hazardous Threat:	Not reported
Haz Threat Desc:	Not reported
Leachate:	Not reported
Preparer:	Not reported
Sediment:	Not reported
Soil:	Not reported
Surface:	Not reported
Status:	Not reported
Surface Soil:	Not reported
Surface:	Not reported
TCLP:	Not reported
Waste:	Not reported

P92 **FORMER JAYER PLATING** **NY HSWDS** **S104495031**
WSW **2 INGRAHAM STREET** **N/A**
1/8-1/4 **EAST WILLIAMSBURG, NY 11206**
0.137 mi.
722 ft. **Site 1 of 3 in cluster P**

Relative: **Higher**

Actual: **20 ft.**

HSWDS:

Facility ID:	HS2044
Region:	2
Facility Status:	None
Owner Type:	Puplic
Owner:	Millhan Realty Co./Carl Savryn
Owner Address:	Not reported
Owner Phone:	(212)972-8600
Operator Type:	Puplic
Operator:	Jayer Plating
Operator:	Jayer Plating
Operator Phone:	Not reported
EPA ID:	Not reported
Registry:	Not on NYS Registry of Inactive Haz Waste Disposal Sites
Registry Site ID:	Not reported
RCRA Permitted:	No
Site Code:	Industrial Site
Owner City State:	Not reported
Operator City State:	Not reported
Quadrange:	Brooklyn
Latitude:	40 42 22 N
Longitude:	73 56 30 W
Acres:	1.80
Operator Date:	1946
Close Date:	1990
Completed:	PRP Phase2
Active:	No
PCB's Disposed:	No
Pesticides Disposed:	No
Metals Disposed:	Yes

FORMER JAYER PLATING (Continued) **S104495031**

Asbestos Disposed:	Unknown
Volatile Organic Compounds Disposed:	No
Semi Volatile Organic Compounds Disposed:	No
Analytical Info Exists for Air:	Not reported
Analytical Info Exists for Ground:	Groundwater
Analytical Info Exists for Surface:	Not reported
Analytical Info Exists for Sediments:	Not reported
Analytical Info Exists for Surface:	Not reported
Analytical Info Exists for Substance:	Subsurface
Analytical Info Exists for Waste:	Not reported
Analytical Info Exists for Leachate:	Not reported
Analytical Info Exists for EP Toxicity:	Not reported
Analytical Info Exists for TCLP:	TCLP
Threat to Environment/Public Health:	Environmental
Surface Water Contamination:	Unknown
Surface Water Body Class:	SD
Groundwater Contamination:	Yes
Groundwater Classification:	Sole Sourc
Drinking Water Contamination:	No
Drinking Water Supply is Active:	Yes
Any Known Fish or Wildlife:	No
Hazardous Exposure:	Unknown
Site Has Controlled Acess:	Yes
Ambient Air Contamination:	No
Direct Contact:	Unknown
EPA Hazardous Ranking System Score:	N/A
Inventory:	Not reported
Nefrap:	Not reported
Mailing:	Not reported
Tax Map No:	Not reported
Qualify:	Not reported
Next Action:	Not reported
Agencies:	Not reported
Air:	Not reported
Building:	Not reported
Site Desc:	Not reported
Drink:	Not reported
Eptox:	Not reported
Fish:	Not reported
Ground:	Not reported
Ground Desc:	Not reported
Hazardous Threat:	Not reported
Haz Threat Desc:	Not reported
Leachate:	Not reported
Preparer:	Not reported
Sediment:	Not reported
Soil:	Not reported
Surface:	Not reported
Status:	Not reported
Surface Soil:	Not reported
Surface:	Not reported
TCLP:	Not reported
Waste:	Not reported

P93 **2 INGRAHAM STREET - OFF-SITE** **NY SHWS** **S110487597**
WSW **2 INGRAHAM ST** **NY VCP** **N/A**
1/8-1/4 **EAST WILLIAMSBURG, NY 11206** **NY BROWNFIELDS**
0.137 mi.
722 ft. **Site 2 of 3 in cluster P**

Relative:
Higher

Actual:
20 ft.

SHWS:
Name: FORMER JAYER PLATING
Address: 2 INGRAHAM ST
City,State,Zip: EAST WILLIAMSBURG, NY 11206
Program: HW
Site Code: 57074
Classification: N
Region: 2
Acres: 0.5
HW Code: 224036
Record Add: 02/21/2002
Record Upd: 02/28/2018
Updated By: JEBROWN
Site Description: Site being handled under BCP - C224036 Location: The Former Jayer Plating site is located at 2 Ingraham Street in the East Williamsburg Area of Brooklyn, New York. Site Features: The site is a 0.5 acre warehouse and is bordered on the south by Harrison Place, on the north by Ingraham Street, on the west by Bogart Street, and on the east by Morgan Avenue. The site is affected by an easement for the New York City Water Tunnel No. 3. Current Zoning and Land Use: The current zoning of the property is M1-2 (light manufacturing), and it is currently vacant. The surrounding land use is mainly manufacturing (M-1 and M-2) with residential (R-6) farther east and west of the site. The businesses in the immediate area include warehouses, auto scrap yards, masonry materials sales, waste management and trucking. The neighborhood surrounding the site includes some residential units interspersed with commercial properties. A New York City Transit Authority subway line is located beneath Harrison Place, and there are rail yards nearby which are connected to the Long Island Railroad Bushwick Branch. Past Use of the Site: Prior 1946 the Site was used as an orphanage. In 1948, the site was occupied by an umbrella manufacturing plant and a metal plating company between 1946 and early 1990's. After the 1990's, the site has been used as a warehouse without major changes. The site structure has been unoccupied since April 2016. Site Geology and Hydrogeology: The site is underlain by 0 to 8 feet of fill. The fill consists predominantly of silty sands with gravel, bricks, rock fragments, concrete, and coal cinders. Native soils beneath the fill layer consist of medium to fine sand and silt and continues with slight variations up to 35 feet below ground surface (bgs). Clay was encountered at several boring locations at depths greater than 6 feet bgs. The depth to groundwater is approximately 15 feet below grade. The regional groundwater flow direction is roughly south to north, towards the English Kills.
Env Problem: This site is now in the BCP as 2 Ingraham Street site (C224036). Project was reclassed to N.
Health Problem: Not reported
Dump: Not reported
Structure: Not reported
Lagoon: Not reported
Landfill: Not reported
Pond: Not reported
Disp Start: Not reported
Disp Term: Not reported

2 INGRAHAM STREET - OFF-SITE (Continued) **S110487597**

Lat/Long:	Not reported
Dell:	Not reported
Record Add:	Not reported
Record Upd:	Not reported
Updated By:	Not reported
Own Op:	Document Repository
Sub Type:	C05
Owner Name:	Gerald A. Esposito
Owner Company:	Brooklyn Community Board 1
Owner Address:	435 Graham Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11211
Owner Country:	United States of America
Own Op:	Owner
Sub Type:	01
Owner Name:	Joe Brunner
Owner Company:	Bogart Holdings LLC
Owner Address:	390 Berry Street, Suite 200
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11249
Owner Country:	United States of America
Own Op:	Document Repository
Sub Type:	NNN
Owner Name:	Loren Williams
Owner Company:	Brooklyn Public Library, Central Branch
Owner Address:	10 Grand Army Plaza
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11238
Owner Country:	United States of America
HW Code:	Not reported
Waste Type:	Not reported
Waste Quantity:	Not reported
Waste Code:	Not reported
Crossref ID:	Not reported
Cross Ref Type Code:	Not reported
Cross Ref Type:	Not reported
Record Added Date:	Not reported
Record Updated:	Not reported
Updated By:	Not reported

VCP:

Name:	2 INGRAHAM STREET
Address:	2 INGRAHAM STREET
City,State,Zip:	BROOKLYN, NY 11206
Program Type:	VCP
Site Code:	56868
HW Code:	V00184
Site Class:	N
SWIS:	2401
Region:	2
Town:	New York City
Acres:	Not reported
Date Record Added:	11/30/2000
Date Record Updated:	06/16/2009
Updated By:	IXMUNTEA
Site Description:	2 Ingraham Street, site represents the Block 3084, Lot 1, in the Williamsburg Area of Brooklyn, NY 11206. The site is a 0.5 acre

2 INGRAHAM STREET - OFF-SITE (Continued) **S110487597**

warehouse. The property is bordered by Ingraham Street to the north, by Marrisson Place to the south, by Bogart Street to the west and by Morgan Avenue to the east. The current use of the site is commercial. Before 1998, the building was used for cloth manufacturing and one of its section was used as a plating factory (Former Jayer Plating Co.). In spring 1998, the warehouse was vacant. The neighbourhood was mixed industrial, residential, and commercial. In the western section of the warehouse, where the plating factory has operated a deep corroded dry drain was noticed. In this area the concrete floor was also broken and corroded, perhaps due to waste bath residues of the metal plating processes on the floor. The VCP investigation was not compleated and the Volunteer Cleanup Agreement negotiations have been closed . See project C224036

Env Problem:	Not reported
Health Problem:	Not reported
Dump:	Not reported
Structure:	Not reported
Lagoon:	Not reported
Landfill:	Not reported
Pond:	Not reported
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	Not reported
Dell:	Not reported
Record Add:	Not reported
Record Upd:	Not reported
Updated By:	Not reported
Own Op:	Applicant/Requestor
Sub Type:	ZZZ
Owner Name:	CARL SAVRYN
Owner Company:	Milhan Realty Corporation
Owner Address:	2 INGRAHAM ST.
Owner Addr2:	Not reported
Owner City,St,Zip:	BROOKLYN, NY 11206
Owner Country:	United States of America
HW Code:	Not reported
Waste Type:	Not reported
Waste Quantity:	Not reported
Waste Code:	Not reported
Crossref ID:	Not reported
Cross Ref Type Code:	Not reported
Cross Ref Type:	Not reported
Record Added Date:	Not reported
Record Updated:	Not reported
Updated By:	Not reported

BROWNFIELDS:

Name:	2 INGRAHAM STREET
Address:	2 INGRAHAM ST
City,State,Zip:	EAST WILLIAMSBURG, NY 11206
Program:	BCP
Site Code:	435675
Acres:	1.8
HW Code:	C224036
SWIS:	2401
Town:	New York City
Record Added Date:	06/04/2010

2 INGRAHAM STREET - OFF-SITE (Continued) **S110487597**

Record Updated Date: 01/14/2019
Update By: GWBURKE
Site Description: Location: The 2 Ingraham Street site is located at 2 Ingraham Street in the East Williamsburg Area of Brooklyn, New York. Site Features: The site is a 0.5 acre warehouse and is bordered on the south by Harrison Place, on the north by Ingraham Street, on the west by Bogart Street, and on the east by Morgan Avenue. The site is affected by an easement for the New York City Water Tunnel No. 3. Current Zoning and Land Use: The current zoning of the property is M1-2 (light manufacturing), and it is currently vacant. The surrounding land use is mainly manufacturing (M-1 and M-2) with residential (R-6) farther east and west of the site. The businesses in the immediate area include warehouses, auto scrap yards, masonry materials sales, waste management and trucking. The neighborhood surrounding the site includes some residential units interspersed with commercial properties. A New York City Transit Authority subway line is located beneath Harrison Place, and there are rail yards nearby which are connected to the Long Island Railroad Bushwick Branch. Past Use of the Site: Prior 1946 the Site was used as an orphanage. In 1948, the site was occupied by an umbrella manufacturing plant and a metal plating company between 1946 and early 1990's. After the 1990's, the site has been used as a warehouse without major changes. The site structure has been unoccupied since April 2016. Site Geology and Hydrogeology: The site is underlain by 0 to 8 feet of fill. The fill consists predominantly of silty sands with gravel, bricks, rock fragments, concrete, and coal cinders. Native soils beneath the fill layer consist of medium to fine sand and silt and continues with slight variations up to 35 feet below ground surface (bgs). Clay was encountered at several boring locations at depths greater than 6 feet bgs. The depth to groundwater is approximately 15 feet below grade. The regional groundwater flow direction is roughly south to north, towards the English Kills.
Env Problem: Nature and Extent of Contamination: Soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), and pesticides. The primary contaminants of concern at the site include metals, SVOCs, and VOCs. Environmental investigation in the area revealed concentrations of metals, SVOCs, and VOCs exceeding Standards, Criteria, and Guidance values (SCGs) in the soil and/or groundwater. Soil: Based upon investigations to date, sub-surface soils are contaminated with metals, SVOCS, and VOCs. Results from soils sampling reported metals (chromium, lead, mercury, and nickel), SVOCs (polyaromatic hydrocarbons or PAHs), and VOCs(tetrachloroethene or PCE). The PAHs contamination in soils is likely related to the presence of historic fill. Maximum detections vs. applicable unrestricted use or protection of groundwater soil cleanup objectives (UUSCO/PGWSCO) are as follows: chromium at 8,400 ppm vs. 19 ppm, lead at 607 ppm vs. 63 ppm, mercury at 1,790 ppm vs. 0.73 ppm, nickel at 3,720 ppm vs. 130 ppm, several PAHs including benzo(a)pyrene at 16 ppm vs. 1 ppm, and PCE at 1.9 ppm vs. 0.47 ppm. Mercury and nickel (up to 18.2 ppm, and 433 ppm, respectively) were detected off-site at soil boring SSB7N. Lead (up to 106 ppm) was detected off-site at soil boring SB8. Groundwater: Groundwater sampling indicates metals and VOCs contamination above Class GA groundwater standards. Some metals were found in relative low levels in groundwater and are likely related to the presence of historic fill. Maximum groundwater detections vs. standards are as follows: chromium at 110,000 parts

2 INGRAHAM STREET - OFF-SITE (Continued) **S110487597**

per billion (ppb) vs. 50 ppb, lead at 461 ppb vs. 25 ppb, and nickel at 90,900 ppb vs. 100 ppb. PCE (up to 17 ppb) and mercury (up to 3.3 ppb) were detected in off-site downgradient groundwater at MW-7. Chromium, lead, and nickel (up to 10,800 ppb, 802 ppb, and 8,690 ppb, respectively) were detected off-site in down-gradient groundwater at MW-8. Trichloroethene up to 140 ppb was detected off-site in groundwater at MW-6. Soil Vapor: Elevated levels of VOCs were detected in sub-slab soil vapor. The maximum concentrations of PCE and 1,1,1-Trichloroethane in sub-slab soil vapor were detected in the northwestern/northeastern portion of the site at the respective concentrations of 827 micrograms per cubic meter (ug/m3) and 1,220 ug/m3. In addition, soil vapor intrusion (SVI) levels for methylene chloride (e.g., 42 ug/m3 [below the slab] and 20.5 ug/m3 [indoor air]) require additional assessment, investigation or mitigation in accordance with NYSDOH SVI matrices. Therefore, additional sampling is needed to determine whether actions are needed to address soil vapor intrusion on- and off-site. Significant Threat: Recent public events held at the site and past unapproved activities are likely to increase the risk of direct contact with the contamination visually observed on the surface of the slab and/or slab areas with broken concrete in which the upper soils likely contain hazardous waste levels of contamination. Contravention of SCOs for metals pose a significant threat to human health due to accessibility. Also, metals contamination in soil at the source area exceeds respective industrial and/or protection of groundwater SCOs. This has resulted in contamination of shallow groundwater at levels several orders of magnitude above standards, creating a significant threat to the environment.

Health Problem: Contaminated groundwater at the site is not used for drinking or other purposes and the site is served by a public water supply that obtains water from a different source not affected by this contamination. People may come into contact with contaminants in soils if they dig below the surface or contact exposed soil. Volatile organic compounds in soil vapor (air spaces within the soil) may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Because the site is vacant, the inhalation of site-related contaminants due to soil vapor intrusion does not represent a current concern. The potential exists for the inhalation of site contaminants due to soil vapor intrusion in the event the site is re-occupied and for any future buildings developed on the site. Additional evaluation is needed to determine whether actions are needed to address soil vapor intrusion off-site.

Dump: False
Structure: False
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported
Record Add: 2013-09-20 13:57:00
Record Upd: 2016-09-28 14:18:00
Updated By: JXPEREZM
Own Op: Document Repository

2 INGRAHAM STREET - OFF-SITE (Continued) **S110487597**

Sub Type:	NNN
Owner Name:	Loren Williams
Owner Company:	Brooklyn Public Library, Central Branch
Owner Address:	10 Grand Army Plaza
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11238
Owner Country:	United States of America
Own Op:	Owner
Sub Type:	06
Owner Name:	Joe Brunner
Owner Company:	Bogart Holdings LLC
Owner Address:	390 Berry Street, Suite 200
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11249
Owner Country:	United States of America
Own Op:	Applicant/Requestor
Sub Type:	P03
Owner Name:	Joseph Brunner
Owner Company:	Bogart Holdings LLC
Owner Address:	390 Berry Street, Suite 200
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11249
Owner Country:	United States of America
Own Op:	Document Repository
Sub Type:	NNN
Owner Name:	Gerald A. Esposito
Owner Company:	Brooklyn Community Board 1
Owner Address:	435 Graham Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11211
Owner Country:	United States of America
HW Code:	Not reported
Waste Type:	Not reported
Waste Quantity:	Not reported
Waste Code:	Not reported
Crossref ID:	224036
Cross Ref Type Code:	02
Cross Ref Type:	HW Site ID
Record Added Date:	2018-02-28 08:41:00
Record Updated:	2018-02-28 08:41:00
Updated By:	JEBROWN
Crossref ID:	V00184
Cross Ref Type Code:	04
Cross Ref Type:	VCP Site ID
Record Added Date:	2018-02-28 08:39:00
Record Updated:	2018-02-28 08:39:00
Updated By:	JEBROWN
Crossref ID:	9830001
Cross Ref Type Code:	01
Cross Ref Type:	Spill No.
Record Added Date:	2016-03-30 11:11:00
Record Updated:	2016-03-30 11:11:00
Updated By:	JXPEREZM
Name:	2 INGRAHAM STREET - OFF-SITE
Address:	2 INGRAHAM ST
City,State,Zip:	EAST WILLIAMSBURG, NY 11206

2 INGRAHAM STREET - OFF-SITE (Continued) **S110487597**

Program:	BCP
Site Code:	567066
Acres:	Not reported
HW Code:	C224036A
SWIS:	2401
Town:	New York City
Record Added Date:	02/22/2018
Record Updated Date:	03/25/2019
Update By:	GWBURKE
Site Description:	This project (2 Ingraham Street Off-Site, C224036A) was created to investigate for potential off-site impacts from the 2 Ingraham Street BCP Site (C224036). Location: This site is the off-site component to the 2 Ingraham Street Site located at 2 Ingraham Street in the East Williamsburg Area of Brooklyn, New York. Site Features: The BCP site is a 0.5 acre warehouse and is bordered on the south by Harrison Place, on the north by Ingraham Street, on the west by Bogart Street, and on the east by Morgan Avenue. The BCP site is affected by an easement for the New York City Water Tunnel No. 3. Current Zoning and Land Use: The current zoning of the BCP site is M1-2 (light manufacturing), and it is currently vacant. The surrounding land use is mainly manufacturing (M-1 and M-2) with residential (R-6) farther east and west of the site. The businesses in the immediate area include warehouses, auto scrap yards, masonry materials sales, waste management and trucking. The neighborhood surrounding the site includes some residential units interspersed with commercial properties. A New York City Transit Authority subway line is located beneath Harrison Place, and there are rail yards nearby which are connected to the Long Island Railroad Bushwick Branch. Past Use of the Site: Prior 1946 the BCP site was used as an orphanage. In 1948, the BCP site was occupied by an umbrella manufacturing plant and a metal plating company between 1946 and early 1990's. After the 1990's, the BCP site has been used as a warehouse without major changes. The site structure has been unoccupied since April 2016. Site Geology and Hydrogeology: The BCP site is underlain by 0 to 8 feet of fill. The fill consists predominantly of silty sands with gravel, bricks, rock fragments, concrete, and coal cinders. Native soils beneath the fill layer consist of medium to fine sand and silt and continues with slight variations up to 35 feet below ground surface (bgs). Clay was encountered at several boring locations at depths greater than 6 feet bgs. The depth to groundwater is approximately 15 feet below grade. The regional groundwater flow direction is roughly south to north, towards the English Kills.
Env Problem:	Nature and Extent of Contamination: The primary contaminants of concern off-site include metals, and volatile organic compounds (VOCs). Previous environmental investigation in the area revealed concentrations of metals and VOCs exceeding Standards, Criteria, and Guidance values in the soil and/or groundwater. Based upon investigations to date, shallow soils (up to 5 feet below ground surface) are contaminated with metals. Data results from soils sampling reported metals (lead, mercury and nickel). Maximum detections vs. applicable unrestricted use or protection of groundwater cleanup objectives are as follows: lead at 106 parts per million (ppm) vs. 63 ppm, mercury at 18.2 ppm vs. 0.73 ppm, and nickel at 433 ppm vs. 130 ppm. Groundwater sampling indicates metals and VOCs contamination above Class GA groundwater standards. Some metals were found in relative low levels in groundwater and are likely related to the presence of historic fill. Maximum groundwater

2 INGRAHAM STREET - OFF-SITE (Continued) **S110487597**

	detections vs. standards are as follows: tetrachloroethene at 17 parts per billion (ppb) vs. 5 ppb, trichloroethene at 140 ppb vs. 5 ppb, chromium at 10,800 ppb vs. 50 ppb, and nickel at 8,690 ppb vs. 100 ppb.
Health Problem:	Information submitted with the BCP application regarding the conditions at the site are currently under review and will be revised as additional information becomes available.
Dump:	False
Structure:	False
Lagoon:	False
Landfill:	False
Pond:	False
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	Not reported
Dell:	Not reported
Record Add:	2018-03-07 12:41:00
Record Upd:	2018-03-07 12:41:00
Updated By:	JXPEREZM
Own Op:	Not reported
Sub Type:	Not reported
Owner Name:	Not reported
Owner Company:	Not reported
Owner Address:	Not reported
Owner Addr2:	Not reported
Owner City,St,Zip:	Not reported
Owner Country:	Not reported
HW Code:	C224036A
Waste Type:	trichloroethene (TCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224036A
Waste Type:	nickel
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224036A
Waste Type:	chromium
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224036A
Waste Type:	mercury
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224036A
Waste Type:	tetrachloroethene (PCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224036A
Waste Type:	lead
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
Crossref ID:	Not reported
Cross Ref Type Code:	Not reported
Cross Ref Type:	Not reported
Record Added Date:	Not reported
Record Updated:	Not reported
Updated By:	Not reported

N94 **CON EDISON SERVICE BOX: 7894** **RCRA NonGen / NLR** **1017772004**
SSE **95 THAMES ST** **FINDS** **NYP004489514**
1/8-1/4 **BROOKLYN, NY 11237**
0.138 mi.
728 ft. **Site 3 of 16 in cluster N**

Relative:
Higher

Actual:
25 ft.

RCRA NonGen / NLR:

Date form received by agency:	05/04/2014
Facility name:	CON EDISON SERVICE BOX: 7894
Facility address:	95 THAMES ST BROOKLYN, NY 11237
EPA ID:	NYP004489514
Mailing address:	IRVING PL, 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	212-460-3770
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	04/04/2014
Site name:	CON EDISON
Classification:	Large Quantity Generator

Date form received by agency:	04/04/2014
Site name:	CON EDISON
Classification:	Not a generator, verified

Violation Status: No violations found

FINDS:

Registry ID: 110063806207

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of

CON EDISON SERVICE BOX: 7894 (Continued) **1017772004**

events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

N95 **CON EDISION** **NY MANIFEST** **S116550563**
SSE **95 THAMES ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.138 mi.
728 ft. **Site 4 of 16 in cluster N**

Relative:
Higher

Actual:
25 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004489514
Facility Status:	Not reported
Location Address 1:	95 THAMES
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004489514
Mailing Name:	CON EDISION
Mailing Contact:	CON EDISION
Mailing Address 1:	4 IRVING PL
Mailing Address 2:	15TH FL
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	04/04/2014
Trans1 Recv Date:	04/04/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	04/04/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004489514
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105

CON EDISION (Continued) **S116550563**

TSDF ID 2:	Not reported
Manifest Tracking Number:	002361105GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	1200
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

O96 **ACME CAKE CO INC** **NY UST** **U001838987**
West **374 JOHNSON AVE** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.138 mi.
730 ft. **Site 3 of 3 in cluster O**

Relative:
Lower

Actual:
18 ft.

UST:

Name:	ACME CAKE CO INC
Address:	374 JOHNSON AVE
City,State,Zip:	BROOKLYN, NY 11206
Id/Status:	2-253782 / Unregulated/Closed
Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	N/A
UTM X:	590135.83115
UTM Y:	4506807.64595
Site Type:	Other

Affiliation Records:

Site Id:	10291
Affiliation Type:	Facility Owner

ACME CAKE CO INC (Continued) **U001838987**

Company Name:	WILLIAM F WENZEL
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	1823 ALLEN DR
Address2:	Not reported
City:	SEAFORD
State:	NY
Zip Code:	11793
Country Code:	001
Phone:	(516) 221-0713
EMail:	Not reported
Fax Number:	Not reported
Modified By:	CGFREEDM
Date Last Modified:	2004-12-14

Site Id:	10291
Affiliation Type:	Mail Contact
Company Name:	WILLIAM F WENZEL
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	1823 ALLEN DR
Address2:	Not reported
City:	SEAFORD
State:	NY
Zip Code:	11793
Country Code:	001
Phone:	(516) 221-0713
EMail:	Not reported
Fax Number:	Not reported
Modified By:	CGFREEDM
Date Last Modified:	2004-12-14

Site Id:	10291
Affiliation Type:	Facility Operator
Company Name:	ACME CAKE CO INC
Contact Type:	Not reported
Contact Name:	THOMAS SEMON
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 497-0438
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	10291
Affiliation Type:	Emergency Contact
Company Name:	WILLIAM F WENZEL
Contact Type:	Not reported
Contact Name:	THOMAS SEMON
Address1:	Not reported
Address2:	Not reported
City:	Not reported

ACME CAKE CO INC (Continued) **U001838987**

State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(516) 221-9006
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	001
Tank ID:	28065
Tank Status:	Closed - In Place
Material Name:	Closed - In Place
Capacity Gallons:	3000
Install Date:	Not reported
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

F00 - Pipe External Protection - None
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
H00 - Tank Leak Detection - None
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
I04 - Overfill - Product Level Gauge (A/G)
D01 - Pipe Type - Steel/Carbon Steel/Iron
A00 - Tank Internal Protection - None

M97 **DERBY TEXTILE CORPORATION** **NY LTANKS** **U000411048**
East **41 VARICK AVENUE** **NY UST** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.141 mi.
743 ft. **Site 2 of 5 in cluster M**

Relative:
Lower

Actual:
16 ft.

LTANKS:

Name:	DERBY TEXTILE CORP
Address:	41 VARICK AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9713513 / 2004-08-18
Facility ID:	9713513
Site ID:	331363
Spill Date:	1998-03-05
Spill Cause:	Tank Test Failure
Spill Source:	Commercial/Industrial

DERBY TEXTILE CORPORATION (Continued) **U000411048**

Spill Class:	B3
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	SMSANGES
Referred To:	Not reported
Reported to Dept:	1998-03-05
CID:	322
Water Affected:	Not reported
Spill Notifier:	Tank Tester
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	1998-03-05
Spill Record Last Update:	2004-08-18
Spiller Name:	KEITH
Spiller Company:	DERBY TEXTILE CORP
Spiller Address:	41 VARICK AVE
Spiller County:	001
Spiller Contact:	KEITH
Spiller Phone:	(718) 384-9151
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	266507
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was SANGESLAND Sub to USA tanks, Keith 718-384-9151. 8/18/2004 Sangesland reviewed a package from William Fried of Derby Textile Corp. (718-628-6300). Receipts show that PTC returned to the site 3/26-3/31 1998 (2 weeks after the initial spill report). They excavated to tank top and replaced all lines. No contamination was found. Tank was cleaned and then retested - Passed."
Remarks:	"GROSS FAILURE "

All TTF:

Facility ID:	9713513
Spill Number:	9713513
Spill Tank Test:	1545656
Site ID:	331363
Tank Number:	1
Tank Size:	3000
Material:	0002
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	03
Test Method 2:	Horner EZ Check I or II
Leak Rate:	.00
Gross Fail:	Not reported
Modified By:	Spills
Last Modified Date:	Not reported

All Materials:

Site ID:	331363
Operable Unit ID:	1056368
Operable Unit:	01

DERBY TEXTILE CORPORATION (Continued) **U000411048**

Material ID: 324528
Material Code: 0002A
Material Name: #4 fuel oil
Case No.: Not reported
Material FA: Petroleum
Quantity: .00
Units: G
Recovered: .00
Oxygenate: Not reported

UST:
Name: DERBY TEXTILE CORPORATION
Address: 41 VARICK AVENUE
City,State,Zip: BROOKLYN, NY 11237
Id/Status: 2-477982 / Unregulated/Closed
Program Type: PBS
Region: STATE
DEC Region: 2
Expiration Date: N/A
UTM X: 590685.03398
UTM Y: 4506768.31548
Site Type: Other

Affiliation Records:
Site Id: 21224
Affiliation Type: Facility Owner
Company Name: DERBY TEXTILE CORPORATION
Contact Type: V.P.
Contact Name: WOLF FRIED
Address1: 41 VARICK AVENUE
Address2: Not reported
City: BROOKLYN
State: NY
Zip Code: 11237
Country Code: 001
Phone: (718) 628-6300
EMail: Not reported
Fax Number: Not reported
Modified By: MRBARROW
Date Last Modified: 2016-05-12

Site Id: 21224
Affiliation Type: Mail Contact
Company Name: DERBY TEXTILE CORPORATION
Contact Type: Not reported
Contact Name: Not reported
Address1: 41 VARICK AVENUE
Address2: Not reported
City: BROOKLYN
State: NY
Zip Code: 11237
Country Code: 001
Phone: (718) 628-6300
EMail: Not reported
Fax Number: Not reported
Modified By: MRBARROW

DERBY TEXTILE CORPORATION (Continued) **U000411048**

Date Last Modified:	2016-05-12

Site Id:	21224
Affiliation Type:	Facility Operator
Company Name:	DERBY TEXTILE CORPORATION
Contact Type:	Not reported
Contact Name:	WOLF FRIED
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	999
Phone:	(718) 628-6300
EMail:	Not reported
Fax Number:	Not reported
Modified By:	MRBARROW
Date Last Modified:	2016-05-12

Site Id:	21224
Affiliation Type:	Emergency Contact
Company Name:	DERBY TEXTILE CORPORATION
Contact Type:	Not reported
Contact Name:	WOLF FRIED
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	999
Phone:	(718) 628-6300
EMail:	Not reported
Fax Number:	Not reported
Modified By:	MRBARROW
Date Last Modified:	2016-05-12

Tank Info:

Tank Number:	001
Tank ID:	38456
Tank Status:	Closed - In Place
Material Name:	Closed - In Place
Capacity Gallons:	2700
Install Date:	01/01/1931
Date Tank Closed:	12/09/2015
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Tightness Test Method:	21
Date Test:	12/07/2015
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	MRBARROW
Last Modified:	04/14/2017

DERBY TEXTILE CORPORATION (Continued) **U000411048**

Equipment Records:

G00 - Tank Secondary Containment - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

N98 **CON EDISON** **NY MANIFEST** **S116550572**
SSE **97 THAMES ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.141 mi.
747 ft. **Site 5 of 16 in cluster N**

Relative:
Higher

Actual:
25 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004489605
Facility Status:	Not reported
Location Address 1:	97 THAMES ST
Code:	BP
Location Address 2:	SB77638
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11201
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004489605
Mailing Name:	CON EDISON
Mailing Contact:	CON EDISON
Mailing Address 1:	4 IRVING PL
Mailing Address 2:	15TH FL
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	04/04/2014
Trans1 Recv Date:	04/04/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	04/04/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004489605
Trans1 EPA ID:	Not reported

CON EDISON (Continued) **S116550572**

Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002360269GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	200
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

N99 **CON EDISON SERVICE BOX: 72638** **RCRA NonGen / NLR** **1017772013**
SSE **97 THAMES ST** **NYP004489605**
1/8-1/4 **BROOKLYN, NY 11237**
0.141 mi.
747 ft. **Site 6 of 16 in cluster N**

Relative: RCRA NonGen / NLR:
Higher

Date form received by agency:	05/04/2014
Facility name:	CON EDISON SERVICE BOX: 72638
Facility address:	97 THAMES ST BROOKLYN, NY 11237
EPA ID:	NYP004489605
Mailing address:	IRVING PL, 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	212-460-3770
Contact email:	Not reported

Actual:
25 ft.

CON EDISON SERVICE BOX: 72638 (Continued) **1017772013**

EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 04/04/2014
Site name: CON EDISON
Classification: Small Quantity Generator

Date form received by agency: 04/04/2014
Site name: CON EDISON
Classification: Not a generator, verified

Violation Status: No violations found

N100 **BROWNING FERRIS INDUSTRIES OF NEW YORK** **RCRA NonGen / NLR** **1001233279**
SSE **105-115 THAMES ST** **FINDS** **NYR000064568**
1/8-1/4 **BROOKLYN, NY 11237** **ECHO**
0.143 mi.
753 ft. **Site 7 of 16 in cluster N**

Relative:
Higher

Actual:
25 ft.

RCRA NonGen / NLR:
Date form received by agency: 01/01/2007
Facility name: BROWNING FERRIS INDUSTRIES OF NEW YORK
Facility address: 105-115 THAMES ST
BROOKLYN, NY 11237
EPA ID: NYR000064568
Mailing address: SCOTT AVE
BROOKLYN, NY 11237
Contact: JAMES VAN WOERT
Contact address: SCOTT AVE
BROOKLYN, NY 11237
Contact country: US
Contact telephone: 718-497-4000
Contact email: Not reported
EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

BROWNING FERRIS INDUSTRIES OF NEW YORK (Continued) **1001233279**

Owner/operator name: BROWNING FERRIS INDUSTRIES OF NEW YORK
Owner/operator address: 72 SCOTT AVE
BROOKLYN, NY 11237
Owner/operator country: US
Owner/operator telephone: 718-497-4000
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: BROWNING FERRIS INDUSTRIES OF NEW YORK
Owner/operator address: 72 SCOTT AVE
BROOKLYN, NY 11237
Owner/operator country: US
Owner/operator telephone: 718-497-4000
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2006
Site name: BROWNING FERRIS INDUSTRIES OF NEW YORK
Classification: Not a generator, verified

Date form received by agency: 01/01/2001
Site name: BROWNING FERRIS INDUSTRIES INC
Classification: Large Quantity Generator

Date form received by agency: 12/15/1998
Site name: BROWNING FERRIS INDUSTRIES OF NEW YORK
Classification: Large Quantity Generator

BROWNING FERRIS INDUSTRIES OF NEW YORK (Continued) **1001233279**

Hazardous Waste Summary:

. Waste code: D008
. Waste name: LEAD

Violation Status: No violations found

FINDS:

Registry ID: 110006449593

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1001233279
Registry ID: 110006449593
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110006449593

N101 **CON EDISON MANHOLE: 72394** **RCRA NonGen / NLR** **1017777560**
SSE **105 THAMES ST** **NYP004554564**
1/8-1/4 **BROOKLYN, NY 11237**
0.143 mi.
753 ft. **Site 8 of 16 in cluster N**

Relative: Higher
Actual: 25 ft.

RCRA NonGen / NLR:
Date form received by agency: 07/05/2014
Facility name: CON EDISON MANHOLE: 72394
Facility address: 105 THAMES ST
BROOKLYN, NY 11237
EPA ID: NYP004554564
Mailing address: IRVING PL, 15TH FL NE
NEW YORK, NY 10003
Contact: THOMAS TEELING
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: 212-460-3770
Contact email: Not reported
EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No

CON EDISON MANHOLE: 72394 (Continued) **1017777560**

Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	06/05/2014
Site name:	CON EDISON
Classification:	Small Quantity Generator

Date form received by agency:	06/05/2014
Site name:	CON EDISON
Classification:	Not a generator, verified

Violation Status: No violations found

N102 **CON EDISON** **NY MANIFEST** **S116550573**
SSE **105 THAMES ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.143 mi.
753 ft. **Site 9 of 16 in cluster N**

Relative:
Higher

Actual:
25 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004554564
Facility Status:	Not reported
Location Address 1:	105 THAMES ST
Code:	BP
Location Address 2:	MH 72394
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004554564
Mailing Name:	CON EDISON
Mailing Contact:	TOM TEELING
Mailing Address 1:	4 IRVING PLACE 15TH FLOOR
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported

CON EDISON (Continued) **S116550573**

seq:	Not reported
Year:	2014
Trans1 State ID:	NJ0000027193
Trans2 State ID:	Not reported
Generator Ship Date:	06/05/2014
Trans1 Recv Date:	06/05/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	06/05/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004554564
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD002200046
TSDF ID 2:	Not reported
Manifest Tracking Number:	013245726JJK
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	200
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

N103 **CON EDISON** **NY MANIFEST** **S121967118**
SSE **105 THAMES ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.143 mi.
753 ft. **Site 10 of 16 in cluster N**

Relative:
Higher

Actual:
25 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004489613
Facility Status:	Not reported
Location Address 1:	105 THAMES STREET
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004489613
Mailing Name:	CON EDISON
Mailing Contact:	CON EDISON
Mailing Address 1:	4 IRVING PL
Mailing Address 2:	15TH FL
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	04/03/2014
Trans1 Recv Date:	04/03/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	04/04/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004489613
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002407027GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported

CON EDISON (Continued) **S121967118**

Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	300
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

N104 **CON EDISON SERVICE BOX: 48482** **RCRA NonGen / NLR** **1017772014**
SSE **105 THAMES ST** **NYP004489613**
1/8-1/4 **BROOKLYN, NY 11237**
0.143 mi.
753 ft. **Site 11 of 16 in cluster N**

Relative: **Higher**

Actual: **25 ft.**

RCRA NonGen / NLR:

Date form received by agency:	05/04/2014
Facility name:	CON EDISON SERVICE BOX: 48482
Facility address:	105 THAMES ST BROOKLYN, NY 11237
EPA ID:	NYP004489613
Mailing address:	IRVING PL, 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	212-460-3770
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No

CON EDISON SERVICE BOX: 48482 (Continued) **1017772014**

On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 04/04/2014
Site name: CON EDISON
Classification: Large Quantity Generator

Date form received by agency: 04/04/2014
Site name: CON EDISON
Classification: Not a generator, verified

Violation Status: No violations found

N105 **CITYGREEN ORGANICS** **NY SWF/LF** **S122985447**
SSE **105-115 THAMES STREET** **NY Financial Assurance** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.143 mi.
753 ft. **Site 12 of 16 in cluster N**

Relative:
Higher

Actual:
25 ft.

SWF/LF:
Flag: ACTIVE
Region Code: 2
Phone Number: 7184561307
Owner Name: Not reported
Owner Type: Not reported
Owner Address: Not reported
Owner Addr2: Not reported
Owner City,St,Zip: Not reported
Owner Email: Not reported
Owner Phone: Not reported
Contact Name: Aziz Kahany
Contact Address: 105-115 Thames Street
Contact Addr2: Not reported
Contact City,St,Zip: Brooklyn, NY 11237
Contact Email: azizkahany@yahoo.com
Contact Phone: 7184561307
Activity Desc: z Retired - Transfer station - permit
Activity Number: [24T40]
Active: Yes
East Coordinate: 590531
North Coordinate: 4506557
Accuracy Code: Not reported
Regulatory Status: Permit
Waste Type: MSW (Residential/Institutional & Commercial);Corrugated Cardboard;Metals (Ferrous & Non-Ferrous)
Authorization #: 2-6104-00096/00002
Authorization Date: 03/24/2017
Expiration Date: 04/28/2021
Operator Name: Not reported
Operator Type: Not reported

CITYGREEN ORGANICS (Continued) **S122985447**

Laste Date: Not reported

NY Financial Assurance 1:
Owner Name: Nino Tristani
Region: 2
Estimate Type: Closure
Estimate Amount: 136000
Estimate Date: 03/01/2001
Mechanism: Surety bond - Performance
Mechanism Amount: 136000
Issue Date: Not reported
Expiration Date: Not reported
Activity Number: 24T40
Activity Description: Transfer station - permit

Q106 **CON EDISON** **NY MANIFEST** **S116550571**
South **47 THAMES ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.144 mi.
760 ft. **Site 1 of 15 in cluster Q**

Relative:
Higher

Actual:
27 ft.

NY MANIFEST:
Country: USA
EPA ID: NYP004489597
Facility Status: Not reported
Location Address 1: OPP 47 THAMES ST
Code: BP
Location Address 2: SB7890
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: 11237
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYP004489597
Mailing Name: CON EDISON
Mailing Contact: CON EDISON
Mailing Address 1: 4 IRVING PL
Mailing Address 2: 15TH FL
Mailing City: NEW YORK
Mailing State: NY
Mailing Zip: 10003
Mailing Zip 4: Not reported
Mailing Country: USA
Mailing Phone: Not reported

NY MANIFEST:
Document ID: Not reported
Manifest Status: Not reported
seq: Not reported
Year: 2014
Trans1 State ID: NJD003812047
Trans2 State ID: Not reported
Generator Ship Date: 04/04/2014
Trans1 Recv Date: 04/04/2014
Trans2 Recv Date: Not reported

CON EDISON (Continued) **S116550571**

TSD Site Recv Date:	04/04/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004489597
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002407787GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	150
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

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-1 additional NY MANIFEST: record(s) in the EDR Site Report.

Q107 **47 THAMES STREET** **NY UST** **U003800452**
South **47 THAMES ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.144 mi.
760 ft. **Site 2 of 15 in cluster Q**

Relative: UST:
Higher

Actual:
27 ft.

Name:	47 THAMES STREET
Address:	47 THAMES ST
City,State,Zip:	BROOKLYN, NY 11237
Id/Status:	2-606741 / Unregulated/Closed
Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	N/A

47 THAMES STREET (Continued) **U003800452**

UTM X: 590338.35743
UTM Y: 4506516.33742
Site Type: Apartment Building/Office Building

Affiliation Records:

Site Id: 28598
Affiliation Type: Facility Owner
Company Name: KAY MANAGEMENT
Contact Type: Not reported
Contact Name: Not reported
Address1: 1975 LINDEN BOULEVARD
Address2: Not reported
City: ELMONT
State: NY
Zip Code: 11003
Country Code: 001
Phone: (516) 285-5610
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 28598
Affiliation Type: Mail Contact
Company Name: AGGRESSIVE HEATING, INC.
Contact Type: Not reported
Contact Name: DOROTHY FRNECH
Address1: 9009 FIFTH AVENUE
Address2: Not reported
City: BROOKLYN
State: NY
Zip Code: 11209
Country Code: 001
Phone: (718) 836-9222
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 28598
Affiliation Type: Facility Operator
Company Name: 47 THAMES STREET
Contact Type: Not reported
Contact Name: HOWIE KLAUS
Address1: Not reported
Address2: Not reported
City: Not reported
State: NN
Zip Code: Not reported
Country Code: 001
Phone: (516) 285-5610
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 28598
Affiliation Type: Emergency Contact

47 THAMES STREET (Continued) **U003800452**

Company Name:	KAY MANAGEMENT
Contact Type:	Not reported
Contact Name:	HOWIE KLAUS
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(516) 285-5610
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	001
Tank ID:	61832
Tank Status:	Closed - Removed
Material Name:	Closed - Removed
Capacity Gallons:	3000
Install Date:	Not reported
Date Tank Closed:	06/19/2001
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

D00 - Pipe Type - No Piping
A00 - Tank Internal Protection - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
G00 - Tank Secondary Containment - None
J00 - Dispenser - None

Q108
South
1/8-1/4
0.144 mi.
760 ft.

CON EDISON SERVICE BOX: 7890
47 THAMES ST
BROOKLYN, NY 11237

Site 3 of 15 in cluster Q

RCRA NonGen / NLR **1017772012**
NYP004489597

Relative:
Higher

Actual:
27 ft.

RCRA NonGen / NLR:

Date form received by agency:	05/04/2014
Facility name:	CON EDISON SERVICE BOX: 7890
Facility address:	47 THAMES ST BROOKLYN, NY 11237
EPA ID:	NYP004489597
Mailing address:	IRVING PL, 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	212-460-3770
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	04/04/2014
Site name:	CON EDISON
Classification:	Small Quantity Generator

Date form received by agency:	04/04/2014
Site name:	CON EDISON
Classification:	Not a generator, verified

Violation Status: No violations found

R109 **NYNEX** **NY MANIFEST** **1009233950**
NW **MESSEROLE ST & MORGAN AVE** **N/A**
1/8-1/4 **BROOKLYN, NY 11021**
0.144 mi.
760 ft. **Site 1 of 5 in cluster R**

Relative: **Lower**

Actual: **14 ft.**

NY MANIFEST:

Country:	USA
EPA ID:	NYP000923458
Facility Status:	Not reported
Location Address 1:	MESSEROLE ST & MORGAN AVE
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11021
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP000923458
Mailing Name:	NYNEX
Mailing Contact:	SUSHMITA BISWAS
Mailing Address 1:	221 EAST 37TH STREET
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10016
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	2123387126

NY MANIFEST:

Document ID:	MIA4134025
Manifest Status:	K
seq:	Not reported
Year:	1996
Trans1 State ID:	Not reported
Trans2 State ID:	Not reported
Generator Ship Date:	02/01/1996
Trans1 Recv Date:	02/01/1996
Trans2 Recv Date:	/ /
TSD Site Recv Date:	02/29/1996
Part A Recv Date:	/ /
Part B Recv Date:	03/15/1996
Generator EPA ID:	NYP000923458
Trans1 EPA ID:	NYD010951986
Trans2 EPA ID:	Not reported
TSDF ID 1:	MID096963194
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported

NYNEX (Continued) **1009233950**

Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	D008 - LEAD 5.0 MG/L TCLP
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	03200
Units:	P - Pounds
Number of Containers:	008
Container Type:	DM - Metal drums, barrels
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	100

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-1 additional NY MANIFEST: record(s) in the EDR Site Report.

L110 **JOYVA CORP.** **NY UST** **U001832708**
East **53 VARICK AVENUE** **NY Spills** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.145 mi.
765 ft. **Site 2 of 3 in cluster L**

Relative: **Lower**

Actual: **14 ft.**

UST:

Name:	JOYVA CORP.
Address:	53 VARICK AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Id/Status:	2-098043 / Unregulated/Closed
Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	N/A
UTM X:	590615.01021
UTM Y:	4506856.53995
Site Type:	Manufacturing (Other than Chemical)/Processing

Affiliation Records:

Site Id:	2835
Affiliation Type:	Facility Owner
Company Name:	JOYVA CORP.
Contact Type:	PRINCIPLE
Contact Name:	SANFORD WIENER
Address1:	53 VARICK AVENUE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(718) 497-0170
EMail:	SANDY@JOYVA.COM
Fax Number:	Not reported
Modified By:	KXTANG
Date Last Modified:	2007-03-07

Site Id:	2835

JOYVA CORP. (Continued) **U001832708**

Affiliation Type:	Mail Contact
Company Name:	JOYVA CORP.
Contact Type:	PRINCIPLE
Contact Name:	SANFORD WIENER
Address1:	53 VARICK AVENUE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(718) 497-0170
EMail:	SANDY@JOYVA.COM
Fax Number:	Not reported
Modified By:	KXTANG
Date Last Modified:	2007-03-07

Site Id:	2835
Affiliation Type:	Facility Operator
Company Name:	JOYVA CORP.
Contact Type:	Not reported
Contact Name:	JOSE MEDINA
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	999
Phone:	(718) 497-0170
EMail:	Not reported
Fax Number:	Not reported
Modified By:	KXTANG
Date Last Modified:	2007-03-07

Site Id:	2835
Affiliation Type:	Emergency Contact
Company Name:	JOYVA CORP.
Contact Type:	Not reported
Contact Name:	JOSE MEDINA
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	999
Phone:	(718) 497-0170
EMail:	Not reported
Fax Number:	Not reported
Modified By:	KXTANG
Date Last Modified:	2007-03-07

Tank Info:

Tank Number:	001
Tank ID:	5170
Tank Status:	Closed - Removed
Material Name:	Closed - Removed
Capacity Gallons:	2000

JOYVA CORP. (Continued) **U001832708**

Install Date:	07/01/1978
Date Tank Closed:	12/06/2017
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)
Tightness Test Method:	21
Date Test:	07/02/2003
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	MXLAY
Last Modified:	06/22/2018

Equipment Records:

L09 - Piping Leak Detection - Exempt Suction Piping
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
B00 - Tank External Protection - None
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
H01 - Tank Leak Detection - Interstitial - Electronic Monitoring
K00 - Spill Prevention - None
I05 - Overfill - Vent Whistle

SPILLS:

Name:	JOYVA CORP.
Address:	53 VARICK STREET
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9414645 / 1995-02-07
Facility ID:	9414645
Facility Type:	ER
DER Facility ID:	133232
Site ID:	157571
DEC Region:	2
Spill Cause:	Other
Spill Class:	C4
SWIS:	2401
Spill Date:	1995-02-07
Investigator:	SMMARTIN
Referred To:	Not reported
Reported to Dept:	1995-02-07
CID:	Not reported
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Responsible Party
Cleanup Ceased:	1995-02-07
Cleanup Meets Std:	True
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	1995-02-10
Spill Record Last Update:	2004-09-30

JOYVA CORP. (Continued) **U001832708**

Spiller Name:	Not reported
Spiller Company:	WHALECO FUEL
Spiller Address:	1 COFFEY STREET
Spiller Company:	001
Contact Name:	Not reported
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was MARTINKAT "
Remarks:	"BACK PRESSURE ON TANK CAUSED SPILL."

All Materials:

Site ID:	157571
Operable Unit ID:	1012199
Operable Unit:	01
Material ID:	567085
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	1.00
Units:	G
Recovered:	1.00
Oxygenate:	Not reported

L111 **JOYVA CORPORATION** **NY LTANKS** **S118953482**
East **53 VARICK AVE** **N/A**
1/8-1/4 **BROOKLYN, NY**
0.145 mi.
765 ft. **Site 3 of 3 in cluster L**

Relative: LTANKS:
Lower

Name:	JOYVA CORPORATION
Address:	53 VARICK AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0302698 / 2003-07-23
Facility ID:	0302698
Site ID:	303353
Spill Date:	2003-06-13
Spill Cause:	Tank Test Failure
Spill Source:	Commercial/Industrial
Spill Class:	C4
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	SMSANGES
Referred To:	Not reported
Reported to Dept:	2003-06-13
CID:	297
Water Affected:	Not reported
Spill Notifier:	Tank Tester
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	2003-06-13
Spill Record Last Update:	2003-07-23
Spiller Name:	MORT TUROSS
Spiller Company:	JOYVA CORPORATION

Actual:
14 ft.

JOYVA CORPORATION (Continued) **S118953482**

Spiller Address:	53 VARICK AV
Spiller County:	001
Spiller Contact:	MORT TUROSS ENERGY STORAG
Spiller Phone:	(718) 257-4045
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	245115
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was SANGESLAND Sangesland DDO Tank Test Failure letter sent to: Mort Tuross Joyva Corporation 53 Varick Ave Brooklyn, NY 11237 7/23/2003 - Energy Storage Systems Inc (718-257-8470) sent in a letter which stated that the problem was found on a fitting. The tank was retested and past. During the excavation to the top of the tank, no contamination was found. The tank was repaired, backfilled and put back into service. Spill Closed"
Remarks:	"NO CONTAMINATION FOUND AROUND THE TANK"

All TTF:

Facility ID:	0302698
Spill Number:	0302698
Spill Tank Test:	1528449
Site ID:	303353
Tank Number:	Not reported
Tank Size:	2000
Material:	0001
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	03
Test Method 2:	Horner EZ Check I or II
Leak Rate:	.00
Gross Fail:	Not reported
Modified By:	Spills
Last Modified Date:	Not reported

All Materials:

Site ID:	303353
Operable Unit ID:	870434
Operable Unit:	01
Material ID:	507158
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

M112 **CON EDISON** **NY MANIFEST** **S117736411**
ESE **33 VARICK AVE** **N/A**
1/8-1/4 **BROOKLYN, NY 11222**
0.151 mi.
798 ft. **Site 3 of 5 in cluster M**

Relative:
Higher

Actual:
19 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004508990
Facility Status:	Not reported
Location Address 1:	33 VARICK AVE OPP
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11222
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004508990
Mailing Name:	CON EDISON
Mailing Contact:	CON EDISON
Mailing Address 1:	4 IRVING PL
Mailing Address 2:	15TH ST
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	04/23/2014
Trans1 Recv Date:	04/23/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	04/24/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004508990
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002418066GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported

CON EDISON (Continued) **S117736411**

Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	800
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

M113 **CON EDISON MANHOLE: 56833** **RCRA NonGen / NLR** **1017773121**
ESE **33 VARICK AVE** **NYP004508990**
1/8-1/4 **BROOKLYN, NY 11222**
0.151 mi.
798 ft. **Site 4 of 5 in cluster M**

Relative: **Higher**

Actual: **19 ft.**

RCRA NonGen / NLR:

Date form received by agency:	05/23/2014
Facility name:	CON EDISON MANHOLE: 56833
Facility address:	33 VARICK AVE BROOKLYN, NY 11222
EPA ID:	NYP004508990
Mailing address:	IRVING PL, 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	212-460-3770
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No

CON EDISON MANHOLE: 56833 (Continued) **1017773121**

On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 04/23/2014
Site name: CON EDISON
Classification: Large Quantity Generator

Date form received by agency: 04/23/2014
Site name: CON EDISON
Classification: Not a generator, verified

Violation Status: No violations found

S114 **CON EDISON SERVICE BOX: 8519** **RCRA NonGen / NLR** **1017773954**
SW **17 GRATTAN ST** **FINDS** **NYP004517504**
1/8-1/4 **BROOKLYN, NY 11206**
0.152 mi.
803 ft. **Site 1 of 9 in cluster S**

Relative:
Higher

Actual:
20 ft.

RCRA NonGen / NLR:
Date form received by agency: 05/30/2014
Facility name: CON EDISON SERVICE BOX: 8519
Facility address: 17 GRATTAN ST
BROOKLYN, NY 11206
EPA ID: NYP004517504
Mailing address: IRVING PL, 15TH FL NE
NEW YORK, NY 10003
Contact: THOMAS TEELING
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: 212-460-3770
Contact email: Not reported
EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No

CON EDISON SERVICE BOX: 8519 (Continued) **1017773954**

Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 04/30/2014
Site name: CON EDISON
Classification: Large Quantity Generator

Date form received by agency: 04/30/2014
Site name: CON EDISON
Classification: Not a generator, verified

Violation Status: No violations found

FINDS:

Registry ID: 110063800310

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

S115 **CON EDISON** **NY MANIFEST** **S117736447**
SW **17 GRATTAN ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.152 mi.
803 ft. **Site 2 of 9 in cluster S**

Relative:
Higher

Actual:
20 ft.

NY MANIFEST:
Country: USA
EPA ID: NYP004517504
Facility Status: Not reported
Location Address 1: 17 GRATTAN ST
Code: BP
Location Address 2: Not reported
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: 11206
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYP004517504
Mailing Name: CON EDISON
Mailing Contact: CON EDISON
Mailing Address 1: 4 IRVING PL
Mailing Address 2: 15TH FL
Mailing City: NEW YORK
Mailing State: NY

CON EDISON (Continued) **S117736447**

Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	04/30/2014
Trans1 Recv Date:	04/30/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	05/01/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004517504
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002417607GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	700
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

CON EDISON (Continued) **S117736447**

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

Q116 **CONSOLIDATED EDISON** **NY MANIFEST** **S108650903**
South **VANDERVOORT PL & THAMES ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11201**
0.153 mi.
806 ft. **Site 4 of 15 in cluster Q**

Relative:
Higher

Actual:
28 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004150785
Facility Status:	Not reported
Location Address 1:	VANDERVOORT PL & THAMES ST
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11201
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004150785
Mailing Name:	CONSOLIDATED EDISON
Mailing Contact:	FRANKLYN MURRAY
Mailing Address 1:	4 IRVING PLACE RM 828
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	2124602808

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2007
Trans1 State ID:	NYD006982359
Trans2 State ID:	Not reported
Generator Ship Date:	05/31/2007
Trans1 Recv Date:	05/31/2007
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	06/01/2007
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004150785
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NYD077444263
TSDF ID 2:	Not reported
Manifest Tracking Number:	001450185FLE
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N

CONSOLIDATED EDISON (Continued) **S108650903**

Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H141
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	150
Units:	K - Kilograms (2.2 pounds)
Number of Containers:	2
Container Type:	DM - Metal drums, barrels
Handling Method:	L Landfill.
Specific Gravity:	1
Waste Code:	D006
Waste Code 1_2:	D007
Waste Code 1_3:	D008
Waste Code 1_4:	B007
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

Q117 **CONSOLIDATED EDISON MH55950** **NY MANIFEST** **1009243844**
South **VANDERVOORT PL & THAMES ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11201**
0.153 mi.
806 ft. **Site 5 of 15 in cluster Q**

Relative:
Higher

Actual:
28 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004134417
Facility Status:	Not reported
Location Address 1:	VANDERVOORT PL & THAMES ST
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11201
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004134417
Mailing Name:	CONSOLIDATED EDISON MH55950
Mailing Contact:	FRANKNLIN MURRAY
Mailing Address 1:	4 IRVING PLACE RM 828
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003

CONSOLIDATED EDISON MH55950 (Continued) **1009243844**

Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	2124602808

NY MANIFEST:

Document ID:	NYE1275885
Manifest Status:	Not reported
seq:	Not reported
Year:	2005
Trans1 State ID:	NYD006982359
Trans2 State ID:	Not reported
Generator Ship Date:	09/08/2005
Trans1 Recv Date:	09/08/2005
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	09/09/2005
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004134417
Trans1 EPA ID:	12446JT
Trans2 EPA ID:	Not reported
TSDF ID 1:	NYD077444263
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	D006 - CADMIUM 1.0 MG/L TCLP
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	00030
Units:	K - Kilograms (2.2 pounds)
Number of Containers:	001
Container Type:	DM - Metal drums, barrels
Handling Method:	L Landfill.
Specific Gravity:	01.00

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

Q118
South
1/8-1/4
0.153 mi.
806 ft.

CON EDISON MANHOLE 55950
THAMES ST & VANDERVOORT PL
BROOKLYN, NY 11203

Site 6 of 15 in cluster Q

RCRA NonGen / NLR **1010326188**
NYP004139879

Relative:
Higher

Actual:
28 ft.

RCRA NonGen / NLR:

Date form received by agency:	07/07/2006
Facility name:	CON EDISON MANHOLE 55950
Facility address:	THAMES ST & VANDERVOORT PL S OF THAMES ST & 79 FT E OF BROOKLYN, NY 11203
EPA ID:	NYP004139879
Mailing address:	4 IRVING PL, RM 828 NEW YORK, NY 10003
Contact:	ANTONIO DELGADO
Contact address:	4 IRVING PL, RM 828 NEW YORK, NY 10003
Contact country:	US
Contact telephone:	718-204-4201
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	07/06/2006
Site name:	CON EDISON
Classification:	Not a generator, verified

Date form received by agency:	07/05/2006
Site name:	CON EDISON
Classification:	Unverified

Violation Status: No violations found

Q119
SSW
1/8-1/4
0.155 mi.
819 ft.

ENGINE COMPANY 237
43 MORGAN AVENUE
BROOKLYN, NY 11237

Site 7 of 15 in cluster Q

NY AST **U003394378**
N/A

Relative:
Higher

Actual:
24 ft.

AST:

Name:	ENGINE COMPANY 237
Address:	43 MORGAN AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Region:	STATE
DEC Region:	2
Site Status:	Unregulated/Closed
Facility Id:	2-357502
Program Type:	PBS
UTM X:	590241.50565
UTM Y:	4506600.96957
Expiration Date:	N/A
Site Type:	Municipality (Incl. Waste Water Treatment Plants, Utilities, Swimming Pools, etc.)

Affiliation Records:

Site Id:	17900
Affiliation Type:	Facility Owner
Company Name:	NYC FIRE DEPARTMENT
Contact Type:	ASST. COMMISSIONER
Contact Name:	JOSEPH M. MASTROPIETRO
Address1:	9 METROTECH
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11201-3857
Country Code:	001
Phone:	(718) 999-2094
EMail:	Not reported
Fax Number:	Not reported
Modified By:	DAFRANCI
Date Last Modified:	2018-07-27

Site Id:	17900
Affiliation Type:	Mail Contact
Company Name:	ASST. COMMISSIONER
Contact Type:	Not reported
Contact Name:	JOSEPH M. MASTROPIETRO
Address1:	FDNY BUREAU OF FACILITIES MANAGEMENT
Address2:	48-34 35TH STREET
City:	LONG ISLAND CITY
State:	NY
Zip Code:	11101
Country Code:	001
Phone:	(718) 784-6510
EMail:	JOSEPH.MASTROPIETRO@FDNY.NYC.GOV
Fax Number:	Not reported
Modified By:	DAFRANCI
Date Last Modified:	2018-07-27

Site Id:	17900
Affiliation Type:	Facility Operator
Company Name:	ENGINE COMPANY 237
Contact Type:	Not reported
Contact Name:	VINCENT FIORE

ENGINE COMPANY 237 (Continued) **U003394378**

Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 965-8237
EMail:	Not reported
Fax Number:	Not reported
Modified By:	DAFRANCI
Date Last Modified:	2018-07-27

Site Id:	17900
Affiliation Type:	Emergency Contact
Company Name:	NYC FIRE DEPARTMENT
Contact Type:	Not reported
Contact Name:	EOC/NOTIFICATION DESK
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	999
Phone:	(718) 999-2094
EMail:	Not reported
Fax Number:	Not reported
Modified By:	MFLEONAR
Date Last Modified:	2018-03-12

Tank Info:

Tank Number:	001
Tank Id:	35089
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Equipment Records:

	B02 - Tank External Protection - Original Sacrificial Anode
	C00 - Pipe Location - No Piping
	F00 - Pipe External Protection - None
	H00 - Tank Leak Detection - None
	D00 - Pipe Type - No Piping
	G00 - Tank Secondary Containment - None
	J02 - Dispenser - Suction Dispenser
	I04 - Overfill - Product Level Gauge (A/G)
	A00 - Tank Internal Protection - None
Tank Location:	Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Closed - Removed
Pipe Model:	Not reported
Install Date:	Not reported
Capacity Gallons:	1500
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported

ENGINE COMPANY 237 (Continued) **U003394378**

Date Tank Closed:	02/01/2003
Register:	True
Modified By:	TRANSLAT
Last Modified:	04/14/2017
Material Name:	#2 fuel oil (on-site consumption)
Tank Number:	002
Tank Id:	35090
Material Code:	0008
Common Name of Substance:	Diesel

Equipment Records:

K01 - Spill Prevention - Catch Basin
C03 - Pipe Location - Aboveground/Underground Combination
J02 - Dispenser - Suction Dispenser
F05 - Pipe External Protection - Jacketed
G01 - Tank Secondary Containment - Diking (Aboveground)
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
D01 - Pipe Type - Steel/Carbon Steel/Iron
I03 - Overfill - Automatic Shut-Off
H05 - Tank Leak Detection - In-Tank System (ATG)
H99 - Tank Leak Detection - Other

Tank Location:	Aboveground - on saddles, legs, racks, etc.... Tank bottom is elevated above grade or tank pad, allowing visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Closed - Removed
Pipe Model:	Not reported
Install Date:	Not reported
Capacity Gallons:	550
Tightness Test Method:	-
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	09/15/2017
Register:	True
Modified By:	DAFRANCI
Last Modified:	07/27/2018
Material Name:	diesel
Tank Number:	003
Tank Id:	276590

Equipment Records:

E04 - Piping Secondary Containment - Double walled UG
A01 - Tank Internal Protection - Epoxy Liner
I02 - Overfill - High Level Alarm
L09 - Piping Leak Detection - Exempt Suction Piping
C03 - Pipe Location - Aboveground/Underground Combination
F04 - Pipe External Protection - Fiberglass
G12 - Tank Secondary Containment - Double-Walled (AG only)
J02 - Dispenser - Suction Dispenser
K99 - Spill Prevention - Other
L01 - Piping Leak Detection - Interstitial - Electronic Monitoring
B01 - Tank External Protection - Painted/Asphalt Coating
D01 - Pipe Type - Steel/Carbon Steel/Iron

ENGINE COMPANY 237 (Continued) **U003394378**

H01 - Tank Leak Detection - Interstitial - Electronic Monitoring
I03 - Overfill - Automatic Shut-Off
H05 - Tank Leak Detection - In-Tank System (ATG)

Tank Location:	Aboveground - on saddles, legs, racks, etc.... Tank bottom is elevated above grade or tank pad, allowing visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	In Service
Pipe Model:	Not reported
Install Date:	07/11/2018
Capacity Gallons:	681
Tightness Test Method:	-
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	Not reported
Register:	True
Modified By:	DAFRANCI
Last Modified:	07/27/2018
Material Name:	diesel

Tank Number:	003A
Tank Id:	276591

Equipment Records:

E00 - Piping Secondary Containment - None
I02 - Overfill - High Level Alarm
L09 - Piping Leak Detection - Exempt Suction Piping
G12 - Tank Secondary Containment - Double-Walled (AG only)
J02 - Dispenser - Suction Dispenser
C01 - Pipe Location - Aboveground
I04 - Overfill - Product Level Gauge (A/G)
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
D01 - Pipe Type - Steel/Carbon Steel/Iron
F01 - Pipe External Protection - Painted/Asphalt Coating
K00 - Spill Prevention - None
H05 - Tank Leak Detection - In-Tank System (ATG)

Tank Location:	Aboveground - on saddles, legs, racks, etc.... Tank bottom is elevated above grade or tank pad, allowing visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	In Service
Pipe Model:	Not reported
Install Date:	07/11/2018
Capacity Gallons:	26
Tightness Test Method:	-
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	Not reported
Register:	True
Modified By:	DAFRANCI
Last Modified:	07/27/2018
Material Name:	diesel

M120
ESE
1/8-1/4
0.157 mi.
829 ft.

CON EDISON - TRANSFORMER MANHOLE TM541
VARICK AVE & HARRISON PL
BROOKLYN, NY 11237

Site 5 of 5 in cluster M

NY MANIFEST **S120959260**
N/A

Relative:
Lower

Actual:
18 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP005007624
Facility Status:	Not reported
Location Address 1:	VARICK AVE & HARRISON PL
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP005007624
Mailing Name:	CON EDISON - TRANSFORMER MANHOLE TM541
Mailing Contact:	CON EDISON
Mailing Address 1:	4 IRVING PL 15TH FL NE
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

121
East
1/8-1/4
0.159 mi.
842 ft.

JFC INTERNATIONAL INC.
40 VARICK AVENUE
BROOKLYN, NY 11237

NY UST **U004272294**
N/A

Relative:
Lower

Actual:
14 ft.

UST:

Name:	JFC INTERNATIONAL INC.
Address:	40 VARICK AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Id/Status:	2-608636 / Unregulated/Closed
Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	N/A
UTM X:	590637.68367
UTM Y:	4506830.83432
Site Type:	Utility (Other than Municipal)

Tank Info:

Tank Number:	1
Tank ID:	65424
Tank Status:	Closed - Removed
Material Name:	Closed - Removed

JFC INTERNATIONAL INC. (Continued) **U004272294**

Capacity Gallons:	7500
Install Date:	05/16/1964
Date Tank Closed:	10/25/2015
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Tightness Test Method:	21
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	MRBARROW
Last Modified:	08/07/2017

R122 **FOROX TECHNICAL CORP** **RCRA NonGen / NLR** **1000344203**
NW **154 MORGAN AVE** **FINDS** **NYD115218257**
1/8-1/4 **BROOKLYN, NY 11237** **ECHO**
0.161 mi.
850 ft. **Site 2 of 5 in cluster R**

Relative:
Lower

Actual:
13 ft.

RCRA NonGen / NLR:

Date form received by agency:	01/01/2007
Facility name:	FOROX TECHNICAL CORP
Facility address:	154 MORGAN AVE BROOKLYN, NY 11237
EPA ID:	NYD115218257
Mailing address:	MORGAN AVE BROOKLYN, NY 11237
Contact:	Not reported
Contact address:	MORGAN AVE BROOKLYN, NY 11237
Contact country:	US
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	02
Land type:	Facility is not located on Indian land. Additional information is not known.
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	Not reported
Owner/operator address:	NOT REQUIRED NOT REQUIRED, WY 99999
Owner/operator country:	US
Owner/operator telephone:	212-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	Not reported
Owner/operator address:	NOT REQUIRED NOT REQUIRED, WY 99999
Owner/operator country:	US
Owner/operator telephone:	212-555-1212

FOROX TECHNICAL CORP (Continued) **1000344203**

Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2006
Site name: FOROX TECHNICAL CORP
Classification: Not a generator, verified

Date form received by agency: 07/08/1999
Site name: FOROX TECHNICAL CORP
Classification: Not a generator, verified

Date form received by agency: 06/05/1985
Site name: FOROX TECHNICAL CORP
Classification: Large Quantity Generator

Hazardous Waste Summary:

. Waste code: F017
. Waste name: Not Defined

. Waste code: F018
. Waste name: Not Defined

. Waste code: U226
. Waste name: ETHANE, 1,1,1-TRICHLORO- (OR) METHYL CHLOROFORM

Violation Status: No violations found

Evaluation Action Summary:
Evaluation date: 08/31/1988
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported

FOROX TECHNICAL CORP (Continued) **1000344203**

Date achieved compliance: Not reported
Evaluation lead agency: State

FINDS:

Registry ID: 110004380704

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000344203
Registry ID: 110004380704
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110004380704

R123 **GREEN OFFICE SYSTEMS DIVISION OF E.G. SALES INC.** **RCRA-SQG** **1012186523**
NW **154 MORGAN AVENUE** **NYR000163840**
1/8-1/4 **BROOKLYN, NY 11237**
0.161 mi.
850 ft. **Site 3 of 5 in cluster R**

Relative: **Lower**
Actual: **13 ft.**

RCRA-SQG:
Date form received by agency: 03/17/2009
Facility name: GREEN OFFICE SYSTEMS DIVISION OF E.G. SALES INC.
Facility address: 154 MORGAN AVENUE
BROOKLYN, NY 11237
EPA ID: NYR000163840
Mailing address: MORGAN AVENUE
BROOKLYN, NY 11237
Contact: DOUGLAS EBERLE
Contact address: MORGAN AVENUE
BROOKLYN, NY 11237
Contact country: US
Contact telephone: 718-418-1717
Contact email: Not reported
EPA Region: 02
Land type: Private
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No

GREEN OFFICE SYSTEMS DIVISION OF E.G. SALES INC. (Continued) **1012186523**

Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

Evaluation Action Summary:
Evaluation date: 03/27/2009
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

N124 **CON EDISON MANHOLE: 72395** **RCRA NonGen / NLR** **1017775310**
SE **PORTER AVE & THAMES ST 34 FEET** **FINDS** **NYP004531380**
1/8-1/4 **BROOKLYN, NY 11237**
0.161 mi.
851 ft. **Site 13 of 16 in cluster N**

Relative: **Higher**
Actual: **24 ft.**

RCRA NonGen / NLR:
Date form received by agency: 06/14/2014
Facility name: CON EDISON MANHOLE: 72395
Facility address: PORTER AVE & THAMES ST 34 FEET
N OF
BROOKLYN, NY 11237
EPA ID: NYP004531380
Mailing address: IRVING PL, 15TH FL NE
NEW YORK, NY 10003
Contact: THOMAS TEELING
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: 212-460-3770
Contact email: Not reported
EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No

CON EDISON MANHOLE: 72395 (Continued) **1017775310**

User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 05/14/2014
Site name: CON EDISON
Classification: Large Quantity Generator

Date form received by agency: 05/14/2014
Site name: CON EDISON
Classification: Not a generator, verified

Violation Status: No violations found

FINDS:

Registry ID: 110063768230

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

N125 **CON EDISON** **NJ MANIFEST** **S120674708**
SE **125 THAMES ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.164 mi.
865 ft. **Site 14 of 16 in cluster N**

Relative:
Higher

Actual:
23 ft.

NJ MANIFEST:
EPA Id: NYP004815615
Mail Address: IRVING PL 15TH FL NE
Mail City/State/Zip: NEW YORK, NY 10003
Facility Phone: Not reported
Emergency Phone: Not reported
Contact: THOMAS TEELING
Comments: Not reported
SIC Code: Not reported
County: NY047
Municipal: Not reported
Previous EPA Id: Not reported
Gen Flag: Not reported
Trans Flag: Not reported
TSDF Flag: Not reported
Name Change: Not reported
Date Change: Not reported

Manifest:

CON EDISON (Continued) **S120674708**

Manifest Number:	002619597GBF
EPA ID:	NYP004815615
Date Shipped:	7/30/2015
TSDF EPA ID:	NJD991291105
Transporter EPA ID:	NJD003812047
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	Not reported
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	Not reported
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	NEW YORK, NY 10003
Reason Load Was Rejected:	Not reported

N126 **CON EDISON** **RCRA NonGen / NLR** **1019905962**
SE **125 THAMES ST** **FINDS** **NYP004815615**
1/8-1/4 **BROOKLYN, NY 11237** **ECHO**
0.164 mi.
865 ft. **Site 15 of 16 in cluster N**

Relative:
Higher

Actual:
23 ft.

RCRA NonGen / NLR:

Date form received by agency:	07/30/2015
Facility name:	CON EDISON
Facility address:	125 THAMES ST BROOKLYN, NY 11237
EPA ID:	NYP004815615
Mailing address:	IRVING PL 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING

CON EDISON (Continued) **1019905962**

Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: 212-460-3770
Contact email: Not reported
EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 07/30/2015
Site name: CON EDISON
Classification: Large Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110069698777

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1019905962
Registry ID: 110069698777
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110069698777

N127 **CON EDISON SERVICE BOX: 7895** **RCRA NonGen / NLR** **1016972213**
SE **125 THAMES ST** **NY MANIFEST** **NYP004459764**
1/8-1/4 **BROOKLYN, NY 11237**
0.164 mi.
865 ft. **Site 16 of 16 in cluster N**

Relative:
Higher

Actual:
23 ft.

RCRA NonGen / NLR:

Date form received by agency:	04/06/2014
Facility name:	CON EDISON SERVICE BOX: 7895
Facility address:	125 THAMES ST BROOKLYN, NY 11237
EPA ID:	NYP004459764
Mailing address:	IRVING PL, 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	212-460-3770
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	03/06/2014
Site name:	CON EDISON SERVICE BOX: 7895
Classification:	Conditionally Exempt Small Quantity Generator
Violation Status:	No violations found

NY MANIFEST:

Country:	USA
EPA ID:	NYP004815615
Facility Status:	Not reported
Location Address 1:	125 THAMES ST
Code:	BP
Location Address 2:	SB 7895
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237

CON EDISON SERVICE BOX: 7895 (Continued) **1016972213**

Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYP004815615
Mailing Name: CON EDISON
Mailing Contact: DENNIS HUACON
Mailing Address 1: 4 IRVING PL 15TH FL
Mailing Address 2: Not reported
Mailing City: NEW YORK
Mailing State: NY
Mailing Zip: 10003
Mailing Zip 4: Not reported
Mailing Country: USA
Mailing Phone: 2124603770

NY MANIFEST:
Document ID: Not reported
Manifest Status: Not reported
seq: Not reported
Year: 2015
Trans1 State ID: NJD003812047
Trans2 State ID: Not reported
Generator Ship Date: 07/30/2015
Trans1 Recv Date: 07/30/2015
Trans2 Recv Date: Not reported
TSD Site Recv Date: 08/05/2015
Part A Recv Date: Not reported
Part B Recv Date: Not reported
Generator EPA ID: NYP004815615
Trans1 EPA ID: Not reported
Trans2 EPA ID: Not reported
TSDF ID 1: NJD991291105
TSDF ID 2: Not reported
Manifest Tracking Number: 002619597GBF
Import Indicator: N
Export Indicator: N
Discr Quantity Indicator: N
Discr Type Indicator: N
Discr Residue Indicator: N
Discr Partial Reject Indicator: N
Discr Full Reject Indicator: N
Manifest Ref Number: Not reported
Alt Facility RCRA ID: Not reported
Alt Facility Sign Date: Not reported
MGMT Method Type Code: H110
Waste Code: Not reported
Waste Code: Not reported
Waste Code: Not reported
Waste Code: Not reported
Waste Code: Not reported
Waste Code: Not reported
Quantity: 50
Units: G - Gallons (liquids only)* (8.3 pounds)
Number of Containers: 1
Container Type: TT - Cargo tank, tank trucks
Handling Method: T Chemical, physical, or biological treatment.
Specific Gravity: 1

CON EDISON SERVICE BOX: 7895 (Continued) **1016972213**

Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Country:	USA
EPA ID:	NYP004459764
Facility Status:	Not reported
Location Address 1:	FRONT OF 125 THAMES ST
Code:	BP
Location Address 2:	SB7895
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004459764
Mailing Name:	CON EDISON
Mailing Contact:	CON EDISION
Mailing Address 1:	4 IRVING PL
Mailing Address 2:	15TH FL
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	03/06/2014
Trans1 Recv Date:	03/06/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	03/06/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004459764
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002360241GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N

CON EDISON SERVICE BOX: 7895 (Continued) **1016972213**

Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	150
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

S128 **CON EDISON** **RCRA NonGen / NLR** **1019903169**
SW **18 GRATTAN ST** **FINDS** **NYP004782272**
1/8-1/4 **BROOKLYN, NY 11206** **ECHO**
0.166 mi.
874 ft. **Site 3 of 9 in cluster S**

Relative: **Higher**

Actual: **21 ft.**

RCRA NonGen / NLR:

Date form received by agency:	05/13/2015
Facility name:	CON EDISON
Facility address:	18 GRATTAN ST BROOKLYN, NY 11206
EPA ID:	NYP004782272
Mailing address:	IRVING PL 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	212-460-3770
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No

CON EDISON (Continued) **1019903169**

Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	05/13/2015
Site name:	CON EDISON
Classification:	Small Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110069647449

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1019903169
Registry ID:	110069647449
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110069647449

S129 **CON EDISON** **NJ MANIFEST** **S120671744**
SW **18 GRATTAN ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.166 mi.
874 ft. **Site 4 of 9 in cluster S**

Relative:
Higher

Actual:
21 ft.

NJ MANIFEST:

EPA Id:	NYP004782272
Mail Address:	IRVING PL 15TH FL NE
Mail City/State/Zip:	NEW YORK, NY 10003
Facility Phone:	Not reported
Emergency Phone:	Not reported
Contact:	THOMAS TEELING
Comments:	Not reported
SIC Code:	Not reported
County:	NY047

CON EDISON (Continued) **S120671744**

Municipal:	Not reported
Previous EPA Id:	Not reported
Gen Flag:	Not reported
Trans Flag:	Not reported
TSDF Flag:	Not reported
Name Change:	Not reported
Date Change:	Not reported

Manifest:

Manifest Number:	002624329GBF
EPA ID:	NYP004782272
Date Shipped:	5/13/2015
TSDF EPA ID:	NJD991291105
Transporter EPA ID:	NJD003812047
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	Not reported
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	Not reported
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	NEW YORK, NY 10003
Reason Load Was Rejected:	Not reported

S130 **CON EDISON** **NY MANIFEST** **S118090593**
SW **18 GRATTAN ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.166 mi.
874 ft. **Site 5 of 9 in cluster S**

Relative:
Higher

Actual:
21 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004782272
Facility Status:	Not reported
Location Address 1:	18 GRATTAN ST
Code:	BP
Location Address 2:	SB 8521
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	Not reported
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004782272
Mailing Name:	CON EDISON
Mailing Contact:	DENNIS HUACON
Mailing Address 1:	4 IRVING PL 15TH FL
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	2124603770

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2015
Trans1 State ID:	NJD003812047
Trans2 State ID:	NJD003812047
Generator Ship Date:	05/13/2015
Trans1 Recv Date:	05/13/2015
Trans2 Recv Date:	05/19/2015
TSD Site Recv Date:	05/19/2015
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004782272
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002624329GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported

CON EDISON (Continued) **S118090593**

Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	50
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

T131 **CON EDISON** **NY MANIFEST** **S119073535**
NE **VARICK AVE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.168 mi.
887 ft. **Site 1 of 7 in cluster T**

Relative: **Lower**
Actual: **13 ft.**

NY MANIFEST:

Country:	USA
EPA ID:	NYP004287884
Facility Status:	Not reported
Location Address 1:	OPP 98 VARICK AVE
Code:	BP
Location Address 2:	MH 43894
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11211
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004287884
Mailing Name:	CON EDISON
Mailing Contact:	TOM TEELING
Mailing Address 1:	4 IRVING PLACE - 15TH FLOOR
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	2124603770

CON EDISON (Continued) **S119073535**

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2013
Trans1 State ID:	NJD003812047
Trans2 State ID:	NJD003812047
Generator Ship Date:	02/08/2013
Trans1 Recv Date:	02/08/2013
Trans2 Recv Date:	02/11/2013
TSD Site Recv Date:	02/11/2013
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004287884
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002015966GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H141
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	300
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

T132
NE
1/8-1/4
0.168 mi.
887 ft.

CON EDISON - MANHOLE 43894
VARICK AVE
BROOKLYN, NY 11237

Site 2 of 7 in cluster T

RCRA-LQG **1016150117**
NYP004287884

Relative:
Lower

Actual:
13 ft.

RCRA-LQG:

Date form received by agency:	03/27/2014
Facility name:	CON EDISON - MANHOLE 43894
Facility address:	VARICK AVE BROOKLYN, NY 11237
EPA ID:	NYP004287884
Mailing address:	IRVING PLACE, 15TH FL NE NEW YORK, NY 10003
Contact:	DENNIS HUACON
Contact address:	IRVING PLACE, 15TH FL NE NEW YORK, NY 10003
Contact country:	US
Contact telephone:	212-460-2757
Contact email:	HUACOND@CONED.COM
EPA Region:	02
Classification:	Large Quantity Generator
Description:	Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:

Owner/operator name:	CONSOLIDATED EDISON COMPANY OF NY, INC.
Owner/operator address:	IRVING PLACE NEW YORK, NY 10003
Owner/operator country:	US
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	02/08/2013
Owner/Op end date:	Not reported

Owner/operator name:	CONSOLIDATED EDISON COMPANY OF NY, INC.
Owner/operator address:	IRVING PLACE NEW YORK, NY 10003
Owner/operator country:	US
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator

CON EDISON - MANHOLE 43894 (Continued) **1016150117**

Owner/Op start date: 02/08/2013
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 02/08/2013
Site name: CON EDISON MANHOLE: 43894
Classification: Conditionally Exempt Small Quantity Generator

Hazardous Waste Summary:

. Waste code: D008
. Waste name: LEAD

Violation Status: No violations found

T133 **ENEQUIST CHEMICAL** **NY AST** **A100382296**
NE **100 VARICK AVENUE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.169 mi.
892 ft. **Site 3 of 7 in cluster T**

Relative:
Lower

Actual:
13 ft.

AST:
Name: ENEQUIST CHEMICAL
Address: 100 VARICK AVENUE
City,State,Zip: BROOKLYN, NY 11237
Region: STATE
DEC Region: 2
Site Status: Unregulated/Closed
Facility Id: 2-233072
Program Type: PBS
UTM X: 590614.46233
UTM Y: 4507030.71686
Expiration Date: N/A
Site Type: Chemical Distributor

Tank Info:

Tank Number: 006
Tank Id: 66159
Tank Location: Aboveground - on saddles, legs, racks, etc.... Tank bottom is elevated above grade or tank pad, allowing visual inspection.

ENEQUIST CHEMICAL (Continued) **A100382296**

Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Closed - Removed
Pipe Model:	Not reported
Install Date:	Not reported
Capacity Gallons:	2500
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	03/21/2006
Register:	True
Modified By:	NRLOMBAR
Last Modified:	04/14/2017
Material Name:	Not reported

Tank Number:	007
Tank Id:	10958
Tank Location:	Aboveground - on saddles, legs, racks, etc.... Tank bottom is elevated above grade or tank pad, allowing visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Closed - Removed
Pipe Model:	Not reported
Install Date:	Not reported
Capacity Gallons:	1500
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	03/21/2006
Register:	True
Modified By:	NRLOMBAR
Last Modified:	04/14/2017
Material Name:	Not reported

T134 **EMEQUIFT CHEMICAL CORP - MISC** **NY LTANKS** **S118953501**
NE **100 VARICK AVE** **N/A**
1/8-1/4 **BROOKLYN, NY**
0.169 mi.
892 ft. **Site 4 of 7 in cluster T**

Relative: LTANKS:
Lower

Name:	EMEQUIFT CHEMICAL CORP - MISC
Address:	100 VARICK AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0502445 / 2006-05-31
Facility ID:	0502445
Site ID:	346803
Spill Date:	2005-05-31
Spill Cause:	Tank Failure
Spill Source:	Commercial/Industrial
Spill Class:	C4
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	rjfeng
Referred To:	MW INSTALLATION DUE 5/31/2006
Reported to Dept:	2005-05-31
CID:	407
Water Affected:	Not reported
Spill Notifier:	Federal Government

Actual:
13 ft.

EMEQUIFT CHEMICAL CORP - MISC (Continued) **S118953501**

Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	2005-05-31
Spill Record Last Update:	2006-05-31
Spiller Name:	WALTER SCHWARTZ
Spiller Company:	EMEQUIFT CHEMICAL CORP
Spiller Address:	100 BARICK AVE
Spiller County:	001
Spiller Contact:	JOESEPH CREFCENZO
Spiller Phone:	(718) 497-1200
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	293056
DEC Memo:	"Phase 1 & Phase 2 done - found petroleum mixed with paint 10.14.05 SR// Sharif rec'd the site assesment report with remedial action plan. I suggested to prepare a health & safety plan, set a time frame to complete the remedial work and installation of monitoring wells to confirm the ground water flow.Paul Stewart of ACT,Inc will forward DEC an addendum. 12/20/05-Sharif//Case was transferred to Koon Tang for reassignment since the site is going through extensive remedial activities. 1/11/2006 - Feng - File reviewed by Feng: 1) On 5/2005, ATC performed Phase I/Phase II Environmental Site Assessment (ESA) for the site, and found elevated VOCs present in soil and groundwater beneath the western portion of the sotrage yard. and the source might be the historical gasoline UST and storage of solvents. 2) On 10/25/2005, ATC proposed RAP to remediate the site. a) removal of contaminated soil beneath the storage yard, b) install monitoring wells. DEC approved the RAP. Waiting for soil excavation report, MWs installation, and groundwater sampling results. 2/1/2006 - Feng - call from Caroline Cadalso (ACT) stated that about 700 tons of soil were excavated, endpoint samples were taken. groundwater encountered at 12' and it looks like perched water. They plan to install the monitoring well deeper, down to 25'-35' bg to delineate the extend of contamination. approved. (RJF) 3/22/2006 - Feng - Remedial Closure Report, prepared by ACT, dated 3/20/2006. ACT excavated the contaminated soil from Area A, B, C and D down to depth of 12' bg. Endpoint samples show high PERC concentration found in Area B and Area D. Extend the excavation of soil in Area B, and 2nd round of soil samples show low concentration (only one were sent for lab analysis). Confirmatory samples were taken from Area D, show low concentration (only one were sent for lab analysis). 3 MWs were installed and groundwater contour were provided. Groundwater flows to northwest. Analyticals show low concentration. ACT requested spill closure. Spill closure request was denied and letter sent requiring 2 more monitoring wells in the 2 former drain. According to Phase II site assessment, high PERC has been found in former drain B (soil boring SB-3). Installtion report due 5/31/2006. 4/24/2006 - Feng - Addendum to Closure Report dated 3/20/2006, 4/5/2006 submitted by Advanced CleanUp Technologies, Inc. 2 monitoring wells were installed in the former Drain B (W-5) and former Drain D (W-4). Groundwater depth encounterred at 10'. Screen depth of 25'-35' bg. low Soil concentration. Groundwater samples show low concentration, 8.73 ppb of Trichloroethene, 11.4 ppb Tetrachloroethene and 10.9 ppb 1,2-dichloroethene in W-4. Request closure. Emailed to Caroline

EMEQUIFT CHEMICAL CORP - MISC (Continued) **S118953501**

Cadalso and inquired if it is perched or true groundwater at 10' and if we missed the groundwater at 10'-25'. (RJF) 5/31/2006 - Feng - Have been discussed with DEC Joe Sun. Spill closed for: 1) source removal, soil was excavated down to 12' bg and endpoint samples are in low concentration. 2) The groundwater encountered at about 10 feet is perched water due to low recharge. 3) The groundwater samples taken from 12' bg in Phase II is present in fill material (fill material found from 12' to 20' bg). 4) 5 Groundwater samples collected from 25' to 35' bg show low contamination (given that contaminants are PCE and TCE, deeper gw was selected). 5) Sensitive Receptor survey was done and it is fine. Spill closed and NFA issued. (RJF)"

Remarks: ""

All Materials:

Site ID:	346803
Operable Unit ID:	1104563
Operable Unit:	01
Material ID:	584786
Material Code:	0055A
Material Name:	paint
Case No.:	Not reported
Material FA:	Other
Quantity:	Not reported
Units:	G
Recovered:	.00
Oxygenate:	Not reported

Site ID:	346803
Operable Unit ID:	1104563
Operable Unit:	01
Material ID:	584785
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	Not reported
Units:	G
Recovered:	.00
Oxygenate:	Not reported

T135 **ENEQUIST CHEMICAL CO INC** **RCRA-LQG** **1000350776**
NE **100 VARICK AVE.** **NY CBS AST** **NYD002028827**
1/8-1/4 **BROOKLYN, NY 11237** **FINDS**
0.169 mi. **ECHO**
892 ft. **Site 5 of 7 in cluster T** **PA MANIFEST**
NJ MANIFEST
Relative: Lower **NY MANIFEST**

Actual: 13 ft.

RCRA-LQG:

Date form received by agency:	01/01/2007
Facility name:	ENEQUIST CHEMICAL CO INC
Facility address:	100 VARICK AVE BROOKLYN, NY 11237-1283
EPA ID:	NYD002028827
Mailing address:	VARICK AVE BROOKLYN, NY 11237

ENEQUIST CHEMICAL CO INC (Continued) **1000350776**

Contact: Not reported
Contact address: VARICK AVE
BROOKLYN, NY 11237
Contact country: US
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 02
Land type: Facility is not located on Indian land. Additional information is not known.
Classification: Large Quantity Generator
Description: Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:
Owner/operator name: THE ENEQUIST CHEMICAL CO INC
Owner/operator address: NOT REQUIRED
NOT REQUIRED, WY 99999
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: THE ENEQUIST CHEMICAL CO INC
Owner/operator address: NOT REQUIRED
NOT REQUIRED, WY 99999
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No

ENEQUIST CHEMICAL CO INC (Continued) **1000350776**

On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2006
Site name: ENEQUIST CHEMICAL CO INC
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 07/08/1999
Site name: ENEQUIST CHEMICAL CO INC
Classification: Not a generator, verified

Date form received by agency: 08/20/1980
Site name: ENEQUIST CHEMICAL CO INC
Classification: Large Quantity Generator

Hazardous Waste Summary:

. Waste code: P030
. Waste name: CYANIDES (SOLUBLE CYANIDE SALTS), NOT OTHERWISE SPECIFIED

Facility Has Received Notices of Violations:
Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 11/18/1985
Date achieved compliance: 02/12/1986
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 01/21/1986
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 06/29/2010
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

Evaluation date: 11/18/1985
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 02/12/1986
Evaluation lead agency: State

ENEQUIST CHEMICAL CO INC (Continued) **1000350776**

CBS AST:

CBS Number:	2-000027
ICS Number:	2-125129
PBS Number:	2-233072
MOSF Number:	Not reported
SPDES Number:	Not reported
Facility Status:	IN SERVICE
Facility Type:	A
Telephone:	(718) 497-1200
Facility Town:	NEW YORK CITY
Region:	STATE
Expiration Date:	04/07/2003
Total Capacity of All Active Tanks(gal):	4000
Operator:	ENEQUIST CHEMICAL CO. INC.
Emergency Contact:	WALTER SCHWARTZ
Emergency Phone:	(718) 497-1200
Owner Name:	RJR REALTY CO., LTD
Owner Address:	1500 PAERDAGET AVENUE N
Owner City,St,Zip:	BROOKLYN, NY 11236
Owner Telephone:	(718) 209-1010
Owner Type:	Corporate/Commercial
Owner Sub Type:	Not reported
Mail Name:	ENEQUIST CHEMICAL CO. INC.
Mail Contact Addr:	100 VARICK AVE.
Mail Contact Addr2:	Not reported
Mail Contact Contact:	WALTER SCHWARTZ
Mail Contact City,St,Zip:	BROOKLYN, NY 11237
Mail Phone:	(718) 497-1200

Tank Id:	007
CAS Number:	1310732
Federal ID:	Not reported
Tank Status:	In Service
Install Date:	11/88
Tank Closed:	Not reported
Capacity (Gal):	1500
Chemical:	Sodium hydroxide
Tank Location:	Indoors, Aboveground
Tank Type:	Steel/carbon steel
Total Tanks:	2
Tank Secret:	False
Tank Secondary Containment:	Vault
Tank Error Status:	No Missing Data
Date Entered:	04/07/1989
Certified Date:	02/05/2001
Substance:	Single Hazardous Substance on DEC List
Internal Protection:	None
External Protection:	Painted/Asphalt Coating
Pipe Location:	Aboveground
Pipe Type:	Double Walled Fiberglass
Pipe Internal:	None
Pipe External:	None
Pipe Flag:	None
Leak Detection:	None
Overfill Protection:	Catch Basin
Haz Percent:	50
Last Test:	Not reported

ENEQUIST CHEMICAL CO INC (Continued) **1000350776**

Due Date:	Not reported
SWIS Code:	6101
Lat/Long:	Not reported
Is Updated:	False
Renew Date:	01/04/93
Is It There:	False
Delinquent:	False
Date Expired:	04/07/95
Owner Mark:	1
Certificate Needs to be Printed:	False
Fiscal Amt for Registration Fee Correct:	True
Renewal Has Been Printed for Facility:	True
Pre-Printed Renewal App Last Printed:	01/18/2001

Tank Id:	006
CAS Number:	1310732
Federal ID:	Not reported
Tank Status:	In Service
Install Date:	10/88
Tank Closed:	Not reported
Capacity (Gal):	2500
Chemical:	Sodium hydroxide
Tank Location:	Indoors, Aboveground
Tank Type:	Steel/carbon steel
Total Tanks:	2
Tank Secret:	False
Tank Secondary Containment:	Vault
Tank Error Status:	No Missing Data
Date Entered:	04/07/1989
Certified Date:	02/05/2001
Substance:	Single Hazardous Substance on DEC List
Internal Protection:	None
External Protection:	Painted/Asphalt Coating
Pipe Location:	Aboveground
Pipe Type:	Double Walled Fiberglass
Pipe Internal:	None
Pipe External:	None
Pipe Flag:	None
Leak Detection:	None
Overfill Protection:	Catch Basin
Haz Percent:	50
Last Test:	Not reported
Due Date:	Not reported
SWIS Code:	6101
Lat/Long:	Not reported
Is Updated:	False
Renew Date:	01/04/93
Is It There:	False
Delinquent:	False
Date Expired:	04/07/95
Owner Mark:	1
Certificate Needs to be Printed:	False
Fiscal Amt for Registration Fee Correct:	True
Renewal Has Been Printed for Facility:	True
Pre-Printed Renewal App Last Printed:	01/18/2001

ENEQUIST CHEMICAL CO INC (Continued) **1000350776**

Tank Id:	005
CAS Number:	7664939
Federal ID:	Not reported
Tank Status:	In Service
Install Date:	10/79
Tank Closed:	08/92
Capacity (Gal):	6000
Chemical:	Sulfuric acid
Tank Location:	Indoors, Belowground
Tank Type:	Steel/carbon steel
Total Tanks:	2
Tank Secret:	False
Tank Secondary Containment:	Vault
Tank Error Status:	No Missing Data
Date Entered:	04/07/1989
Certified Date:	02/05/2001
Substance:	Single Hazardous Substance on DEC List
Internal Protection:	None
External Protection:	Painted/Asphalt Coating
Pipe Location:	Aboveground
Pipe Type:	Steel/Iron
Pipe Internal:	None
Pipe External:	None
Pipe Flag:	None
Leak Detection:	None
Overfill Protection:	None
Haz Percent:	93
Last Test:	Not reported
Due Date:	Not reported
SWIS Code:	6101
Lat/Long:	Not reported
Is Updated:	False
Renew Date:	01/04/93
Is It There:	False
Delinquent:	False
Date Expired:	04/07/95
Owner Mark:	1
Certificate Needs to be Printed:	False
Fiscal Amt for Registration Fee Correct:	True
Renewal Has Been Printed for Facility:	True
Pre-Printed Renewal App Last Printed:	01/18/2001

Tank Id:	003
CAS Number:	7647010
Federal ID:	Not reported
Tank Status:	In Service
Install Date:	07/61
Tank Closed:	08/92
Capacity (Gal):	3000
Chemical:	Hydrochloric acid
Tank Location:	Indoors, Aboveground
Tank Type:	Steel/carbon steel
Total Tanks:	2
Tank Secret:	False
Tank Secondary Containment:	Vault
Tank Error Status:	No Missing Data

ENEQUIST CHEMICAL CO INC (Continued) **1000350776**

Date Entered:	04/07/1989
Certified Date:	02/05/2001
Substance:	Single Hazardous Substance on DEC List
Internal Protection:	Rubber Liner
External Protection:	Painted/Asphalt Coating
Pipe Location:	Aboveground
Pipe Type:	Double Walled Fiberglass
Pipe Internal:	None
Pipe External:	None
Pipe Flag:	None
Leak Detection:	None
Overfill Protection:	None
Haz Percent:	100
Last Test:	Not reported
Due Date:	Not reported
SWIS Code:	6101
Lat/Long:	Not reported
Is Updated:	False
Renew Date:	01/04/93
Is It There:	False
Delinquent:	False
Date Expired:	04/07/95
Owner Mark:	1
Certificate Needs to be Printed:	False
Fiscal Amt for Registration Fee Correct:	True
Renewal Has Been Printed for Facility:	True
Pre-Printed Renewal App Last Printed:	01/18/2001

Tank Id:	001
CAS Number:	7697372
Federal ID:	Not reported
Tank Status:	In Service
Install Date:	07/61
Tank Closed:	08/92
Capacity (Gal):	3000
Chemical:	Nitric acid
Tank Location:	Indoors, Belowground
Tank Type:	Stainless steel alloy
Total Tanks:	2
Tank Secret:	False
Tank Secondary Containment:	Vault
Tank Error Status:	No Missing Data
Date Entered:	04/07/1989
Certified Date:	02/05/2001
Substance:	Single Hazardous Substance on DEC List
Internal Protection:	None
External Protection:	None
Pipe Location:	Aboveground
Pipe Type:	Wrapped Steel
Pipe Internal:	None
Pipe External:	None
Pipe Flag:	None
Leak Detection:	None
Overfill Protection:	None
Haz Percent:	67
Last Test:	Not reported

ENEQUIST CHEMICAL CO INC (Continued) **1000350776**

Due Date:	Not reported
SWIS Code:	6101
Lat/Long:	Not reported
Is Updated:	False
Renew Date:	01/04/93
Is It There:	False
Delinquent:	False
Date Expired:	04/07/95
Owner Mark:	1
Certificate Needs to be Printed:	False
Fiscal Amt for Registration Fee Correct:	True
Renewal Has Been Printed for Facility:	True
Pre-Printed Renewal App Last Printed:	01/18/2001

Tank Id:	004
CAS Number:	1310732
Federal ID:	Not reported
Tank Status:	In Service
Install Date:	07/61
Tank Closed:	08/92
Capacity (Gal):	3000
Chemical:	Sodium hydroxide
Tank Location:	Indoors, Belowground
Tank Type:	Steel/carbon steel
Total Tanks:	2
Tank Secret:	False
Tank Secondary Containment:	Vault
Tank Error Status:	No Missing Data
Date Entered:	04/07/1989
Certified Date:	02/05/2001
Substance:	Single Hazardous Substance on DEC List
Internal Protection:	None
External Protection:	Painted/Asphalt Coating
Pipe Location:	Aboveground
Pipe Type:	Steel/Iron
Pipe Internal:	None
Pipe External:	None
Pipe Flag:	None
Leak Detection:	None
Overfill Protection:	None
Haz Percent:	25
Last Test:	Not reported
Due Date:	Not reported
SWIS Code:	6101
Lat/Long:	Not reported
Is Updated:	False
Renew Date:	01/04/93
Is It There:	False
Delinquent:	False
Date Expired:	04/07/95
Owner Mark:	1
Certificate Needs to be Printed:	False
Fiscal Amt for Registration Fee Correct:	True
Renewal Has Been Printed for Facility:	True
Pre-Printed Renewal App Last Printed:	01/18/2001

ENEQUIST CHEMICAL CO INC (Continued) **1000350776**

Tank Id:	002
CAS Number:	7647010
Federal ID:	Not reported
Tank Status:	In Service
Install Date:	03/74
Tank Closed:	08/92
Capacity (Gal):	6000
Chemical:	Hydrochloric acid
Tank Location:	Indoors, Aboveground
Tank Type:	Fiberglass coated steel
Total Tanks:	2
Tank Secret:	False
Tank Secondary Containment:	Vault
Tank Error Status:	No Missing Data
Date Entered:	04/07/1989
Certified Date:	02/05/2001
Substance:	Single Hazardous Substance on DEC List
Internal Protection:	None
External Protection:	None
Pipe Location:	Aboveground
Pipe Type:	Double Walled Fiberglass
Pipe Internal:	None
Pipe External:	None
Pipe Flag:	None
Leak Detection:	None
Overfill Protection:	None
Haz Percent:	31
Last Test:	Not reported
Due Date:	Not reported
SWIS Code:	6101
Lat/Long:	Not reported
Is Updated:	False
Renew Date:	01/04/93
Is It There:	False
Delinquent:	False
Date Expired:	04/07/95
Owner Mark:	1
Certificate Needs to be Printed:	False
Fiscal Amt for Registration Fee Correct:	True
Renewal Has Been Printed for Facility:	True
Pre-Printed Renewal App Last Printed:	01/18/2001

FINDS:

Registry ID: 110000323551

Environmental Interest/Information System

US EPA TRIS (Toxics Release Inventory System) contains information from facilities on the amounts of over 300 listed toxic chemicals that these facilities release directly to air, water, land, or that are transported off-site.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and

ENEQUIST CHEMICAL CO INC (Continued) **1000350776**

corrective action activities required under RCRA.

FIS (New York - Facility Information System) is New York's Department of Environmental Conservation (DEC) information system for tracking environmental facility information found across the State.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000350776
Registry ID:	110000323551
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110000323551

Manifest Details:

Year:	2006
Manifest Number:	PAH320646
Manifest Type:	TSD Copy
Generator EPA Id:	NYD002028827
Generator Date:	06/30/2006
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	Not reported
TSD EPA Id:	PAD067098822
TSD Date:	Not reported
TSD Facility Name:	CYCLE CHEM INC
TSD Facility Address:	550 INDUSTRIAL DRIVE
TSD Facility City:	LEWISBERRY
TSD Facility State:	PA
Facility Telephone:	718-497-1200
Page Number:	1
Line Number:	1
Waste Number:	D002
Container Number:	1
Container Type:	Metal drums, barrels, kegs
Waste Quantity:	55
Unit:	Gallons (liquids only)
Handling Code:	Not reported
TSP EPA Id:	Not reported
Date TSP Sig:	Not reported

Year:	2006
Manifest Number:	PAH320646
Manifest Type:	TSD Copy
Generator EPA Id:	NYD002028827
Generator Date:	06/30/2006
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	Not reported
TSD EPA Id:	PAD067098822
TSD Date:	Not reported
TSD Facility Name:	CYCLE CHEM INC
TSD Facility Address:	550 INDUSTRIAL DRIVE

ENEQUIST CHEMICAL CO INC (Continued) **1000350776**

TSD Facility City:	LEWISBERRY
TSD Facility State:	PA
Facility Telephone:	718-497-1200
Page Number:	1
Line Number:	1
Waste Number:	D005
Container Number:	1
Container Type:	Metal drums, barrels, kegs
Waste Quantity:	55
Unit:	Gallons (liquids only)
Handling Code:	Not reported
TSP EPA Id:	Not reported
Date TSP Sig:	Not reported

NJ MANIFEST:

EPA Id:	NYD002028827
Mail Address:	Not reported
Mail City/State/Zip:	Not reported
Facility Phone:	Not reported
Emergency Phone:	Not reported
Contact:	Not reported
Comments:	Not reported
SIC Code:	Not reported
County:	00
Municipal:	00
Previous EPA Id:	Not reported
Gen Flag:	Not reported
Trans Flag:	X
TSDF Flag:	Not reported
Name Change:	Not reported
Date Change:	Not reported

Manifest:

Manifest Number:	NJA5312788
EPA ID:	NYD002028827
Date Shipped:	03/29/2006
TSDF EPA ID:	NJD002200046
Transporter EPA ID:	NJ0000027193
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	03/29/2006
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported

ENEQUIST CHEMICAL CO INC (Continued) **1000350776**

Date TSDF Received Waste:	03/29/2006
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	06220621
Was Load Rejected:	No
Reason Load Was Rejected:	Not reported

Manifest Number:	NJA2829650
EPA ID:	NYD002028827
Date Shipped:	04/03/2006
TSDF EPA ID:	NJD002200046
Transporter EPA ID:	NJ0000027193
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	04/03/2006
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	04/03/2006
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	06080622
Was Load Rejected:	No
Reason Load Was Rejected:	Not reported

ENEQUIST CHEMICAL CO INC (Continued) **1000350776**

Manifest Number:	NJA5312763
EPA ID:	NYD002028827
Date Shipped:	03/31/2006
TSDF EPA ID:	NJD002200046
Transporter EPA ID:	NJ0000027193
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	03/31/2006
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	04/04/2006
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	06220621
Was Load Rejected:	No
Reason Load Was Rejected:	Not reported

Manifest Number:	NJA2829648
EPA ID:	NYD002028827
Date Shipped:	04/03/2006
TSDF EPA ID:	NJD002200046
Transporter EPA ID:	NJ0000027193
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	04/03/2006
Date Trans2 Transported Waste:	Not reported

ENEQUIST CHEMICAL CO INC (Continued) **1000350776**

Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	04/03/2006
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	06080622
Was Load Rejected:	No
Reason Load Was Rejected:	Not reported

Manifest Number:	NJA5312765
EPA ID:	NYD002028827
Date Shipped:	03/29/2006
TSDF EPA ID:	NJD002200046
Transporter EPA ID:	NJ0000027193
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	03/29/2006
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	03/29/2006
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported

ENEQUIST CHEMICAL CO INC (Continued) **1000350776**

Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	06140622
Was Load Rejected:	No
Reason Load Was Rejected:	Not reported
Manifest Number:	NJA5312786
EPA ID:	NYD002028827
Date Shipped:	03/31/2006
TSDF EPA ID:	NJD002200046
Transporter EPA ID:	NJ0000027193
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	03/31/2006
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	04/04/2006
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	05310635
Was Load Rejected:	No
Reason Load Was Rejected:	Not reported
Manifest Number:	NJA5312764
EPA ID:	NYD002028827
Date Shipped:	03/29/2006
TSDF EPA ID:	NJD002200046
Transporter EPA ID:	NJ0000027193
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported

ENEQUIST CHEMICAL CO INC (Continued) **1000350776**

Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	03/29/2006
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	03/29/2006
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	06140622
Was Load Rejected:	No
Reason Load Was Rejected:	Not reported

Manifest Number:	NJA5312766
EPA ID:	NYD002028827
Date Shipped:	03/29/2006
TSDF EPA ID:	NJD002200046
Transporter EPA ID:	NJ0000027193
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	03/29/2006
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported

ENEQUIST CHEMICAL CO INC (Continued) **1000350776**

Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	03/29/2006
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	06140622
Was Load Rejected:	No
Reason Load Was Rejected:	Not reported

Manifest Number:	NJA2829649
EPA ID:	NYD002028827
Date Shipped:	04/03/2006
TSDF EPA ID:	NJD002200046
Transporter EPA ID:	NJ0000027193
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	04/03/2006
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	04/03/2006
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	06080622
Was Load Rejected:	No

ENEQUIST CHEMICAL CO INC (Continued) **1000350776**

Reason Load Was Rejected:	Not reported
Manifest Number:	NJA5312787
EPA ID:	NYD002028827
Date Shipped:	03/29/2006
TSDF EPA ID:	NJD002200046
Transporter EPA ID:	NJ0000027193
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	03/29/2006
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	03/29/2006
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	06140622
Was Load Rejected:	No
Reason Load Was Rejected:	Not reported

NY MANIFEST:

Country:	USA
EPA ID:	NYD002028827
Facility Status:	Not reported
Location Address 1:	100 VARICK AVENUE
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

ENEQUIST CHEMICAL CO INC (Continued) **1000350776**

NY MANIFEST:

EPAID:	NYD002028827
Mailing Name:	ENEQUIST CHEMICAL COMPANY INCORPORATED
Mailing Contact:	WALTER SCHWARTZ
Mailing Address 1:	100 VARICK AVENUE
Mailing Address 2:	Not reported
Mailing City:	BROOKLYN
Mailing State:	NY
Mailing Zip:	11237
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	7184971200

NY MANIFEST:

Document ID:	PAH0320646
Manifest Status:	Not reported
seq:	01
Year:	2006
Trans1 State ID:	NJ0000027193
Trans2 State ID:	NJ0000027193
Generator Ship Date:	06/30/2006
Trans1 Recv Date:	06/30/2006
Trans2 Recv Date:	07/10/2006
TSD Site Recv Date:	07/11/2006
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYD002028827
Trans1 EPA ID:	0299
Trans2 EPA ID:	0299
TSDF ID 1:	PAD067098822
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	D005 - BARIUM 100.0 MG/L TCLP
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	00055
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	001
Container Type:	DM - Metal drums, barrels
Handling Method:	L Landfill.
Specific Gravity:	01.00

ENEQUIST CHEMICAL CO INC (Continued) **1000350776**

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

T136 **ENEQUIST CHEMICAL CO. INC.** **NY CBS** **S106971941**
NE **100 VARICK AVENUE** **NY Spills** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.169 mi.
892 ft. **Site 6 of 7 in cluster T**

Relative: **Lower**

Actual: **13 ft.**

CBS:

Name:	ENEQUIST CHEMICAL CO. INC.
Address:	100 VARICK AVENUE
City,State,Zip:	BROOKLYN, NY 11237
CBS Number:	2-000027
Program Type:	CBS
Facility Status:	Unregulated/Closed
Expiration Date:	Not reported
Dec Region:	2
UTMX:	590606.88886
UTMY:	4507068.33341

SPILLS:

Name:	100 VARICK/ENEQUIST CHEM
Address:	100 VARICK ST
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9202219 / 1994-11-23
Facility ID:	9202219
Facility Type:	ER
DER Facility ID:	258768
Site ID:	321213
DEC Region:	2
Spill Cause:	Housekeeping
Spill Class:	C4
SWIS:	2401
Spill Date:	1992-05-22
Investigator:	SIGONA
Referred To:	Not reported
Reported to Dept:	1992-05-22
CID:	Not reported
Water Affected:	Not reported
Spill Source:	Non Major Facility > 1,100 gal
Spill Notifier:	Local Agency
Cleanup Ceased:	1994-11-23
Cleanup Meets Std:	True
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	1992-05-29
Spill Record Last Update:	2002-11-01
Spiller Name:	Not reported
Spiller Company:	Not reported
Spiller Address:	Not reported
Spiller Company:	001
Contact Name:	Not reported
DEC Memo:	""
Remarks:	"FD & DEP HAZ MAT TEAMS ON SCENE; WATER VAPOR AND CLOUD OBSERVED."

ENEQUIST CHEMICAL CO. INC. (Continued) **S106971941**

All Materials:

Site ID:	321213
Operable Unit ID:	966307
Operable Unit:	01
Material ID:	413486
Material Code:	0066A
Material Name:	unknown petroleum
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	-1.00
Units:	L
Recovered:	.00
Oxygenate:	Not reported

Q137 **CON EDISON SERVICE BOX: 16117** **RCRA NonGen / NLR** **1017772512**
SSW **MORGAN AVE & THAMES ST** **FINDS** **NYP004494712**
1/8-1/4 **BROOKLYN, NY 11237**
0.170 mi.
899 ft. **Site 8 of 15 in cluster Q**

Relative:
Higher

Actual:
27 ft.

RCRA NonGen / NLR:

Date form received by agency:	05/09/2014
Facility name:	CON EDISON SERVICE BOX: 16117
Facility address:	MORGAN AVE & THAMES ST BROOKLYN, NY 11237
EPA ID:	NYP004494712
Mailing address:	IRVING PL, 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	212-460-3770
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

CON EDISON SERVICE BOX: 16117 (Continued) **1017772512**

Historical Generators:
Date form received by agency: 04/09/2014
Site name: CON EDISON
Classification: Small Quantity Generator

Date form received by agency: 04/09/2014
Site name: CON EDISON
Classification: Not a generator, verified

Violation Status: No violations found

FINDS:

Registry ID: 110063780902

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

Q138 **CON EDISON** **NY MANIFEST** **S116551036**
SSW **MORGAN AVE & THAMES ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.170 mi.
899 ft. **Site 9 of 15 in cluster Q**

Relative:
Higher

Actual:
27 ft.

NY MANIFEST:
Country: USA
EPA ID: NYP004494712
Facility Status: Not reported
Location Address 1: N/W OF MORGAN AVE & THAMES ST
Code: BP
Location Address 2: SERVICE BOX # 16117
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: 11222
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYP004494712
Mailing Name: CON EDISON
Mailing Contact: TOM TEELING
Mailing Address 1: 4 IRVING PLACE 15TH FLOOR
Mailing Address 2: Not reported
Mailing City: NEW YORK
Mailing State: NY
Mailing Zip: 10003
Mailing Zip 4: Not reported
Mailing Country: USA
Mailing Phone: 2124603770

CON EDISON (Continued) **S116551036**

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	04/09/2014
Trans1 Recv Date:	04/09/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	04/09/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004494712
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002407643GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	60
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

Q139 **CON EDISON** **NY MANIFEST** **S117062072**
South **52 THAMES ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.173 mi.
914 ft. **Site 10 of 15 in cluster Q**

Relative:
Higher

Actual:
28 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004544029
Facility Status:	Not reported
Location Address 1:	52 THAMES ST
Code:	BP
Location Address 2:	SB 7893
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004544029
Mailing Name:	CON EDISON
Mailing Contact:	TOM TEELING
Mailing Address 1:	4 IRVING PLACE 15TH FLOOR
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	05/27/2014
Trans1 Recv Date:	05/27/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	05/29/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004544029
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002423161GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported

CON EDISON (Continued) **S117062072**

Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	80
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

Q140 **CON EDISON SERVICE BOX: 7893** **RCRA NonGen / NLR** **1017772015**
South **52 THAMES ST** **NYP004489621**
1/8-1/4 **BROOKLYN, NY 11237**
0.173 mi.
914 ft. **Site 11 of 15 in cluster Q**

Relative: **Higher**

Actual: **28 ft.**

RCRA NonGen / NLR:

Date form received by agency:	05/04/2014
Facility name:	CON EDISON SERVICE BOX: 7893
Facility address:	52 THAMES ST BROOKLYN, NY 11237
EPA ID:	NYP004489621
Mailing address:	IRVING PL, 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	212-460-3770
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No

CON EDISON SERVICE BOX: 7893 (Continued) **1017772015**

On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 04/04/2014
Site name: CON EDISON
Classification: Small Quantity Generator

Date form received by agency: 04/04/2014
Site name: CON EDISON
Classification: Not a generator, verified

Violation Status: No violations found

Q141 **CON EDISON SERVICE BOX: 7893** **RCRA NonGen / NLR** **1017776542**
South **52 THAMES ST** **FINDS** **NYP004544029**
1/8-1/4 **BROOKLYN, NY 11237**
0.173 mi.
914 ft. **Site 12 of 15 in cluster Q**

Relative:
Higher

Actual:
28 ft.

RCRA NonGen / NLR:
Date form received by agency: 06/27/2014
Facility name: CON EDISON SERVICE BOX: 7893
Facility address: 52 THAMES ST
BROOKLYN, NY 11237
EPA ID: NYP004544029
Mailing address: IRVING PL, 15TH FL NE
NEW YORK, NY 10003
Contact: THOMAS TEELING
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: 212-460-3770
Contact email: Not reported
EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No

CON EDISON SERVICE BOX: 7893 (Continued) **1017776542**

Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 05/27/2014
Site name: CON EDISON
Classification: Small Quantity Generator

Date form received by agency: 05/27/2014
Site name: CON EDISON
Classification: Not a generator, verified

Violation Status: No violations found

FINDS:

Registry ID: 110063806305

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

Q142 **CON EDISION** **NY MANIFEST** **S116550574**
South **52 THAMES ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.173 mi.
914 ft. **Site 13 of 15 in cluster Q**

Relative:
Higher

Actual:
28 ft.

NY MANIFEST:
Country: USA
EPA ID: NYP004489621
Facility Status: Not reported
Location Address 1: 53 THAMES ST
Code: BP
Location Address 2: SB7892
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: 11237
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYP004489621
Mailing Name: CON EDISION
Mailing Contact: CON EDISION
Mailing Address 1: 4 IRVING PL
Mailing Address 2: 15TH FL
Mailing City: NEW YORK
Mailing State: NY

CON EDISION (Continued) **S116550574**

Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	04/04/2014
Trans1 Recv Date:	04/04/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	04/04/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004489621
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002361106GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	80
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

CON EDISION (Continued) **S116550574**

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

R143 **MORGAN SCHOLES PROPERTIES** **NY AST** **U004078793**
NW **165 MORGAN AVENSUE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.173 mi.
916 ft. **Site 4 of 5 in cluster R**

Relative:
Lower

Actual:
14 ft.

AST:

Name:	MORGAN SCHOLES PROPERTIES
Address:	165 MORGAN AVENSUE
City,State,Zip:	BROOKLYN, NY 11237
Region:	STATE
DEC Region:	2
Site Status:	Active
Facility Id:	2-608698
Program Type:	PBS
UTM X:	590108.29023
UTM Y:	4507081.07212
Expiration Date:	03/31/2008
Site Type:	Manufacturing (Other than Chemical)/Processing

Affiliation Records:

Site Id:	30550
Affiliation Type:	Facility Owner
Company Name:	MORGAN SCHOLES PROPERTIES
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	165 MORGAN AVE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(718) 386-8030
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	30550
Affiliation Type:	Mail Contact
Company Name:	MORGAN SCHOLES PROPERTIES
Contact Type:	Not reported
Contact Name:	BRUCE ENGEL
Address1:	165 MORGAN AVENUE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(718) 386-8030
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

MORGAN SCHOLES PROPERTIES (Continued) **U004078793**

Site Id:	30550
Affiliation Type:	Facility Operator
Company Name:	MORGAN SCHOLES PROPERTIES
Contact Type:	Not reported
Contact Name:	BRUCE ENGEL
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 386-8030
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	30550
Affiliation Type:	Emergency Contact
Company Name:	MORGAN SCHOLES PROPERTIES
Contact Type:	Not reported
Contact Name:	BRUCE ENTEL
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 386-8030
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	001
Tank Id:	65538
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Equipment Records:

C03 - Pipe Location - Aboveground/Underground Combination
H00 - Tank Leak Detection - None
I00 - Overfill - None
A01 - Tank Internal Protection - Epoxy Liner
G03 - Tank Secondary Containment - Vault (w/o access)
B00 - Tank External Protection - None
F00 - Pipe External Protection - None
J00 - Dispenser - None
D00 - Pipe Type - No Piping

Tank Location:	Aboveground in subterranean vault with access for inspections..... Tank in subterranean vault but accessible for inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	In Service
Pipe Model:	Not reported

MORGAN SCHOLES PROPERTIES (Continued) **U004078793**

Install Date:	Not reported
Capacity Gallons:	2000
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	Not reported
Register:	True
Modified By:	TRANSLAT
Last Modified:	04/14/2017
Material Name:	#2 fuel oil (on-site consumption)

P144 **MILHAW REALTY CORPORATION** **NY AST** **A100300783**
WSW **2-40 INGRAHAM STREET** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.176 mi.
928 ft. **Site 3 of 3 in cluster P**

Relative:
Higher

Actual:
19 ft.

AST:

Name:	MILHAW REALTY CORPORATION
Address:	2-40 INGRAHAM STREET
City,State,Zip:	BROOKLYN, NY 11206
Region:	STATE
DEC Region:	2
Site Status:	Unregulated/Closed
Facility Id:	2-603519
Program Type:	PBS
UTM X:	590127.52715
UTM Y:	4506724.61062
Expiration Date:	N/A
Site Type:	Unknown

Affiliation Records:

Site Id:	25435
Affiliation Type:	Facility Owner
Company Name:	MILHAW REALTY CORPORATION
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	2 INGRAHAM STREET
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11206
Country Code:	001
Phone:	(212) 972-8600
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	25435
Affiliation Type:	Mail Contact
Company Name:	MILHAW REALTY CORPORATION
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	C/O KARL SAVRYN
Address2:	330 MADISON AVENUE, 14TH FLOOR
City:	NEW YORK
State:	NY

MILHAW REALTY CORPORATION (Continued) **A100300783**

Zip Code:	10017
Country Code:	001
Phone:	(212) 972-8600
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	25435
Affiliation Type:	Facility Operator
Company Name:	MILHAW REALTY CORPORATION
Contact Type:	Not reported
Contact Name:	MR. STRAMAN
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 381-4400
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	25435
Affiliation Type:	Emergency Contact
Company Name:	MILHAW REALTY CORPORATION
Contact Type:	Not reported
Contact Name:	KARL SARYAN
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(212) 972-8603
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	1ABG
Tank Id:	54646
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Equipment Records:

B00 - Tank External Protection - None
F00 - Pipe External Protection - None
J02 - Dispenser - Suction Dispenser
G00 - Tank Secondary Containment - None
I00 - Overfill - None
H00 - Tank Leak Detection - None

MILHAW REALTY CORPORATION (Continued) **A100300783**

C01 - Pipe Location - Aboveground
D01 - Pipe Type - Steel/Carbon Steel/Iron
A00 - Tank Internal Protection - None

Tank Location:	Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Closed - Removed
Pipe Model:	Not reported
Install Date:	Not reported
Capacity Gallons:	3000
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	03/01/1998
Register:	True
Modified By:	TRANSLAT
Last Modified:	04/14/2017
Material Name:	#2 fuel oil (on-site consumption)

Tank Number:	2ABG
Tank Id:	54647
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Equipment Records:

B00 - Tank External Protection - None
F00 - Pipe External Protection - None
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
H00 - Tank Leak Detection - None
I00 - Overfill - None
C01 - Pipe Location - Aboveground
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Location:	Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Closed - Removed
Pipe Model:	Not reported
Install Date:	Not reported
Capacity Gallons:	3000
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	03/01/1998
Register:	True
Modified By:	TRANSLAT
Last Modified:	04/14/2017
Material Name:	#2 fuel oil (on-site consumption)

Tank Number:	3ABG
Tank Id:	54648
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

MILHAW REALTY CORPORATION (Continued) **A100300783**

Equipment Records:

B00 - Tank External Protection - None
F00 - Pipe External Protection - None
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
H00 - Tank Leak Detection - None
I00 - Overfill - None
C01 - Pipe Location - Aboveground
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Location:	Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Closed - Removed
Pipe Model:	Not reported
Install Date:	Not reported
Capacity Gallons:	3000
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	03/01/1998
Register:	True
Modified By:	TRANSLAT
Last Modified:	04/14/2017
Material Name:	#2 fuel oil (on-site consumption)
Tank Number:	4ABG
Tank Id:	54649
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
B00 - Tank External Protection - None
F00 - Pipe External Protection - None
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
C01 - Pipe Location - Aboveground
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Location:	Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Closed - Removed
Pipe Model:	Not reported
Install Date:	Not reported
Capacity Gallons:	3000
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	03/01/1998
Register:	True
Modified By:	TRANSLAT
Last Modified:	04/14/2017

MILHAW REALTY CORPORATION (Continued) **A100300783**

Material Name: #2 fuel oil (on-site consumption)

U145 **CON EDISON** **NY MANIFEST** **S116550302**
SSE **120 KNICKERBOCKER AVE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.183 mi.
965 ft. **Site 1 of 9 in cluster U**

Relative:
Higher

Actual:
27 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004486569
Facility Status:	Not reported
Location Address 1:	129 KNICKERBOCKER AV
Code:	BP
Location Address 2:	SB73354
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11201
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004486569
Mailing Name:	CON EDISON
Mailing Contact:	CON EDISION
Mailing Address 1:	4 IRVING PL
Mailing Address 2:	15TH FL
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	04/02/2014
Trans1 Recv Date:	04/02/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	04/03/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004486569
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002407008GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N

CON EDISON (Continued) **S116550302**

Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	40
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

U146 **CON EDISON SERVICE BOX: 73354** **RCRA NonGen / NLR** **1017771715**
SSE **120 KNICKERBOCKER AVE** **FINDS** **NYP004486569**
1/8-1/4 **BROOKLYN, NY 11237**
0.183 mi.
965 ft. **Site 2 of 9 in cluster U**

Relative: **Higher**

Actual: **27 ft.**

RCRA NonGen / NLR:

Date form received by agency:	05/02/2014
Facility name:	CON EDISON SERVICE BOX: 73354
Facility address:	120 KNICKERBOCKER AVE BROOKLYN, NY 11237
EPA ID:	NYP004486569
Mailing address:	IRVING PL, 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	212-460-3770
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No

CON EDISON SERVICE BOX: 73354 (Continued) **1017771715**

Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	04/02/2014
Site name:	CON EDISON
Classification:	Small Quantity Generator

Date form received by agency:	04/02/2014
Site name:	CON EDISON
Classification:	Not a generator, verified

Violation Status: No violations found

FINDS:

Registry ID: 110063790660

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

U147 **CON EDISON - MANHOLE 56105** **NY MANIFEST** **S120957930**
SSE **1087 FLUSHING AVE** **N/A**
1/8-1/4 **BROOKLN, NY 11237**
0.183 mi.
967 ft. **Site 3 of 9 in cluster U**

Relative:
Higher

Actual:
26 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004894628
Facility Status:	Not reported
Location Address 1:	1087 FLUSHING AVE
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

CON EDISON - MANHOLE 56105 (Continued) **S120957930**

NY MANIFEST:

EPAID:	NYP004894628
Mailing Name:	CON EDISON - MANHOLE 56105
Mailing Contact:	CON EDISON
Mailing Address 1:	4 IRVING PL 15TH FL NE
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

U148 **1087 FLUSHING AVE** **NY UST** **U004244790**
SSE **1087 FLUSHING AVENUE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.183 mi.
967 ft. **Site 4 of 9 in cluster U**

Relative:
Higher

Actual:
26 ft.

UST:

Name:	1087 FLUSHING AVE
Address:	1087 FLUSHING AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Id/Status:	2-612503 / Unregulated/Closed
Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	N/A
UTM X:	590519.13006
UTM Y:	4506556.34250
Site Type:	Other

Affiliation Records:

Site Id:	517768
Affiliation Type:	Facility Owner
Company Name:	FPTK LLC
Contact Type:	MEMBER
Contact Name:	ABRAHAM HOFFMAN
Address1:	PO BOX 180075
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11218
Country Code:	001
Phone:	(718) 417-1616
EMail:	Not reported
Fax Number:	Not reported
Modified By:	CGFREEDM
Date Last Modified:	2015-12-08

Site Id:	517768
Affiliation Type:	Mail Contact
Company Name:	FPTK LLC
Contact Type:	Not reported

1087 FLUSHING AVE (Continued) **U004244790**

Contact Name:	Not reported
Address1:	P.O. BOX 180075
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11218
Country Code:	001
Phone:	(718) 417-1616
EMail:	THELOOM@BUSHBURG.COM
Fax Number:	Not reported
Modified By:	NTFREEMA
Date Last Modified:	2015-12-11

Site Id:	517768
Affiliation Type:	Facility Operator
Company Name:	1087 FLUSHING AVE
Contact Type:	Not reported
Contact Name:	N/A
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 417-1616
EMail:	Not reported
Fax Number:	Not reported
Modified By:	CGFREEDM
Date Last Modified:	2015-12-08

Site Id:	517768
Affiliation Type:	Emergency Contact
Company Name:	FPTK LLC
Contact Type:	Not reported
Contact Name:	ISRAEL HIRSCH
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 930-2642
EMail:	Not reported
Fax Number:	Not reported
Modified By:	CGFREEDM
Date Last Modified:	2015-12-08

Tank Info:

Tank Number:	01
Tank ID:	259890
Tank Status:	Closed - In Place
Material Name:	Closed - In Place
Capacity Gallons:	2000
Install Date:	02/18/1971
Date Tank Closed:	09/22/2015
Registered:	True

1087 FLUSHING AVE (Continued) **U004244790**

Tank Location: Underground
Tank Type: Steel/carbon steel
Tightness Test Method: 21
Date Test: 09/22/2015
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: BKFALVEY
Last Modified: 04/14/2017

Equipment Records:

J00 - Dispenser - None
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
E00 - Piping Secondary Containment - None
G00 - Tank Secondary Containment - None
L00 - Piping Leak Detection - None
D00 - Pipe Type - No Piping
K00 - Spill Prevention - None
A00 - Tank Internal Protection - None

V149 **AINSLEY LAMP MAN CO INC** **RCRA NonGen / NLR** **1000383235**
SE **1099 FLUSHING AVE** **NY MANIFEST** **NYD001385848**
1/8-1/4 **BROOKLYN, NY 11237**
0.185 mi.
978 ft. **Site 1 of 5 in cluster V**

Relative:
Higher

Actual:
25 ft.

RCRA NonGen / NLR:
Date form received by agency: 01/01/2007
Facility name: AINSLEY LAMP MAN CO INC
Facility address: 1099 FLUSHING AVE
BROOKLYN, NY 11237-1830
EPA ID: NYD001385848
Mailing address: 91ST AVE
RICHMOND HILL, NY 11418
Contact: Not reported
Contact address: 91ST AVE
RICHMOND HILL, NY 11418
Contact country: US
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 02
Land type: Private
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: BANK LEUMI- MORTGAGE AINSLEY LMP
Owner/operator address: 1099 FLUSHING AVE
BROOKLYN, NY 11237
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private

AINSLEY LAMP MAN CO INC (Continued) **1000383235**

Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: BANK LEUMI- MORTGAGE AINSLEY LMP
Owner/operator address: 1099 FLUSHING AVE
BROOKLYN, NY 11237
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2006
Site name: AINSLEY LAMP MAN CO INC
Classification: Not a generator, verified

Date form received by agency: 07/08/1999
Site name: AINSLEY LAMP MAN CO INC
Classification: Not a generator, verified

Date form received by agency: 10/01/1991
Site name: AINSLEY LAMP MAN CO INC
Classification: Large Quantity Generator

Hazardous Waste Summary:

. Waste code: D000
. Waste name: Not Defined

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002

AINSLEY LAMP MAN CO INC (Continued) **1000383235**

. Waste name: CORROSIVE WASTE

. Waste code: D003
. Waste name: REACTIVE WASTE

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D006
. Waste name: CADMIUM

. Waste code: F007
. Waste name: SPENT CYANIDE PLATING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS.

. Waste code: F008
. Waste name: PLATING BATH RESIDUES FROM THE BOTTOM OF PLATING BATHS FROM ELECTROPLATING OPERATIONS IN WHICH CYANIDES ARE USED IN THE PROCESS.

. Waste code: F009
. Waste name: SPENT STRIPPING AND CLEANING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS IN WHICH CYANIDES ARE USED IN THE PROCESS.

Violation Status: No violations found

Evaluation Action Summary:
Evaluation date: 10/01/1991
Evaluation: FOCUSED COMPLIANCE INSPECTION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

NY MANIFEST:
Country: USA
EPA ID: NYD001385848
Facility Status: Not reported
Location Address 1: 1099 FLUSHING AVE
Code: BP
Location Address 2: Not reported
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: 11237
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYD001385848
Mailing Name: AINSLEY LAMP CO
Mailing Contact: AINSLEY LAMP CO
Mailing Address 1: 1099 FLUSHING AVENUE
Mailing Address 2: Not reported
Mailing City: BROOKLYN
Mailing State: NY
Mailing Zip: 11237
Mailing Zip 4: Not reported
Mailing Country: USA
Mailing Phone: 7183665400

AINSLEY LAMP MAN CO INC (Continued) **1000383235**

NY MANIFEST:

Document ID:	NYB5872473
Manifest Status:	C
seq:	Not reported
Year:	1991
Trans1 State ID:	XC2643
Trans2 State ID:	Not reported
Generator Ship Date:	12/24/1991
Trans1 Recv Date:	12/24/1991
Trans2 Recv Date:	/ /
TSD Site Recv Date:	12/24/1991
Part A Recv Date:	/ /
Part B Recv Date:	01/14/1992
Generator EPA ID:	NYD001385848
Trans1 EPA ID:	NYD981182769
Trans2 EPA ID:	Not reported
TSDF ID 1:	NYD981182769
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	F006 - WW TREAT SL FM ELECTROPLATING OPER
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	01165
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	023
Container Type:	DM - Metal drums, barrels
Handling Method:	R Material recovery of more than 75 percent of the total material.
Specific Gravity:	100

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-1 additional NY MANIFEST: record(s) in the EDR Site Report.

Q150
SSW
1/8-1/4
0.185 mi.
978 ft.

CON EDISON SERVICE BOX: 16116 **RCRA NonGen / NLR** **1017772011**
26 MORGAN AVE **NYP004489589**
BROOKLYN, NY 11237

Site 14 of 15 in cluster Q

Relative: Higher

Actual: 29 ft.

RCRA NonGen / NLR:

Date form received by agency:	05/04/2014
Facility name:	CON EDISON SERVICE BOX: 16116
Facility address:	26 MORGAN AVE

CON EDISON SERVICE BOX: 16116 (Continued) **1017772011**

BROOKLYN, NY 11237
EPA ID: NYP004489589
Mailing address: IRVING PL, 15TH FL NE
NEW YORK, NY 10003
Contact: THOMAS TEELING
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: 212-460-3770
Contact email: Not reported
EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 04/04/2014
Site name: CON EDISON
Classification: Small Quantity Generator

Date form received by agency: 04/04/2014
Site name: CON EDISON
Classification: Not a generator, verified

Violation Status: No violations found

Q151 **CON EDISON** **NY MANIFEST** **S116550570**
SSW **26 MORGAN AVE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.185 mi.
978 ft. **Site 15 of 15 in cluster Q**

Relative:
Higher

Actual:
29 ft.

NY MANIFEST:
Country: USA
EPA ID: NYP004489589
Facility Status: Not reported
Location Address 1: 26 MORGAN AVE
Code: BP
Location Address 2: SB16116
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY

CON EDISON (Continued) **S116550570**

Location Zip:	11201
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004489589
Mailing Name:	CON EDISON
Mailing Contact:	CON EDISON
Mailing Address 1:	4 IRVING PL
Mailing Address 2:	15TH FL
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	04/04/2014
Trans1 Recv Date:	04/04/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	04/04/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004489589
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002407788GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	150
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.

CON EDISON (Continued) **S116550570**

Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

S152 **56-72 BOGART ST** **NY LTANKS U003128027**
SW **56-72 BOGART STREET** **NY UST N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.186 mi.
981 ft. **Site 6 of 9 in cluster S**

Relative: LTANKS:
Lower

Actual:
18 ft.

Name:	WAREHOUSE
Address:	56-72 BOGART STREET
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9709358 / 2005-08-09
Facility ID:	9709358
Site ID:	153113
Spill Date:	1997-11-12
Spill Cause:	Tank Test Failure
Spill Source:	Commercial/Industrial
Spill Class:	B3
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	JLDYBER
Referred To:	Not reported
Reported to Dept:	1997-11-12
CID:	311
Water Affected:	Not reported
Spill Notifier:	Tank Tester
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	1997-11-12
Spill Record Last Update:	2005-08-09
Spiller Name:	Not reported
Spiller Company:	UNKNOWN
Spiller Address:	Not reported
Spiller County:	999
Spiller Contact:	JEAN COSTANTINI
Spiller Phone:	(516) 249-3150
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	129929
DEC Memo:	"8/9/05, Dyber: Received 1/14/04 tank test results from Marianne Hovivian. As the tank passed the test, no further action is needed. 7/29/05, Dyber: Marianne Hovivian called me and we discussed spill. She asked me to send her a letter requesting information, which I did. 7/28/05, Dyber: Called owner phone number on PBS system (PBS

56-72 BOGART ST (Continued) **U003128027**

#2-404764). Answering machine identified Ken & Mary Ann. Left message. Prior to Sept, 2004 data translation this spill Lead_DEC Field was M TIBBE THE TIGHTNESS TESTINGS WAS HIRED BY PARAGON ENV. 153 WASHINGTON ST. EAST WALPOLE, MA 020252. (508) 660-8888."

Remarks: "CALLER STATES TANK WAS TESTED THIS DATE AND FAILED. OWNER OF BUILDING IN NOT KNOWN. SUB CONTRACT FOR TYREE CORP."

All TTF:

Facility ID:	9709358
Spill Number:	9709358
Spill Tank Test:	1545460
Site ID:	153113
Tank Number:	01
Tank Size:	3000
Material:	0002
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	20
Test Method 2:	USTest 2000/P/LL plus USTest 2000/U
Leak Rate:	.00
Gross Fail:	Not reported
Modified By:	Spills
Last Modified Date:	Not reported

All Materials:

Site ID:	153113
Operable Unit ID:	1052502
Operable Unit:	01
Material ID:	327708
Material Code:	0002A
Material Name:	#4 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

UST:

Name:	56-72 BOGART ST
Address:	56-72 BOGART STREET
City,State,Zip:	BROOKLYN, NY 11206
Id/Status:	2-404764 / Unregulated/Closed
Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	N/A
UTM X:	590158.17378
UTM Y:	4506569.48392
Site Type:	Manufacturing (Other than Chemical)/Processing

Affiliation Records:

Site Id:	19484
Affiliation Type:	Facility Owner

56-72 BOGART ST (Continued) **U003128027**

Company Name:	56 BOGART ST. LLC
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	515 EAST 79 ST #30EF
Address2:	Not reported
City:	NEW YORK
State:	NY
Zip Code:	10021
Country Code:	001
Phone:	(212) 517-4923
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	19484
Affiliation Type:	Mail Contact
Company Name:	56 BOGART ST. LLC
Contact Type:	Not reported
Contact Name:	TOROS HOVIVIAN
Address1:	515 EAST 79TH STREET
Address2:	#30EF
City:	NEW YORK
State:	NY
Zip Code:	10021
Country Code:	001
Phone:	(212) 517-4923
EMail:	Not reported
Fax Number:	Not reported
Modified By:	NRLOMBAR
Date Last Modified:	2008-03-18

Site Id:	19484
Affiliation Type:	Facility Operator
Company Name:	56-72 BOGART ST
Contact Type:	Not reported
Contact Name:	GARY HOSEIN
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(917) 825-1214
EMail:	Not reported
Fax Number:	Not reported
Modified By:	NRLOMBAR
Date Last Modified:	2008-03-18

Site Id:	19484
Affiliation Type:	Emergency Contact
Company Name:	56 BOGART ST. LLC
Contact Type:	Not reported
Contact Name:	GARY HOSEIN
Address1:	Not reported
Address2:	Not reported
City:	Not reported

56-72 BOGART ST (Continued) **U003128027**

State:	NN
Zip Code:	Not reported
Country Code:	999
Phone:	(917) 825-1214
EMail:	Not reported
Fax Number:	Not reported
Modified By:	NRLOMBAR
Date Last Modified:	2008-03-18

Tank Info:

Tank Number:	001
Tank ID:	23022
Tank Status:	Closed - In Place
Material Name:	Closed - In Place
Capacity Gallons:	3000
Install Date:	09/01/1979
Date Tank Closed:	02/21/2008
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)
Tightness Test Method:	21
Date Test:	01/14/2004
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	NRLOMBAR
Last Modified:	04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
L09 - Piping Leak Detection - Exempt Suction Piping
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None

W153 **CON EDISON** **NY MANIFEST** **S117315332**
SE **141 THAMES ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.187 mi.
985 ft. **Site 1 of 3 in cluster W**

Relative:
Higher

Actual:
22 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004624896
Facility Status:	Not reported
Location Address 1:	141 THAMES ST
Code:	BP
Location Address 2:	SB 7897
Total Tanks:	Not reported
Location City:	BROOKLYN

CON EDISON (Continued) **S117315332**

Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004624896
Mailing Name:	CON EDISON
Mailing Contact:	TOM TEELING
Mailing Address 1:	4 IRVING PLACE 15TH FLOOR
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	08/12/2014
Trans1 Recv Date:	08/12/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	08/14/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004624896
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002616360GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	40
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks

CON EDISON (Continued) **S117315332**

Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

154
WNW
1/8-1/4
0.187 mi.
988 ft.

SMR MESEROLE CORP.
350 MESEROLE STREET
BROOKLYN, NY 11206

NY AST **U004077078**
N/A

Relative:
Lower

Actual:
17 ft.

AST:

Name:	SMR MESEROLE CORP.
Address:	350 MESEROLE STREET
City,State,Zip:	BROOKLYN, NY 11206
Region:	STATE
DEC Region:	2
Site Status:	Active
Facility Id:	2-211001
Program Type:	PBS
UTM X:	590024.86937
UTM Y:	4506988.33639
Expiration Date:	06/30/2022
Site Type:	Other

Affiliation Records:

Site Id:	7665
Affiliation Type:	Mail Contact
Company Name:	SMR MESEROLE CORP.
Contact Type:	Not reported
Contact Name:	JEREMY ROSEN
Address1:	59-21 QUEENS MIDTOWN EXPY.
Address2:	Not reported
City:	MASPETH
State:	NY
Zip Code:	11378
Country Code:	001
Phone:	(718) 381-0600
EMail:	JROSEN.BAKERSUPPLY@GMAIL.COM
Fax Number:	Not reported
Modified By:	ACDANIEL
Date Last Modified:	2018-12-11

Site Id:	7665
Affiliation Type:	Facility Operator
Company Name:	SMR MESEROLE CORP.
Contact Type:	Not reported
Contact Name:	SMR MESEROLE CORP.
Address1:	Not reported
Address2:	Not reported

SMR MESEROLE CORP. (Continued) **U004077078**

City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 381-0600
EMail:	Not reported
Fax Number:	Not reported
Modified By:	ACDANIEL
Date Last Modified:	2018-12-11

Site Id:	7665
Affiliation Type:	Emergency Contact
Company Name:	SMR MESEROLE CORP.
Contact Type:	Not reported
Contact Name:	JEREMY ROSEN
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	999
Phone:	(917) 836-6489
EMail:	Not reported
Fax Number:	Not reported
Modified By:	ACDANIEL
Date Last Modified:	2018-12-11

Site Id:	7665
Affiliation Type:	Facility Owner
Company Name:	SMR MESEROLE CORP.
Contact Type:	PRESIDENT
Contact Name:	STUART ROSEN
Address1:	5921 QUEENS MIDTOWN EXPY
Address2:	Not reported
City:	MASPETH
State:	NY
Zip Code:	11378
Country Code:	001
Phone:	(718) 381-0600
EMail:	Not reported
Fax Number:	Not reported
Modified By:	ACDANIEL
Date Last Modified:	2018-12-11

Tank Info:

Tank Number:	001
Tank Id:	9751
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Equipment Records:

B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
H00 - Tank Leak Detection - None

SMR MESEROLE CORP. (Continued) **U004077078**

G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
I04 - Overfill - Product Level Gauge (A/G)
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Location: Aboveground in subterranean vault with access for inspections.....
Tank in subterranean vault but accessible for inspection.
Tank Type: Steel/Carbon Steel/Iron
Tank Status: Closed - In Place
Pipe Model: Not reported
Install Date: Not reported
Capacity Gallons: 2000
Tightness Test Method: -
Date Test: Not reported
Next Test Date: Not reported
Date Tank Closed: 08/09/2000
Register: True
Modified By: ACDANIEL
Last Modified: 12/11/2018
Material Name: #2 fuel oil (on-site consumption)

Tank Number: 002
Tank Id: 9752
Material Code: 0001
Common Name of Substance: #2 Fuel Oil (On-Site Consumption)

Equipment Records:

H00 - Tank Leak Detection - None
L09 - Piping Leak Detection - Exempt Suction Piping
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
I04 - Overfill - Product Level Gauge (A/G)
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Location: Aboveground in subterranean vault with access for inspections.....
Tank in subterranean vault but accessible for inspection.
Tank Type: Steel/Carbon Steel/Iron
Tank Status: Temporarily Out of Service
Pipe Model: Not reported
Install Date: 06/01/1945
Capacity Gallons: 7500
Tightness Test Method: -
Date Test: Not reported
Next Test Date: Not reported
Date Tank Closed: Not reported
Register: True
Modified By: ACDANIEL
Last Modified: 12/11/2018
Material Name: #2 fuel oil (on-site consumption)

S155 **OCEAN CASKET CO INC** **RCRA NonGen / NLR** **1000150190**
SSW **17 THAMES ST** **FINDS** **NYD001323336**
1/8-1/4 **BROOKLYN, NY 11206** **ECHO**
0.187 mi.
988 ft. **Site 7 of 9 in cluster S**

Relative:
Higher

Actual:
22 ft.

RCRA NonGen / NLR:

Date form received by agency:	01/01/2007
Facility name:	OCEAN CASKET CO INC
Facility address:	17 THAMES ST BROOKLYN, NY 11206
EPA ID:	NYD001323336
Mailing address:	THAMES ST BROOKLYN, NY 11206
Contact:	Not reported
Contact address:	THAMES ST BROOKLYN, NY 11206
Contact country:	US
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	02
Land type:	Facility is not located on Indian land. Additional information is not known.
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	Not reported
Owner/operator address:	NOT REQUIRED NOT REQUIRED, WY 99999
Owner/operator country:	US
Owner/operator telephone:	212-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	Not reported
Owner/operator address:	NOT REQUIRED NOT REQUIRED, WY 99999
Owner/operator country:	US
Owner/operator telephone:	212-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No

OCEAN CASKET CO INC (Continued) **1000150190**

Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2006
Site name: OCEAN CASKET CO INC
Classification: Not a generator, verified

Date form received by agency: 03/24/1995
Site name: OCEAN CASKET CO INC
Classification: Not a generator, verified

Date form received by agency: 06/27/1980
Site name: OCEAN CASKET CO INC
Classification: Large Quantity Generator

Hazardous Waste Summary:

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: NONE
. Waste name: None

Violation Status: No violations found

Evaluation Action Summary:
Evaluation date: 08/11/2015
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

Evaluation date: 04/16/1987
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

FINDS:

Registry ID: 110004333766

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA

OCEAN CASKET CO INC (Continued) **1000150190**

program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000150190
Registry ID: 110004333766
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110004333766

S156 **CONSOLIDATED EDISON** **NY MANIFEST** **1009242918**
SW **SEIGEL ST & BOGART ST** **N/A**
1/8-1/4 **BROOKLYN, NY**
0.189 mi.
999 ft. **Site 8 of 9 in cluster S**

Relative: **Lower**
Actual: **18 ft.**

NY MANIFEST:
Country: USA
EPA ID: NYP004122073
Facility Status: Not reported
Location Address 1: SEIGEL ST & BOGART ST
Code: BP
Location Address 2: Not reported
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: Not reported
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYP004122073
Mailing Name: CONSOLIDATED EDISON
Mailing Contact: FRANKLIN MURRAY
Mailing Address 1: 4 IRVING PLACE RM 828
Mailing Address 2: Not reported
Mailing City: NEW YORK
Mailing State: NY
Mailing Zip: 10003
Mailing Zip 4: Not reported
Mailing Country: USA
Mailing Phone: 2124602808

NY MANIFEST:
Document ID: NYE1292949
Manifest Status: Not reported
seq: Not reported
Year: 2004
Trans1 State ID: 46299JM
Trans2 State ID: Not reported
Generator Ship Date: 06/30/2004
Trans1 Recv Date: 06/30/2004
Trans2 Recv Date: Not reported
TSD Site Recv Date: 06/30/2004
Part A Recv Date: Not reported
Part B Recv Date: Not reported

CONSOLIDATED EDISON (Continued) **1009242918**

Generator EPA ID:	NYP004122073
Trans1 EPA ID:	NYD006982359
Trans2 EPA ID:	Not reported
TSDF ID 1:	NYD980593
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	B002 - PETROLEUM OIL WITH 50 BUT < 500 PPM PCB
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	01591
Units:	K - Kilograms (2.2 pounds)
Number of Containers:	001
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	01.00

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

V157 **CON EDISON SERVICE BOX: 7462** **RCRA NonGen / NLR** **1017779691**
SE **1115 FLUSHING AVE** **FINDS** **NYP004577011**
1/8-1/4 **BROOKLYN, NY 11206**
0.189 mi.
1000 ft. **Site 2 of 5 in cluster V**

Relative: RCRA NonGen / NLR:
Higher

Date form received by agency:	07/26/2014
Facility name:	CON EDISON SERVICE BOX: 7462
Facility address:	1115 FLUSHING AVE BROOKLYN, NY 11206
EPA ID:	NYP004577011
Mailing address:	IRVING PL, 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	212-460-3770
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Actual:
24 ft.

CON EDISON SERVICE BOX: 7462 (Continued) **1017779691**

Handler Activities Summary:
- U.S. importer of hazardous waste: No
- Mixed waste (haz. and radioactive): No
- Recycler of hazardous waste: No
- Transporter of hazardous waste: No
- Treater, storer or disposer of HW: No
- Underground injection activity: No
- On-site burner exemption: No
- Furnace exemption: No
- Used oil fuel burner: No
- Used oil processor: No
- User oil refiner: No
- Used oil fuel marketer to burner: No
- Used oil Specification marketer: No
- Used oil transfer facility: No
- Used oil transporter: No

Historical Generators:
- Date form received by agency: 06/26/2014
- Site name: CON EDISON
- Classification: Small Quantity Generator

- Date form received by agency: 06/26/2014
- Site name: CON EDISON
- Classification: Not a generator, verified

- Violation Status: No violations found

FINDS:

- Registry ID: 110063843408

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

V158 **CON EDISON** **NY MANIFEST** **S117065164**
SE **1115 FLUSHING AVE** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.189 mi.
1000 ft. **Site 3 of 5 in cluster V**

Relative:
Higher

Actual:
24 ft.

NY MANIFEST:
- Country: USA
- EPA ID: NYP004851586
- Facility Status: Not reported
- Location Address 1: 1115 FLUSHING AVE
- Code: BP
- Location Address 2: SB 7462

CON EDISON (Continued) **S117065164**

Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	Not reported
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004851586
Mailing Name:	CON EDISON
Mailing Contact:	DENNIS HUACON
Mailing Address 1:	4 IRVING PL 15TH FL
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	2124603770

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2015
Trans1 State ID:	NJ0000027193
Trans2 State ID:	Not reported
Generator Ship Date:	10/12/2015
Trans1 Recv Date:	10/12/2015
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	10/14/2015
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004851586
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD002200046
TSDF ID 2:	Not reported
Manifest Tracking Number:	014470955JJK
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	2000
Units:	P - Pounds

CON EDISON (Continued) **S117065164**

Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Country:	USA
EPA ID:	NYP004577011
Facility Status:	Not reported
Location Address 1:	1115 FLUSHING AVE
Code:	BP
Location Address 2:	SB 7462
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004577011
Mailing Name:	CON EDISON
Mailing Contact:	TOM TEELING
Mailing Address 1:	4 IRVING PLACE 15TH FLOOR
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	06/26/2014
Trans1 Recv Date:	06/26/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	07/09/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004577011
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002503008GBF
Import Indicator:	N

CON EDISON (Continued) **S117065164**

Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	100
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

R159 **RAVENWARE CO INC** **RCRA NonGen / NLR** **1000208946**
NW **360 SCHOLES ST** **FINDS** **NYD001255637**
1/8-1/4 **BROOKLYN, NY 11206** **ECHO**
0.193 mi.
1018 ft. **Site 5 of 5 in cluster R**

Relative: **Lower**

Actual: **15 ft.**

RCRA NonGen / NLR:

Date form received by agency:	01/01/2007
Facility name:	RAVENWARE CO INC
Facility address:	360 SCHOLES ST BROOKLYN, NY 11206-1727
EPA ID:	NYD001255637
Mailing address:	SCHOLES ST BROOKLYN, NY 11206
Contact:	Not reported
Contact address:	SCHOLES ST BROOKLYN, NY 11206
Contact country:	US
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	02
Land type:	Facility is not located on Indian land. Additional information is not known.
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

RAVENWARE CO INC (Continued) **1000208946**

Owner/Operator Summary:
- Owner/operator name: JOSEPH LEVA
- Owner/operator address: NOT REQUIRED
  NOT REQUIRED, WY 99999
- Owner/operator country: US
- Owner/operator telephone: 212-555-1212
- Owner/operator email: Not reported
- Owner/operator fax: Not reported
- Owner/operator extension: Not reported
- Legal status: Private
- Owner/Operator Type: Owner
- Owner/Op start date: Not reported
- Owner/Op end date: Not reported

- Owner/operator name: JOSEPH LEVA
- Owner/operator address: NOT REQUIRED
  NOT REQUIRED, WY 99999
- Owner/operator country: US
- Owner/operator telephone: 212-555-1212
- Owner/operator email: Not reported
- Owner/operator fax: Not reported
- Owner/operator extension: Not reported
- Legal status: Private
- Owner/Operator Type: Operator
- Owner/Op start date: Not reported
- Owner/Op end date: Not reported

Handler Activities Summary:
- U.S. importer of hazardous waste: No
- Mixed waste (haz. and radioactive): No
- Recycler of hazardous waste: No
- Transporter of hazardous waste: No
- Treater, storer or disposer of HW: No
- Underground injection activity: No
- On-site burner exemption: No
- Furnace exemption: No
- Used oil fuel burner: No
- Used oil processor: No
- User oil refiner: No
- Used oil fuel marketer to burner: No
- Used oil Specification marketer: No
- Used oil transfer facility: No
- Used oil transporter: No

Historical Generators:
- Date form received by agency: 01/01/2006
- Site name: RAVENWARE CO INC
- Classification: Not a generator, verified

- Date form received by agency: 07/08/1999
- Site name: RAVENWARE CO INC
- Classification: Not a generator, verified

- Date form received by agency: 08/18/1980
- Site name: RAVENWARE CO INC
- Classification: Large Quantity Generator

RAVENWARE CO INC (Continued) **1000208946**

Hazardous Waste Summary:

. Waste code: F001
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE, TRICHLORETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE AND CHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F006
. Waste name: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS, EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC, AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

. Waste code: F007
. Waste name: SPENT CYANIDE PLATING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS.

. Waste code: F008
. Waste name: PLATING BATH RESIDUES FROM THE BOTTOM OF PLATING BATHS FROM ELECTROPLATING OPERATIONS IN WHICH CYANIDES ARE USED IN THE PROCESS.

. Waste code: F009
. Waste name: SPENT STRIPPING AND CLEANING BATH SOLUTIONS FROM ELECTROPLATING OPERATIONS IN WHICH CYANIDES ARE USED IN THE PROCESS.

Violation Status: No violations found

Evaluation Action Summary:
Evaluation date: 01/20/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

FINDS:

Registry ID: 110004332936

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

RAVENWARE CO INC (Continued) **1000208946**

ECHO:
Envid: 1000208946
Registry ID: 110004332936
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110004332936

X160 **WASTE MANAGEMENT OF NEW YORK LLC** **RCRA-SQG** **1000248669**
NNE **123 VARICK AVE** **US AIRS** **NYD982744815**
1/8-1/4 **BROOKLYN, NY 11237** **PA MANIFEST**
0.196 mi. **NJ MANIFEST**
1033 ft. **Site 1 of 16 in cluster X** **NY MANIFEST**

Relative:
Lower

Actual:
11 ft.

RCRA-SQG:
Date form received by agency: 01/01/2007
Facility name: WASTE MANAGEMENT OF NEW YORK LLC
Facility address: 123 VARICK AVE
BROOKLYN, NY 11237
EPA ID: NYD982744815
Mailing address: VARICK AVE
BROOKLYN, NY 11237
Contact: JAY KAPLAN
Contact address: VARICK AVE
BROOKLYN, NY 11237
Contact country: US
Contact telephone: 718-533-5310
Contact email: Not reported
EPA Region: 02
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: WASTE MANAGEMENT OF NEW YORK LLC
Owner/operator address: VARICK AVE
BROOKLYN, NY 11237
Owner/operator country: US
Owner/operator telephone: 718-533-5310
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 12/31/1980
Owner/Op end date: Not reported

Owner/operator name: WASTE MANAGEMENT OF NEW YORK LLC
Owner/operator address: VARICK AVE
BROOKLYN, NY 11237
Owner/operator country: US
Owner/operator telephone: 718-533-5310
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator

WASTE MANAGEMENT OF NEW YORK LLC (Continued) **1000248669**

Owner/Op start date: 12/31/1980
Owner/Op end date: Not reported

Owner/operator name: WASTE MGMT
Owner/operator address: 123 VARICK AVE
BROOKLYN, NY 11237
Owner/operator country: US
Owner/operator telephone: 718-386-7900
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2006
Site name: WASTE MANAGEMENT OF NEW YORK LLC
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 11/12/2003
Site name: WASTE MANAGEMENT OF NEW YORK LLC
Classification: Large Quantity Generator

Date form received by agency: 05/21/2002
Site name: STAR RECYCLING - WASTE MGMT
Classification: Not a generator, verified

Date form received by agency: 03/18/1998
Site name: STAR RECYCLING - WASTE MGMT
Classification: Small Quantity Generator

Date form received by agency: 05/02/1995
Site name: STAR RECYCLING - WASTE MGMT
Classification: Unverified

Hazardous Waste Summary:

WASTE MANAGEMENT OF NEW YORK LLC (Continued) **1000248669**

. Waste code: D000
. Waste name: Not Defined

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D005
. Waste name: BARIUM

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D018
. Waste name: BENZENE

. Waste code: D027
. Waste name: 1,4-DICHLOROBENZENE

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

. Waste code: D040
. Waste name: TRICHLORETHYLENE

. Waste code: NONE
. Waste name: None

Violation Status: No violations found

US AIRS MINOR:
Envid: 1000248669
Region Code: 02
Programmatic ID: AIR NY0000002610400013
Facility Registry ID: 110004433104
D and B Number: Not reported
Primary SIC Code: 4953
NAICS Code: 999999
Default Air Classification Code: MIN
Facility Type of Ownership Code: POF
Air CMS Category Code: Not reported
HPV Status: Not reported

US AIRS MINOR:
Region Code: 02
Programmatic ID: AIR NY0000002610400013
Facility Registry ID: 110004433104
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2005-03-22 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring

WASTE MANAGEMENT OF NEW YORK LLC (Continued) **1000248669**

Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610400013
Facility Registry ID: 110004433104
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2011-08-02 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

US AIRS MINOR:
Envid: 1000248669
Region Code: 02
Programmatic ID: AIR NY0000002610400013
Facility Registry ID: 110004433104
D and B Number: Not reported
Primary SIC Code: 4953
NAICS Code: 999999
Default Air Classification Code: MIN
Facility Type of Ownership Code: POF
Air CMS Category Code: Not reported
HPV Status: Not reported

US AIRS MINOR:
Region Code: 02
Programmatic ID: AIR NY0000002610400013
Facility Registry ID: 110004433104
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2005-03-22 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610400013
Facility Registry ID: 110004433104
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2011-08-02 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Manifest Details:
Year: 2006

WASTE MANAGEMENT OF NEW YORK LLC (Continued) **1000248669**

Manifest Number:	PAH132852
Manifest Type:	TSD Copy
Generator EPA Id:	NYD982744815
Generator Date:	05/10/2006
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	Not reported
TSD EPA Id:	PAD067098822
TSD Date:	Not reported
TSD Facility Name:	CYCLE CHEM INC
TSD Facility Address:	550 INDUSTRIAL DRIVE
TSD Facility City:	LEWISBERRY
TSD Facility State:	PA
Facility Telephone:	718-533-5310
Page Number:	1
Line Number:	2
Waste Number:	D002
Container Number:	3
Container Type:	Fiberboard or plastic drums, barrels, kegs
Waste Quantity:	15
Unit:	Gallons (liquids only)
Handling Code:	Not reported
TSP EPA Id:	Not reported
Date TSP Sig:	Not reported

Year:	2006
Manifest Number:	PAH132852
Manifest Type:	TSD Copy
Generator EPA Id:	NYD982744815
Generator Date:	05/10/2006
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	Not reported
TSD EPA Id:	PAD067098822
TSD Date:	Not reported
TSD Facility Name:	CYCLE CHEM INC
TSD Facility Address:	550 INDUSTRIAL DRIVE
TSD Facility City:	LEWISBERRY
TSD Facility State:	PA
Facility Telephone:	718-533-5310
Page Number:	1
Line Number:	1
Waste Number:	D001
Container Number:	1
Container Type:	Metal drums, barrels, kegs
Waste Quantity:	400
Unit:	Pounds
Handling Code:	Not reported
TSP EPA Id:	Not reported
Date TSP Sig:	Not reported

NJ MANIFEST:

EPA Id:	NYD982744815
Mail Address:	123 VARICK AVENUE
Mail City/State/Zip:	BROOKLYN 11237

WASTE MANAGEMENT OF NEW YORK LLC (Continued) **1000248669**

Facility Phone:	7185335310
Emergency Phone:	Not reported
Contact:	JAY KAPLAN
Comments:	Not reported
SIC Code:	Not reported
County:	00
Municipal:	00
Previous EPA Id:	Not reported
Gen Flag:	X
Trans Flag:	Not reported
TSDF Flag:	Not reported
Name Change:	Not reported
Date Change:	Not reported

Manifest:

Manifest Number:	NJA5287893
EPA ID:	NYD982744815
Date Shipped:	08/15/2006
TSDF EPA ID:	NJD002200046
Transporter EPA ID:	NJD982792384
Transporter 2 EPA ID:	NJD982792384
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	08/15/2006
Date Trans2 Transported Waste:	08/21/2006
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	08/21/2006
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	10020625
Was Load Rejected:	BROOKLYN 11237
Reason Load Was Rejected:	Not reported

Manifest Number:	NJA5210625
EPA ID:	NYD982744815

WASTE MANAGEMENT OF NEW YORK LLC (Continued) **1000248669**

Date Shipped:	01/06/2005
TSDF EPA ID:	NJD002200046
Transporter EPA ID:	NYR000080549
Transporter 2 EPA ID:	NJD986607380
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	01/06/2005
Date Trans2 Transported Waste:	01/07/2005
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	01/07/2005
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	04250522
Was Load Rejected:	BROOKLYN 11237
Reason Load Was Rejected:	Not reported

Manifest Number:	NJA5214113
EPA ID:	NYD982744815
Date Shipped:	07/22/2005
TSDF EPA ID:	NJD002200046
Transporter EPA ID:	NYR000080549
Transporter 2 EPA ID:	NJD980525786
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	07/22/2005
Date Trans2 Transported Waste:	08/03/2005
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported

WASTE MANAGEMENT OF NEW YORK LLC (Continued) **1000248669**

Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	08/03/2005
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	12050521
Was Load Rejected:	BROOKLYN 11237
Reason Load Was Rejected:	Not reported

NY MANIFEST:

Country:	USA
EPA ID:	NYD982744815
Facility Status:	Not reported
Location Address 1:	123 VARICK AVE
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYD982744815
Mailing Name:	ALLIED SANITATION CORP
Mailing Contact:	TONY CUCINOTTA
Mailing Address 1:	123 VARICK AVE
Mailing Address 2:	Not reported
Mailing City:	BROOKLYN
Mailing State:	NY
Mailing Zip:	11237
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	7183867900

NY MANIFEST:

Document ID:	NJA5287893
Manifest Status:	Not reported
seq:	01
Year:	2006
Trans1 State ID:	NJD982792384

WASTE MANAGEMENT OF NEW YORK LLC (Continued) **1000248669**

Trans2 State ID:	Not reported
Generator Ship Date:	08/15/2006
Trans1 Recv Date:	08/15/2006
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	08/21/2006
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYD982744815
Trans1 EPA ID:	08219
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD002200046
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	D001 - NON-LISTED IGNITABLE WASTES
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	00065
Units:	P - Pounds
Number of Containers:	001
Container Type:	DM - Metal drums, barrels
Handling Method:	B Incineration, heat recovery, burning.
Specific Gravity:	01.00

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

X161 **COOPER RECYCLING CORP** **NY SWF/LF** **S103517663**
NNE **123 VARICK AVENUE** **NY Spills** **N/A**
1/8-1/4 **BROOKLYN, NY 11237** **NY Financial Assurance**
0.196 mi. **NY MANIFEST**
1033 ft. **Site 2 of 16 in cluster X** **NY SPDES**

Relative: **Lower**
Actual: **11 ft.**

SWF/LF:

Flag:	ACTIVE
Region Code:	2
Phone Number:	7185335398
Owner Name:	Adrienne Cooper
Owner Type:	Private
Owner Address:	123 Varick Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11237
Owner Email:	dhillcoat@coopertank.com
Owner Phone:	7184974431

COOPER RECYCLING CORP (Continued) **S103517663**

Contact Name: Ray Kvedaras
Contact Address: Not reported
Contact Addr2: Not reported
Contact City,St,Zip: NY
Contact Email: rkvedaras@coopertank.com
Contact Phone: 7183847727
Activity Desc: z Retired - C&D processing - permit
Activity Number: [24W89]
Active: Yes
East Coordinate: 590588
North Coordinate: 4507083
Accuracy Code: Not reported
Regulatory Status: Permit
Waste Type: Construction & Demolition Debris
Authorization #: Not reported
Authorization Date: 10/24/2014
Expiration Date: 10/23/2019
Operator Name: Cooper Recycling
Operator Type: Private
Laste Date: Not reported

Flag: INACTIVE
Region Code: 2
Phone Number: 7185335308
Owner Name: Not reported
Owner Type: Not reported
Owner Address: Not reported
Owner Addr2: Not reported
Owner City,St,Zip: Not reported
Owner Email: Not reported
Owner Phone: Not reported
Contact Name: TARA HEMMER
Contact Address: Not reported
Contact Addr2: Not reported
Contact City,St,Zip: Not reported
Contact Email: Not reported
Contact Phone: Not reported
Activity Desc: z Retired - C&D processing - registration
Activity Number: [24W89]
Active: No
East Coordinate: 590500
North Coordinate: 4507400
Accuracy Code: Not reported
Regulatory Status: Permit
Waste Type: Not reported
Authorization #: 2-6104-00013
Authorization Date: 10/30/1996
Expiration Date: 10/30/2001
Operator Name: Not reported
Operator Type: Not reported
Laste Date: Not reported

Flag: INACTIVE
Region Code: 2
Phone Number: 7185335398
Owner Name: Adrienne Cooper
Owner Type: Private

COOPER RECYCLING CORP (Continued) **S103517663**

Owner Address:	123 Varick Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11237
Owner Email:	dhillcoat@coopertank.com
Owner Phone:	7184974431
Contact Name:	Ray Kvedaras
Contact Address:	Not reported
Contact Addr2:	Not reported
Contact City,St,Zip:	NY
Contact Email:	rkvedaras@coopertank.com
Contact Phone:	7183847727
Activity Desc:	z Retired - Transfer station - permit
Activity Number:	[24W89]
Active:	No
East Coordinate:	590588
North Coordinate:	4507083
Accuracy Code:	4.2 - Utilization of GIS and existing spatial data
Regulatory Status:	Permit
Waste Type:	Not reported
Authorization #:	Not reported
Authorization Date:	Not reported
Expiration Date:	Not reported
Operator Name:	Cooper Recycling
Operator Type:	Private
Laste Date:	Not reported

Flag:	INACTIVE
Region Code:	2
Phone Number:	7185335308
Owner Name:	Not reported
Owner Type:	Not reported
Owner Address:	Not reported
Owner Addr2:	Not reported
Owner City,St,Zip:	Not reported
Owner Email:	Not reported
Owner Phone:	Not reported
Contact Name:	TARA HEMMER
Contact Address:	Not reported
Contact Addr2:	Not reported
Contact City,St,Zip:	Not reported
Contact Email:	Not reported
Contact Phone:	Not reported
Activity Desc:	z Retired - Transfer station - permit
Activity Number:	[24T89]
Active:	No
East Coordinate:	590500
North Coordinate:	4507400
Accuracy Code:	Not reported
Regulatory Status:	Permit
Waste Type:	Not reported
Authorization #:	2-6104-00013
Authorization Date:	10/30/1996
Expiration Date:	10/30/2001
Operator Name:	Not reported
Operator Type:	Not reported
Laste Date:	Not reported

COOPER RECYCLING CORP (Continued) **S103517663**

SPILLS:

Name:	WASTE MANAGMENT OF NY
Address:	123 VARICK AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9805562 / 2012-09-25
Facility ID:	9805562
Facility Type:	ER
DER Facility ID:	251293
Site ID:	311469
DEC Region:	2
Spill Cause:	Unknown
Spill Class:	C4
SWIS:	2401
Spill Date:	1998-08-04
Investigator:	VXBREVDO
Referred To:	Not reported
Reported to Dept:	1998-08-04
CID:	281
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Responsible Party
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	True
Remediation Phase:	0
Date Entered In Computer:	1998-08-04
Spill Record Last Update:	2012-09-25
Spiller Name:	K RADHAKRISHNAN
Spiller Company:	WASTE MANAGMENT OF NY
Spiller Address:	123 VARICK AVE
Spiller Company:	001
Contact Name:	KARTHIK RADHAKRISHNAN
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was MULQUEEN 06/16/06: This spill is transferred from Mike Mulqueen to Mr. Koon Tang. 09/25/2012 - This is tank failure. Accoring to spill report spilled product was contained and all recovered. No data or information exists to indicate soil or groundwater contamiantion. Facility is covered with asphalt and/or buildings. No threat of exposure exists. Spill case can be closed. Closed effective September 25, 2012. V. Brevdo"
Remarks:	"TANK FAILURE AT ABOVE LOCATION. MATERIAL CONTAINED AND ALL RECOVERED. NO CALL BACK REQUESTED."

All Materials:

Site ID:	311469
Operable Unit ID:	1066749
Operable Unit:	01
Material ID:	320302
Material Code:	0008
Material Name:	diesel
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	20.00
Units:	G
Recovered:	20.00

COOPER RECYCLING CORP (Continued) **S103517663**

Oxygenate:	Not reported

Name:	SPILL NUMBER 0204059
Address:	123 VARICK AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0204059 / 2002-07-30
Facility ID:	0204059
Facility Type:	ER
DER Facility ID:	251293
Site ID:	289786
DEC Region:	2
Spill Cause:	Other
Spill Class:	C3
SWIS:	2401
Spill Date:	2002-07-18
Investigator:	MXTIPPLE
Referred To:	Not reported
Reported to Dept:	2002-07-18
CID:	199
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Responsible Party
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2002-07-18
Spill Record Last Update:	2002-07-30
Spiller Name:	MIKE BAVARO
Spiller Company:	CITY & COUNTY PAVING CO
Spiller Address:	11-21 154TH ST
Spiller Company:	001
Contact Name:	JAY KAPLAN
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was TIPPLE 7/23/2002 SPOKE WITH JAY KAPLAN, HE WILL SEND IN PHOTOS AND MANIFESTS FOR CLOSURE"
Remarks:	"city and county waste truck was dumping at the transfer station and a container that was ill marked tipped over spilling the materal - all state power vac. is enroute for clean up - they should be able to recover all materal as it spilled to concrete "

All Materials:

Site ID:	289786
Operable Unit ID:	856865
Operable Unit:	01
Material ID:	518318
Material Code:	0015
Material Name:	motor oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	150.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

COOPER RECYCLING CORP (Continued) **S103517663**

Name:	WASTE MANAG.
Address:	123 VARICK AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0512331 / 2006-03-28
Facility ID:	0512331
Facility Type:	ER
DER Facility ID:	251293
Site ID:	358625
DEC Region:	2
Spill Cause:	Equipment Failure
Spill Class:	C4
SWIS:	2401
Spill Date:	2006-01-24
Investigator:	SFRAHMAN
Referred To:	Not reported
Reported to Dept:	2006-01-24
CID:	408
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Responsible Party
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2006-01-24
Spill Record Last Update:	2006-03-28
Spiller Name:	JAY KAPLAN
Spiller Company:	WASTE MANAG.
Spiller Address:	123 VARICK AVE
Spiller Company:	001
Contact Name:	JAY KAPLAN
DEC Memo:	"Off hours 01/31/06 Sharif// Left a messege for Jay Kaplan,(718)533-5310 to follow up the clean up. 03/21/06 Sharif Rahman- I called Jay Kaplan again and left a messege for him to call DEC back. 03/28/06 Sharif Rahman- Rec'd waste disposal manifest and fact sheet from Waste Management(WM).NFA required."
Remarks:	"filter broke, clean up crews are schedualed to arrive in the morning. Contained within an oil/water seperator."

All Materials:

Site ID:	358625
Operable Unit ID:	1115862
Operable Unit:	01
Material ID:	2105970
Material Code:	0008
Material Name:	diesel
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	Not reported
Units:	G
Recovered:	.00
Oxygenate:	Not reported

NY Financial Assurance 1:

COOPER RECYCLING CORP (Continued) **S103517663**

Owner Name:	Adrienne Cooper
Region:	2
Estimate Type:	Closure
Estimate Amount:	423000
Estimate Date:	03/01/2001
Mechanism:	Surety bond - Performance
Mechanism Amount:	451880
Issue Date:	Not reported
Expiration Date:	Not reported
Activity Number:	24W89
Activity Description:	C&D processing - permit

NY MANIFEST:

Country:	USA
EPA ID:	NYP000889022
Facility Status:	Not reported
Location Address 1:	123 VARICK AVE
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP000889022
Mailing Name:	ALLIED SANITATION
Mailing Contact:	ANTHONY CUCINOTTA
Mailing Address 1:	123 VARICK AVENUE
Mailing Address 2:	Not reported
Mailing City:	BROOKLYN
Mailing State:	NY
Mailing Zip:	11237
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	7187794650

NY MANIFEST:

Document ID:	NYA7143669
Manifest Status:	C
seq:	Not reported
Year:	1989
Trans1 State ID:	000000000
Trans2 State ID:	000000000
Generator Ship Date:	05/19/1989
Trans1 Recv Date:	05/19/1989
Trans2 Recv Date:	/ /
TSD Site Recv Date:	05/19/1989
Part A Recv Date:	05/26/1989
Part B Recv Date:	05/26/1989
Generator EPA ID:	NYP000889022
Trans1 EPA ID:	NYD006801245
Trans2 EPA ID:	Not reported
TSDF ID 1:	NYD082785429
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported

COOPER RECYCLING CORP (Continued) **S103517663**

Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	D001 - NON-LISTED IGNITABLE WASTES
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	04001
Units:	P - Pounds
Number of Containers:	015
Container Type:	DM - Metal drums, barrels
Handling Method:	L Landfill.
Specific Gravity:	100

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

SPDES:

Permit Number:	NY0201260
State-Region:	02
Expiration Date:	07/31/2011
Current Major Minor Status:	Minor
Primary Facility SIC Code:	4953
State Water Body Name:	ENGLISH KILLS
Limit Set Status Flag:	Active
Total Actual Average Flow(MGD):	Not reported
Total App Design Flow(MGD):	Not reported
UDF1:	DMR
Lat/Long:	40.709722 / -73.930556
DMR Cognizant Official:	JAY KAPLAN, ENVIR MGR
UDF2:	001702
UDF3:	SD
FIPS County Code:	NY047

Non-Gov Permit Affiliation Type Desc:	DMR Mailing Address
Non-Gov Permit Org Formal Name:	WASTE MANAGEMENT OF NY, LLC
Non-Gov Permit Street Address:	VARICK II
Non-Gov Permit Supplemental Location:	123 VARICK AVE
Non-Gov Permit City:	BROOKLYN
Non-Gov Permit State Code:	NY
Non-Gov Permit Zip Code:	11237
Non-Gov Facility Affiliation Type Desc:	Mailing Address
Non-Gov Facility Org Formal Name:	WASTE MANAGEMENT OF NY, LLC
Non-Gov Facility Street Address:	VARICK II
Non-Gov Facility Supplemental Location:	123 VARICK AVE

COOPER RECYCLING CORP (Continued) **S103517663**

Non-Gov Facility City:	BROOKLYN
Non-Gov Facility State Code:	NY
Non-Gov Facility Zip Code:	11237
State Water Body:	02030201010
UDF2:	001702
UDF3:	SD
FIPS County Code:	NY047
Non-Gov Permit Affiliation Type Desc:	DMR Mailing Address
Non-Gov Permit Org Formal Name:	WASTE MANAGEMENT OF NY, LLC
Non-Gov Permit Street Address:	VARICK II
Non-Gov Permit Supplemental Location:	123 VARICK AVE
Non-Gov Permit City:	BROOKLYN
Non-Gov Permit State Code:	NY
Non-Gov Permit Zip Code:	11237
Non-Gov Facility Affiliation Type Desc:	Owner
Non-Gov Facility Org Formal Name:	WASTE MANAGEMENT OF NY, LLC
Non-Gov Facility Street Address:	VARICK II
Non-Gov Facility Supplemental Location:	123 VARICK AVE
Non-Gov Facility City:	BROOKLYN
Non-Gov Facility State Code:	NY
Non-Gov Facility Zip Code:	11237
State Water Body:	02030201010
UDF2:	001702
UDF3:	SD
FIPS County Code:	NY047
Non-Gov Permit Affiliation Type Desc:	Permittee
Non-Gov Permit Org Formal Name:	WASTE MGMT OF NY LLC
Non-Gov Permit Street Address:	123 VARICK AVE
Non-Gov Permit Supplemental Location:	Not reported
Non-Gov Permit City:	BROOKLYN
Non-Gov Permit State Code:	NY
Non-Gov Permit Zip Code:	11237
Non-Gov Facility Affiliation Type Desc:	Mailing Address
Non-Gov Facility Org Formal Name:	WASTE MANAGEMENT OF NY, LLC
Non-Gov Facility Street Address:	VARICK II
Non-Gov Facility Supplemental Location:	123 VARICK AVE
Non-Gov Facility City:	BROOKLYN
Non-Gov Facility State Code:	NY
Non-Gov Facility Zip Code:	11237
State Water Body:	02030201010
UDF2:	001702
UDF3:	SD
FIPS County Code:	NY047
Non-Gov Permit Affiliation Type Desc:	Permittee
Non-Gov Permit Org Formal Name:	WASTE MGMT OF NY LLC
Non-Gov Permit Street Address:	123 VARICK AVE
Non-Gov Permit Supplemental Location:	Not reported
Non-Gov Permit City:	BROOKLYN
Non-Gov Permit State Code:	NY
Non-Gov Permit Zip Code:	11237
Non-Gov Facility Affiliation Type Desc:	Owner

COOPER RECYCLING CORP (Continued) **S103517663**

Non-Gov Facility Org Formal Name: WASTE MANAGEMENT OF NY, LLC
Non-Gov Facility Street Address: VARICK II
Non-Gov Facility Supplemental Location: 123 VARICK AVE
Non-Gov Facility City: BROOKLYN
Non-Gov Facility State Code: NY
Non-Gov Facility Zip Code: 11237
State Water Body: 02030201010

X162 **WASTE MANAGEMENT OF NEW YORK, LLC** **NY AST** **U003396750**
NNE **123 VARICK AVENUE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.196 mi.
1033 ft. **Site 3 of 16 in cluster X**

Relative:
Lower

Actual:
11 ft.

AST:
Name: WASTE MANAGEMENT OF NEW YORK, LLC
Address: 123 VARICK AVENUE
City,State,Zip: BROOKLYN, NY 11237
Region: STATE
DEC Region: 2
Site Status: Unregulated/Closed
Facility Id: 2-602618
Program Type: PBS
UTM X: 590540.33709
UTM Y: 4507107.94533
Expiration Date: N/A
Site Type: Apartment Building/Office Building

Affiliation Records:
Site Id: 24575
Affiliation Type: Facility Owner
Company Name: WASTE MANAGEMENT OF NEW YORK, LLC.
Contact Type: Not reported
Contact Name: Not reported
Address1: 123 VARICK AVENUE
Address2: Not reported
City: BROOKLYN
State: NY
Zip Code: 11237
Country Code: 001
Phone: (718) 533-5310
EMail: Not reported
Fax Number: Not reported
Modified By: NRLOMBAR
Date Last Modified: 2014-07-22

Site Id: 24575
Affiliation Type: Mail Contact
Company Name: WASTE MANAGEMENT OF NEW YORK, LLC.
Contact Type: ENVIRONMENTAL MANAGER
Contact Name: JAY KAPLAN
Address1: 123 VARICK AVENUE
Address2: Not reported
City: BROOKLYN
State: NY
Zip Code: 11237
Country Code: 001
Phone: (718) 533-5310
EMail: JKAPLAN2@HOTMAIL.COM

WASTE MANAGEMENT OF NEW YORK, LLC (Continued) **U003396750**

Fax Number: Not reported
Modified By: NRLOMBAR
Date Last Modified: 2009-09-29

Site Id: 24575
Affiliation Type: Facility Operator
Company Name: WASTE MANAGEMENT OF NEW YORK, LLC
Contact Type: Not reported
Contact Name: RAYMOND HUBLALL
Address1: Not reported
Address2: Not reported
City: Not reported
State: NY
Zip Code: Not reported
Country Code: 001
Phone: (718) 533-5367
EMail: Not reported
Fax Number: Not reported
Modified By: EXROSSAN
Date Last Modified: 2005-03-28

Site Id: 24575
Affiliation Type: Emergency Contact
Company Name: WASTE MANAGEMENT OF NEW YORK, LLC.
Contact Type: Not reported
Contact Name: JAY KAPLAN
Address1: Not reported
Address2: Not reported
City: Not reported
State: NN
Zip Code: Not reported
Country Code: 999
Phone: (718) 533-5310
EMail: Not reported
Fax Number: Not reported
Modified By: EXROSSAN
Date Last Modified: 2005-03-28

Tank Info:

Tank Number: 001
Tank Id: 50733
Material Code: 9999
Common Name of Substance: Other

Equipment Records:

C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
D00 - Pipe Type - No Piping
G00 - Tank Secondary Containment - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Location: Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.

WASTE MANAGEMENT OF NEW YORK, LLC (Continued) **U003396750**

Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Closed - Removed
Pipe Model:	Not reported
Install Date:	11/01/1997
Capacity Gallons:	275
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	11/01/1997
Register:	True
Modified By:	TRANSLAT
Last Modified:	04/14/2017
Material Name:	other

Tank Number:	002
Tank Id:	50734
Material Code:	9999
Common Name of Substance:	Other

Equipment Records:

F00 - Pipe External Protection - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
C01 - Pipe Location - Aboveground
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
D99 - Pipe Type - Other

Tank Location:	Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Closed - Removed
Pipe Model:	Not reported
Install Date:	11/01/1997
Capacity Gallons:	275
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	11/01/1997
Register:	True
Modified By:	TRANSLAT
Last Modified:	04/14/2017
Material Name:	other

Tank Number:	003
Tank Id:	50735
Material Code:	0013
Common Name of Substance:	Lube Oil

Equipment Records:

J02 - Dispenser - Suction Dispenser
E00 - Piping Secondary Containment - None
L09 - Piping Leak Detection - Exempt Suction Piping

WASTE MANAGEMENT OF NEW YORK, LLC (Continued) **U003396750**

F00 - Pipe External Protection - None
G01 - Tank Secondary Containment - Diking (Aboveground)
H06 - Tank Leak Detection - Impervious Barrier/Concrete Pad (A/G)
C01 - Pipe Location - Aboveground
I04 - Overfill - Product Level Gauge (A/G)
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Location:	Aboveground - on saddles, legs, racks, etc.... Tank bottom is elevated above grade or tank pad, allowing visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Closed - Removed
Pipe Model:	Not reported
Install Date:	01/01/1990
Capacity Gallons:	275
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	03/28/2014
Register:	True
Modified By:	NRLOMBAR
Last Modified:	04/14/2017
Material Name:	lube oil
Tank Number:	004
Tank Id:	50736
Material Code:	0022
Common Name of Substance:	Waste Oil/Used Oil

Equipment Records:

E00 - Piping Secondary Containment - None
K01 - Spill Prevention - Catch Basin
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
L09 - Piping Leak Detection - Exempt Suction Piping
I04 - Overfill - Product Level Gauge (A/G)
J00 - Dispenser - None
D00 - Pipe Type - No Piping
G01 - Tank Secondary Containment - Diking (Aboveground)
H06 - Tank Leak Detection - Impervious Barrier/Concrete Pad (A/G)
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Location:	Aboveground - on saddles, legs, racks, etc.... Tank bottom is elevated above grade or tank pad, allowing visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Closed - Removed
Pipe Model:	Not reported
Install Date:	01/01/1990
Capacity Gallons:	275
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	03/28/2014
Register:	True
Modified By:	NRLOMBAR
Last Modified:	04/14/2017

WASTE MANAGEMENT OF NEW YORK, LLC (Continued) **U003396750**

Material Name: waste oil/used oil

Tank Number: 005
Tank Id: 50737
Material Code: 0008
Common Name of Substance: Diesel

Equipment Records:
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
D00 - Pipe Type - No Piping
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Location: Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type: Steel/Carbon Steel/Iron
Tank Status: Closed - Removed
Pipe Model: Not reported
Install Date: 10/01/1990
Capacity Gallons: 1000
Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Date Tank Closed: 01/01/1990
Register: True
Modified By: TRANSLAT
Last Modified: 04/14/2017
Material Name: diesel

Tank Number: 006
Tank Id: 50738
Material Code: 0022
Common Name of Substance: Waste Oil/Used Oil

Equipment Records:
D00 - Pipe Type - No Piping
G01 - Tank Secondary Containment - Diking (Aboveground)
H06 - Tank Leak Detection - Impervious Barrier/Concrete Pad (A/G)
L00 - Piping Leak Detection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
A01 - Tank Internal Protection - Epoxy Liner
E00 - Piping Secondary Containment - None
I04 - Overfill - Product Level Gauge (A/G)
J00 - Dispenser - None
B01 - Tank External Protection - Painted/Asphalt Coating
K00 - Spill Prevention - None

Tank Location: Aboveground - on saddles, legs, racks, etc.... Tank bottom is elevated above grade or tank pad, allowing visual inspection.
Tank Type: Steel/Carbon Steel/Iron

WASTE MANAGEMENT OF NEW YORK, LLC (Continued) **U003396750**

Tank Status:	Closed - Removed
Pipe Model:	Not reported
Install Date:	01/01/1990
Capacity Gallons:	1100
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	07/28/2009
Register:	True
Modified By:	NRLOMBAR
Last Modified:	04/14/2017
Material Name:	waste oil/used oil

Tank Number:	007
Tank Id:	53500
Material Code:	0013
Common Name of Substance:	Lube Oil

Equipment Records:

J02 - Dispenser - Suction Dispenser
E00 - Piping Secondary Containment - None
K01 - Spill Prevention - Catch Basin
L09 - Piping Leak Detection - Exempt Suction Piping
F00 - Pipe External Protection - None
G04 - Tank Secondary Containment - Double-Walled (Underground)
H06 - Tank Leak Detection - Impervious Barrier/Concrete Pad (A/G)
C01 - Pipe Location - Aboveground
I04 - Overfill - Product Level Gauge (A/G)
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Location:	Aboveground - on saddles, legs, racks, etc.... Tank bottom is elevated above grade or tank pad, allowing visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Closed - Removed
Pipe Model:	Not reported
Install Date:	11/01/1997
Capacity Gallons:	1000
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	03/28/2014
Register:	True
Modified By:	NRLOMBAR
Last Modified:	04/14/2017
Material Name:	lube oil

Tank Number:	008
Tank Id:	53501
Material Code:	0010
Common Name of Substance:	Hydraulic Oil

Equipment Records:

E00 - Piping Secondary Containment - None

WASTE MANAGEMENT OF NEW YORK, LLC (Continued) **U003396750**

K01 - Spill Prevention - Catch Basin
L09 - Piping Leak Detection - Exempt Suction Piping
C01 - Pipe Location - Aboveground
I04 - Overfill - Product Level Gauge (A/G)
F00 - Pipe External Protection - None
J02 - Dispenser - Suction Dispenser
H06 - Tank Leak Detection - Impervious Barrier/Concrete Pad (A/G)
G04 - Tank Secondary Containment - Double-Walled (Underground)
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Location: Aboveground - on saddles, legs, racks, etc.... Tank bottom is elevated above grade or tank pad, allowing visual inspection.
Tank Type: Steel/Carbon Steel/Iron
Tank Status: Closed - Removed
Pipe Model: Not reported
Install Date: 11/01/1997
Capacity Gallons: 1000
Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Date Tank Closed: 03/28/2014
Register: True
Modified By: NRLOMBAR
Last Modified: 04/14/2017
Material Name: hydraulic oil

Tank Number: 009
Tank Id: 54991
Material Code: 0010
Common Name of Substance: Hydraulic Oil

Equipment Records:

J02 - Dispenser - Suction Dispenser
E00 - Piping Secondary Containment - None
K01 - Spill Prevention - Catch Basin
L09 - Piping Leak Detection - Exempt Suction Piping
G01 - Tank Secondary Containment - Diking (Aboveground)
H06 - Tank Leak Detection - Impervious Barrier/Concrete Pad (A/G)
C01 - Pipe Location - Aboveground
I04 - Overfill - Product Level Gauge (A/G)
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Location: Aboveground - on saddles, legs, racks, etc.... Tank bottom is elevated above grade or tank pad, allowing visual inspection.
Tank Type: Steel/Carbon Steel/Iron
Tank Status: Closed - Removed
Pipe Model: Not reported
Install Date: 01/01/1990
Capacity Gallons: 550
Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Date Tank Closed: 03/28/2014

WASTE MANAGEMENT OF NEW YORK, LLC (Continued) **U003396750**

Register:	True
Modified By:	NRLOMBAR
Last Modified:	04/14/2017
Material Name:	hydraulic oil

V163 **NYNEX** **NY MANIFEST** **1009234497**
SSE **FLUSHING AVE & POTTER ST** **N/A**
1/8-1/4 **BROOKLYN, NY**
0.196 mi.
1033 ft. **Site 4 of 5 in cluster V**

Relative:
Higher

Actual:
26 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP000931741
Facility Status:	Not reported
Location Address 1:	FLUSHING AVE & POTTER ST
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	Not reported
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP000931741
Mailing Name:	NYNEX
Mailing Contact:	V ORCHIER
Mailing Address 1:	221 EAST 37TH STREET
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10016
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	2123387126

NY MANIFEST:

Document ID:	MIA4512929
Manifest Status:	K
seq:	Not reported
Year:	1996
Trans1 State ID:	Not reported
Trans2 State ID:	Not reported
Generator Ship Date:	10/23/1996
Trans1 Recv Date:	10/23/1996
Trans2 Recv Date:	10/25/1996
TSD Site Recv Date:	11/07/1996
Part A Recv Date:	/ /
Part B Recv Date:	12/04/1996
Generator EPA ID:	NYP000931741
Trans1 EPA ID:	NYD010951986
Trans2 EPA ID:	NYD046765574
TSDF ID 1:	MID096963194
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported

NYNEX (Continued) **1009234497**

Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	D008 - LEAD 5.0 MG/L TCLP
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	02400
Units:	P - Pounds
Number of Containers:	006
Container Type:	DM - Metal drums, barrels
Handling Method:	L Landfill.
Specific Gravity:	100

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

X164 **CON EDISON** **NY MANIFEST** **S121967313**
NNE **VARICK ST & MESEROLE ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.197 mi.
1038 ft. **Site 4 of 16 in cluster X**

Relative: **Lower**
Actual: **11 ft.**

NY MANIFEST:

Country:	USA
EPA ID:	NYP004779625
Facility Status:	Not reported
Location Address 1:	W SIDE VARICK ST & MESEROLE ST
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004779625
Mailing Name:	CON EDISON
Mailing Contact:	DENNIS HUACON
Mailing Address 1:	4 IRVING PL 15TH FL
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	2124603770

CON EDISON (Continued) **S121967313**

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2015
Trans1 State ID:	NJ0000027193
Trans2 State ID:	Not reported
Generator Ship Date:	05/06/2015
Trans1 Recv Date:	05/06/2015
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	05/11/2015
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004779625
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD002200046
TSDF ID 2:	Not reported
Manifest Tracking Number:	014454086JJK
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	4000
Units:	P - Pounds
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

X165 **CON EDISON** **NY MANIFEST** **S119073993**
NNE **VARICK & MESEROLE ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.197 mi.
1038 ft. **Site 5 of 16 in cluster X**

Relative:
Lower

Actual:
11 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004741039
Facility Status:	Not reported
Location Address 1:	VARICK & MESEROLE ST
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004741039
Mailing Name:	CON EDISON
Mailing Contact:	TOM TEELING
Mailing Address 1:	4 IRVING PLACE - 15TH FLOOR
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2015
Trans1 State ID:	NJ0000027193
Trans2 State ID:	Not reported
Generator Ship Date:	03/02/2015
Trans1 Recv Date:	03/02/2015
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	03/04/2015
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004741039
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD002200046
TSDF ID 2:	Not reported
Manifest Tracking Number:	014087302JJK
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported

CON EDISON (Continued) **S119073993**

Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	3000
Units:	P - Pounds
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

X166 **CON EDISON** **NY MANIFEST** **S118256554**
NNE **VARICK ST & MESEROLE ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.197 mi.
1038 ft. **Site 6 of 16 in cluster X**

Relative: **Lower**
Actual: **11 ft.**

NY MANIFEST:

Country:	USA
EPA ID:	NYP004779476
Facility Status:	Not reported
Location Address 1:	VARICK ST & MESEROLE ST
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004779476
Mailing Name:	CON EDISON
Mailing Contact:	DENNIS HUACON
Mailing Address 1:	4 IRVING PL 15TH FL
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	2124603770

CON EDISON (Continued) **S118256554**

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2015
Trans1 State ID:	NJ0000027193
Trans2 State ID:	Not reported
Generator Ship Date:	05/06/2015
Trans1 Recv Date:	05/06/2015
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	05/11/2015
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004779476
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD002200046
TSDF ID 2:	Not reported
Manifest Tracking Number:	014454085JJK
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	9000
Units:	P - Pounds
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

X167 **CON EDISON** **NY MANIFEST** **S117740910**
NNE **VARICK AND MESEROLE ST VAULT 3** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.197 mi.
1038 ft. **Site 7 of 16 in cluster X**

Relative:
Lower

Actual:
11 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004741005
Facility Status:	Not reported
Location Address 1:	VARICK & MESEROLE ST
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004741005
Mailing Name:	CON EDISON
Mailing Contact:	TOM TEELING
Mailing Address 1:	4 IRVING PLACE - 15TH FLOOR
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2015
Trans1 State ID:	NJ0000027193
Trans2 State ID:	Not reported
Generator Ship Date:	03/02/2015
Trans1 Recv Date:	03/02/2015
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	03/04/2015
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004741005
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD002200046
TSDF ID 2:	Not reported
Manifest Tracking Number:	014087300JJK
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported

CON EDISON (Continued) **S117740910**

Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	3000
Units:	P - Pounds
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

X168 **CON EDISON** **RCRA NonGen / NLR** **1018279298**
NNE **VARICK & MESEROLE ST** **NYP004741039**
1/8-1/4 **BROOKLYN, NY 11237**
0.197 mi.
1038 ft. **Site 8 of 16 in cluster X**

Relative: **Lower**
Actual: **11 ft.**

RCRA NonGen / NLR:

Date form received by agency:	02/05/2016
Facility name:	CON EDISON
Site name:	CON EDISON - VAULT 3605
Facility address:	VARICK & MESEROLE ST BROOKLYN, NY 11237
EPA ID:	NYP004741039
Mailing address:	IRVING PLACE, 15TH FL NE NEW YORK, NY 10003
Contact:	THERESA BURKARD
Contact address:	IRVING PLACE, 15TH FL NE NEW YORK, NY 10003
Contact country:	US
Contact telephone:	212-460-2262
Contact email:	BURKARDT@CONED.COM
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	CONSOLIDATED EDISON COMPANY OF NY, INC.
Owner/operator address:	IRVING PLACE NEW YORK, NY 10003
Owner/operator country:	US
Owner/operator telephone:	Not reported

CON EDISON (Continued) **1018279298**

Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 03/02/2015
Owner/Op end date: Not reported

Owner/operator name: CONSOLIDATED EDISON COMPANY OF NY, INC.
Owner/operator address: IRVING PLACE
NEW YORK, NY 10003
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 03/02/2015
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 03/02/2015
Site name: CON EDISON
Classification: Not a generator, verified

Date form received by agency: 03/02/2015
Site name: CON EDISON
Classification: Large Quantity Generator

Hazardous Waste Summary:

. Waste code: D008
. Waste name: LEAD

Biennial Reports:

Last Biennial Reporting Year: 2017

CON EDISON (Continued) **1018279298**

Annual Waste Handled:
Waste code: D008
Waste name: LEAD
Amount (Lbs): 3000

Violation Status: No violations found

X169 **CON EDISON** **NY MANIFEST** **S117740914**
NNE **VARICK & MESEROLE ST VAULT 242** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.197 mi.
1038 ft. **Site 9 of 16 in cluster X**

Relative:
Lower

Actual:
11 ft.

NY MANIFEST:
Country: USA
EPA ID: NYP004741047
Facility Status: Not reported
Location Address 1: VARICK AVE & MESEROLE ST
Code: BP
Location Address 2: V 2422
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: 11237
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYP004741047
Mailing Name: CON EDISON
Mailing Contact: TOM TEELING
Mailing Address 1: 4 IRVING PLACE - 15TH FLOOR
Mailing Address 2: Not reported
Mailing City: NEW YORK
Mailing State: NY
Mailing Zip: 10003
Mailing Zip 4: Not reported
Mailing Country: USA
Mailing Phone: Not reported

NY MANIFEST:
Document ID: Not reported
Manifest Status: Not reported
seq: Not reported
Year: 2015
Trans1 State ID: NJ0000027193
Trans2 State ID: Not reported
Generator Ship Date: 03/02/2015
Trans1 Recv Date: 03/02/2015
Trans2 Recv Date: Not reported
TSD Site Recv Date: 03/04/2015
Part A Recv Date: Not reported
Part B Recv Date: Not reported
Generator EPA ID: NYP004741047
Trans1 EPA ID: Not reported
Trans2 EPA ID: Not reported
TSDF ID 1: NJD002200046
TSDF ID 2: Not reported

CON EDISON (Continued) **S117740914**

Manifest Tracking Number:	014087301JJK
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	2000
Units:	P - Pounds
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

X170 **CON EDISON** **NJ MANIFEST** **S120671513**
NNE **W SIDE VARICK ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.197 mi.
1038 ft. **Site 10 of 16 in cluster X**

Relative: NJ MANIFEST:
Lower

EPA Id:	NYP004779625
Mail Address:	IRVING PL15TH FL NE
Mail City/State/Zip:	NEW YORK, NY 10003
Facility Phone:	Not reported
Emergency Phone:	Not reported
Contact:	THERESA BURKARD
Comments:	Not reported
SIC Code:	Not reported
County:	NY047
Municipal:	Not reported
Previous EPA Id:	Not reported
Gen Flag:	Not reported
Trans Flag:	Not reported
TSDF Flag:	Not reported
Name Change:	Not reported
Date Change:	Not reported

Actual:
11 ft.

CON EDISON (Continued) **S120671513**

Manifest:

Manifest Number:	014454086JJK
EPA ID:	NYP004779625
Date Shipped:	5/6/2015
TSDF EPA ID:	NJD002200046
Transporter EPA ID:	NJ0000027193
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	Not reported
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	Not reported
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	NEW YORK, NY 10003
Reason Load Was Rejected:	Not reported

X171 **CON EDISON** **NJ MANIFEST** **S120668124**
NNE **VARICK & MESEROLE ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.197 mi.
1038 ft. **Site 11 of 16 in cluster X**

Relative: **Lower**

Actual: **11 ft.**

NJ MANIFEST:

EPA Id:	NYP004741039
Mail Address:	IRVING PLACE, 15TH FL NE
Mail City/State/Zip:	NEW YORK, NY 10003
Facility Phone:	Not reported
Emergency Phone:	Not reported
Contact:	THERESA BURKARD

CON EDISON (Continued) **S120668124**

Comments:	Not reported
SIC Code:	Not reported
County:	NY047
Municipal:	Not reported
Previous EPA Id:	Not reported
Gen Flag:	Not reported
Trans Flag:	Not reported
TSDF Flag:	Not reported
Name Change:	Not reported
Date Change:	Not reported

Manifest:

Manifest Number:	014087302JJK
EPA ID:	NYP004741039
Date Shipped:	3/2/2015
TSDF EPA ID:	NJD002200046
Transporter EPA ID:	NJ0000027193
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	Not reported
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	Not reported
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	NEW YORK, NY 10003
Reason Load Was Rejected:	Not reported

EPA Id:	NYP004741005
Mail Address:	IRVING PLACE, 15TH FL NE
Mail City/State/Zip:	NEW YORK, NY 10003

CON EDISON (Continued) **S120668124**

Facility Phone:	Not reported
Emergency Phone:	Not reported
Contact:	THERESA BURKARD
Comments:	Not reported
SIC Code:	Not reported
County:	NY047
Municipal:	Not reported
Previous EPA Id:	Not reported
Gen Flag:	Not reported
Trans Flag:	Not reported
TSDF Flag:	Not reported
Name Change:	Not reported
Date Change:	Not reported

Manifest:

Manifest Number:	014087300JJK
EPA ID:	NYP004741005
Date Shipped:	3/2/2015
TSDF EPA ID:	NJD002200046
Transporter EPA ID:	NJ0000027193
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	Not reported
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	Not reported
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	NEW YORK, NY 10003
Reason Load Was Rejected:	Not reported

X172 **CON EDISON** **RCRA NonGen / NLR** **1019324937**
NNE **VARICK ST & MESEROLE ST** **FINDS** **NYP004779476**
1/8-1/4 **BROOKLYN, NY 11237** **ECHO**
0.197 mi.
1038 ft. **Site 12 of 16 in cluster X**

Relative:
Lower

Actual:
11 ft.

RCRA NonGen / NLR:

Date form received by agency:	02/05/2016
Facility name:	CON EDISON
Site name:	CON EDISON - MANHOLE 43892
Facility address:	VARICK ST & MESEROLE ST BROOKLYN, NY 11237
EPA ID:	NYP004779476
Mailing address:	IRVING PLACE, 15TH FL NE NEW YORK, NY 10003
Contact:	THERESA BURKARD
Contact address:	IRVING PLACE, 15TH FL NE NEW YORK, NY 10003
Contact country:	US
Contact telephone:	212-460-2262
Contact email:	BURKARDT@CONED.COM
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	CONSOLIDATED EDISON COMPANY OF NY, INC.
Owner/operator address:	IRVING PLACE NEW YORK, NY 10003
Owner/operator country:	US
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	05/06/2015
Owner/Op end date:	Not reported

Owner/operator name:	CONSOLIDATED EDISON COMPANY OF NY, INC.
Owner/operator address:	IRVING PLACE NEW YORK, NY 10003
Owner/operator country:	US
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	05/06/2015
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No

CON EDISON (Continued) **1019324937**

Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 05/06/2015
Site name: CON EDISON
Classification: Not a generator, verified

Date form received by agency: 05/06/2015
Site name: CON EDISON
Classification: Large Quantity Generator

Hazardous Waste Summary:

. Waste code: D008
. Waste name: LEAD

Biennial Reports:

Last Biennial Reporting Year: 2017

Annual Waste Handled:
Waste code: D008
Waste name: LEAD
Amount (Lbs): 9000

Violation Status: No violations found

FINDS:

Registry ID: 110069383367

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZARDOUS WASTE BIENNIAL REPORTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1019324937

CON EDISON (Continued) **1019324937**

Registry ID: 110069383367
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110069383367

X173 **CON EDISON** **RCRA NonGen / NLR** **1018279295**
NNE **VARICK AND MESEROLE ST VAULT 3** **FINDS** **NYP004741005**
1/8-1/4 **BROOKLYN, NY 11237** **ECHO**
0.197 mi.
1038 ft. **Site 13 of 16 in cluster X**

Relative:
Lower

Actual:
11 ft.

RCRA NonGen / NLR:
Date form received by agency: 02/05/2016
Facility name: CON EDISON
Site name: CON EDISON - VAULT 3570
Facility address: VARICK & MESEROLE ST
BROOKLYN, NY 11237
EPA ID: NYP004741005
Mailing address: IRVING PLACE, 15TH FL NE
NEW YORK, NY 10003
Contact: THERESA BURKARD
Contact address: IRVING PLACE, 15TH FL NE
NEW YORK, NY 10003
Contact country: US
Contact telephone: 212-460-2262
Contact email: BURKARDT@CONED.COM
EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: CONSOLIDATED EDISON COMPANY OF NY, INC.
Owner/operator address: IRVING PLACE
NEW YORK, NY 10003
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 03/02/2015
Owner/Op end date: Not reported

Owner/operator name: CONSOLIDATED EDISON COMPANY OF NY, INC.
Owner/operator address: IRVING PLACE
NEW YORK, NY 10003
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 03/02/2015
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No

CON EDISON (Continued) **1018279295**

Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 03/02/2015
Site name: CON EDISON
Classification: Not a generator, verified

Date form received by agency: 03/02/2015
Site name: CON EDISON
Classification: Large Quantity Generator

Hazardous Waste Summary:

. Waste code: D008
. Waste name: LEAD

Biennial Reports:

Last Biennial Reporting Year: 2017

Annual Waste Handled:
Waste code: D008
Waste name: LEAD
Amount (Lbs): 3000

Violation Status: No violations found

FINDS:

Registry ID: 110067688657

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

HAZARDOUS WASTE BIENNIAL REPORTER

CON EDISON (Continued) **1018279295**

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1018279295
Registry ID: 110067688657
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110067688657

U174 **FLUSHING DRY CLEANERS** **NY DRYCLEANERS** **S110246608**
South **1065 FLUSHING AVENUE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.197 mi.
1039 ft. **Site 5 of 9 in cluster U**

Relative: **Higher**
Actual: **29 ft.**

DRYCLEANERS:
Name: FLUSHING DRY CLEANERS
Address: 1065 FLUSHING AVENUE
City,State,Zip: BROOKLYN, NY 11237
Facility ID: 2-6104-00998
Phone Number: 718-417-8758
Region: Not reported
Registration Effective Date: N/A
Inspection Date: 03APR11
Install Date: 96/03
Drop Shop: Y
Shutdown: Not reported
Alternate Solvent: Not reported
Current Business: Not reported

S175 **SERVICE PRINTS LTD** **RCRA NonGen / NLR** **1000432504**
SW **1 GRATHAM ST** **FINDS** **NYD982182149**
1/8-1/4 **BROOKLYN, NY 11206** **ECHO**
0.197 mi. **NY MANIFEST**
1040 ft. **Site 9 of 9 in cluster S**

Relative: **Lower**
Actual: **18 ft.**

RCRA NonGen / NLR:
Date form received by agency: 01/01/2007
Facility name: SERVICE PRINTS LTD
Facility address: 1 GRATHAM ST
BROOKLYN, NY 11206-3807
EPA ID: NYD982182149
Mailing address: GRATHAM ST
BROOKLYN, NY 11206
Contact: Not reported
Contact address: GRATHAM ST
BROOKLYN, NY 11206
Contact country: US
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

SERVICE PRINTS LTD (Continued) **1000432504**

Owner/operator name: UNKNOWN
Owner/operator address: NOT REQUIRED
NOT REQUIRED, WY 99999
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: UNKNOWN
Owner/operator address: NOT REQUIRED
NOT REQUIRED, WY 99999
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2006
Site name: SERVICE PRINTS LTD
Classification: Not a generator, verified

Date form received by agency: 07/08/1999
Site name: SERVICE PRINTS LTD
Classification: Not a generator, verified

Date form received by agency: 04/27/1987
Site name: SERVICE PRINTS LTD
Classification: Large Quantity Generator

SERVICE PRINTS LTD (Continued) **1000432504**

Hazardous Waste Summary:

. Waste code: D001
. Waste name: IGNITABLE WASTE

Violation Status: No violations found

FINDS:

Registry ID: 110004414786

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000432504
Registry ID: 110004414786
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110004414786

NY MANIFEST:
Country: USA
EPA ID: NYD982182149
Facility Status: Not reported
Location Address 1: 1 GRATTAN ST
Code: BP
Location Address 2: Not reported
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: 11206
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYD982182149
Mailing Name: SERVICE PRINTS
Mailing Contact: SERVICE PRINTS
Mailing Address 1: 1 GRATTAN STREET
Mailing Address 2: Not reported
Mailing City: BROOKLYN
Mailing State: NY
Mailing Zip: 11206
Mailing Zip 4: Not reported
Mailing Country: USA
Mailing Phone: 7184975793

NY MANIFEST:
Document ID: NJA0788805

SERVICE PRINTS LTD (Continued) **1000432504**

Manifest Status:	K
seq:	Not reported
Year:	1990
Trans1 State ID:	NJSWAS300
Trans2 State ID:	Not reported
Generator Ship Date:	03/27/1990
Trans1 Recv Date:	03/27/1990
Trans2 Recv Date:	/ /
TSD Site Recv Date:	03/27/1990
Part A Recv Date:	06/06/1990
Part B Recv Date:	04/24/1990
Generator EPA ID:	NYD982182149
Trans1 EPA ID:	NJD991291105
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	D008 - LEAD 5.0 MG/L TCLP
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	13750
Units:	P - Pounds
Number of Containers:	025
Container Type:	DM - Metal drums, barrels
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	100

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

Y176 **180 MORGAN LLC** **NY AST** **A100291636**
NW **180 MORGAN AVENUE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.198 mi.
1044 ft. **Site 1 of 14 in cluster Y**

Relative: AST:
Lower

Actual:
12 ft.

Name:	180 MORGAN LLC
Address:	180 MORGAN AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Region:	STATE
DEC Region:	2
Site Status:	Active

180 MORGAN LLC (Continued) **A100291636**

Facility Id:	2-608922
Program Type:	PBS
UTM X:	590133.98013
UTM Y:	4507045.74572
Expiration Date:	04/17/2020
Site Type:	Manufacturing (Other than Chemical)/Processing

Affiliation Records:

Site Id:	30770
Affiliation Type:	Mail Contact
Company Name:	2222 128TH STREET
Contact Type:	Not reported
Contact Name:	RIKO BENAZIC
Address1:	Not reported
Address2:	Not reported
City:	COLLEGE POINT
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(754) 234-2423
EMail:	BENAZIC1@GMAIL.COM
Fax Number:	Not reported
Modified By:	MRBARROW
Date Last Modified:	2017-07-17

Site Id:	30770
Affiliation Type:	Facility Operator
Company Name:	180 MORGAN LLC
Contact Type:	Not reported
Contact Name:	NA
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	Not reported
EMail:	Not reported
Fax Number:	Not reported
Modified By:	MRBARROW
Date Last Modified:	2017-07-17

Site Id:	30770
Affiliation Type:	Emergency Contact
Company Name:	RIKO REALTY, LLC
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	999
Phone:	Not reported
EMail:	Not reported
Fax Number:	Not reported
Modified By:	MRBARROW
Date Last Modified:	2017-07-17

180 MORGAN LLC (Continued) **A100291636**

Site Id:	30770
Affiliation Type:	Facility Owner
Company Name:	RIKO REALTY, LLC
Contact Type:	ATTORNEY
Contact Name:	BALRAM KAKKAR
Address1:	2222 128TH STREET
Address2:	Not reported
City:	COLLEGE POINT
State:	NY
Zip Code:	11356
Country Code:	001
Phone:	(754) 234-2423
EMail:	Not reported
Fax Number:	Not reported
Modified By:	MRBARROW
Date Last Modified:	2017-07-17

Tank Info:

Tank Number:	001
Tank Id:	65971
Material Code:	0000
Common Name of Substance:	Empty

Equipment Records:

	L09 - Piping Leak Detection - Exempt Suction Piping
	H00 - Tank Leak Detection - None
	I00 - Overfill - None
	F00 - Pipe External Protection - None
	B00 - Tank External Protection - None
	J02 - Dispenser - Suction Dispenser
	C01 - Pipe Location - Aboveground
	G01 - Tank Secondary Containment - Diking (Aboveground)
	D01 - Pipe Type - Steel/Carbon Steel/Iron
	A00 - Tank Internal Protection - None
Tank Location:	Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Temporarily Out of Service
Pipe Model:	Not reported
Install Date:	Not reported
Capacity Gallons:	5000
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	Not reported
Register:	True
Modified By:	MRBARROW
Last Modified:	07/17/2017
Material Name:	empty

W177 **FL MINI MART, CORP** **NY UST** **U000411999**
SE **1127 FLUSHING AVENUE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.199 mi.
1050 ft. **Site 2 of 3 in cluster W**

Relative:
Higher

Actual:
23 ft.

UST:

Name:	FL MINI MART, CORP
Address:	1127 FLUSHING AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Id/Status:	2-600276 / Active
Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	03/03/2020
UTM X:	590650.81613
UTM Y:	4506626.43451
Site Type:	Retail Gasoline Sales

Affiliation Records:

Site Id:	22259
Affiliation Type:	Mail Contact
Company Name:	FL MINI MART, CORP
Contact Type:	Not reported
Contact Name:	MR. ROCKY RAMKELLAWAN
Address1:	1127 FLUSHING AVENUE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(718) 386-7732
EMail:	Not reported
Fax Number:	Not reported
Modified By:	NTFREEMA
Date Last Modified:	2015-10-01

Site Id:	22259
Affiliation Type:	Facility Operator
Company Name:	FL MINI MART, CORP
Contact Type:	Not reported
Contact Name:	NANKISHORE RAMKELLAWAN
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 386-7732
EMail:	Not reported
Fax Number:	Not reported
Modified By:	AYLAGATI
Date Last Modified:	2017-02-02

Site Id:	22259
Affiliation Type:	Emergency Contact
Company Name:	MISHGY, LLC
Contact Type:	Not reported
Contact Name:	MR. ROCKY RAMKELLAWAN
Address1:	Not reported

FL MINI MART, CORP (Continued) **U000411999**

Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	999
Phone:	(718) 386-7732
EMail:	Not reported
Fax Number:	Not reported
Modified By:	NTFREEMA
Date Last Modified:	2015-10-01

Site Id:	22259
Affiliation Type:	Facility Owner
Company Name:	MISHGY, LLC
Contact Type:	PRESIDENT
Contact Name:	MR. ROCKY RAMKELLAWAN
Address1:	1127 FLUSHING AVE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(718) 386-7732
EMail:	Not reported
Fax Number:	Not reported
Modified By:	NTFREEMA
Date Last Modified:	2015-10-01

Tank Info:

Tank Number:	001
Tank ID:	41786
Tank Status:	Closed Prior to Micro Conversion, 03/91
Material Name:	Closed Prior to Micro Conversion, 03/91
Capacity Gallons:	550
Install Date:	Not reported
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0009
Common Name of Substance:	Gasoline

Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
H00 - Tank Leak Detection - None
I00 - Overfill - None
G00 - Tank Secondary Containment - None
D02 - Pipe Type - Galvanized Steel

FL MINI MART, CORP (Continued) **U000411999**

F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number: 002
Tank ID: 41787
Tank Status: Closed Prior to Micro Conversion, 03/91
Material Name: Closed Prior to Micro Conversion, 03/91
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
H00 - Tank Leak Detection - None
I00 - Overfill - None
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number: 003
Tank ID: 41788
Tank Status: Closed Prior to Micro Conversion, 03/91
Material Name: Closed Prior to Micro Conversion, 03/91
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

FL MINI MART, CORP (Continued) **U000411999**

C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
H00 - Tank Leak Detection - None
I00 - Overfill - None
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number: 004
Tank ID: 41789
Tank Status: Closed Prior to Micro Conversion, 03/91
Material Name: Closed Prior to Micro Conversion, 03/91
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
H00 - Tank Leak Detection - None
I00 - Overfill - None
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number: 005
Tank ID: 41790
Tank Status: Closed Prior to Micro Conversion, 03/91
Material Name: Closed Prior to Micro Conversion, 03/91
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported

FL MINI MART, CORP (Continued) **U000411999**

Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number: 006
Tank ID: 41791
Tank Status: Closed Prior to Micro Conversion, 03/91
Material Name: Closed Prior to Micro Conversion, 03/91
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number: 007
Tank ID: 41792
Tank Status: Closed Prior to Micro Conversion, 03/91
Material Name: Closed Prior to Micro Conversion, 03/91
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground

FL MINI MART, CORP (Continued) **U000411999**

Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
H00 - Tank Leak Detection - None
I00 - Overfill - None
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number: 008
Tank ID: 41793
Tank Status: Closed Prior to Micro Conversion, 03/91
Material Name: Closed Prior to Micro Conversion, 03/91
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number: 009
Tank ID: 41794
Tank Status: Closed Prior to Micro Conversion, 03/91

FL MINI MART, CORP (Continued) **U000411999**

Material Name:	Closed Prior to Micro Conversion, 03/91
Capacity Gallons:	550
Install Date:	Not reported
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0009
Common Name of Substance:	Gasoline
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
H00 - Tank Leak Detection - None
I00 - Overfill - None
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number:	010
Tank ID:	41795
Tank Status:	Closed Prior to Micro Conversion, 03/91
Material Name:	Closed Prior to Micro Conversion, 03/91
Capacity Gallons:	550
Install Date:	Not reported
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0009
Common Name of Substance:	Gasoline
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None

FL MINI MART, CORP (Continued) **U000411999**

B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number: 011
Tank ID: 41796
Tank Status: Closed Prior to Micro Conversion, 03/91
Material Name: Closed Prior to Micro Conversion, 03/91
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
H00 - Tank Leak Detection - None
I00 - Overfill - None
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number: 012
Tank ID: 41797
Tank Status: Closed Prior to Micro Conversion, 03/91
Material Name: Closed Prior to Micro Conversion, 03/91
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground

FL MINI MART, CORP (Continued) **U000411999**

G00 - Tank Secondary Containment - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number:	013
Tank ID:	41798
Tank Status:	In Service
Material Name:	In Service
Capacity Gallons:	4000
Install Date:	05/01/1975
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0008
Common Name of Substance:	Diesel
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	NTFREEMA
Last Modified:	04/14/2017

Equipment Records:

L01 - Piping Leak Detection - Interstitial - Electronic Monitoring
B07 - Tank External Protection - Retrofitted Sacrificial Anode
C02 - Pipe Location - Underground/On-ground
I02 - Overfill - High Level Alarm
K01 - Spill Prevention - Catch Basin
E00 - Piping Secondary Containment - None
J01 - Dispenser - Pressurized Dispenser
D02 - Pipe Type - Galvanized Steel
H05 - Tank Leak Detection - In-Tank System (ATG)
I03 - Overfill - Automatic Shut-Off
H01 - Tank Leak Detection - Interstitial - Electronic Monitoring
A00 - Tank Internal Protection - None
G04 - Tank Secondary Containment - Double-Walled (Underground)
L07 - Piping Leak Detection - Pressurized Piping Leak Detector
F07 - Pipe External Protection - Retrofitted Sacrificial Anode

Tank Number:	014
Tank ID:	41799
Tank Status:	In Service
Material Name:	In Service
Capacity Gallons:	4000
Install Date:	09/01/1991
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	2712

FL MINI MART, CORP (Continued) **U000411999**

Common Name of Substance: Gasoline/Ethanol

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: NTFREEMA
Last Modified: 04/14/2017

Equipment Records:

B07 - Tank External Protection - Retrofitted Sacrificial Anode
C02 - Pipe Location - Underground/On-ground
L01 - Piping Leak Detection - Interstitial - Electronic Monitoring
K01 - Spill Prevention - Catch Basin
E00 - Piping Secondary Containment - None
I02 - Overfill - High Level Alarm
J01 - Dispenser - Pressurized Dispenser
D02 - Pipe Type - Galvanized Steel
H05 - Tank Leak Detection - In-Tank System (ATG)
A00 - Tank Internal Protection - None
H01 - Tank Leak Detection - Interstitial - Electronic Monitoring
I03 - Overfill - Automatic Shut-Off
G04 - Tank Secondary Containment - Double-Walled (Underground)
F07 - Pipe External Protection - Retrofitted Sacrificial Anode
L07 - Piping Leak Detection - Pressurized Piping Leak Detector

Tank Number: 015
Tank ID: 41800
Tank Status: In Service
Material Name: In Service
Capacity Gallons: 4000
Install Date: 09/01/1991
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 2712
Common Name of Substance: Gasoline/Ethanol

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: NTFREEMA
Last Modified: 04/14/2017

Equipment Records:

B07 - Tank External Protection - Retrofitted Sacrificial Anode
C02 - Pipe Location - Underground/On-ground
L01 - Piping Leak Detection - Interstitial - Electronic Monitoring
E00 - Piping Secondary Containment - None
I02 - Overfill - High Level Alarm
K01 - Spill Prevention - Catch Basin
D02 - Pipe Type - Galvanized Steel
J01 - Dispenser - Pressurized Dispenser
H05 - Tank Leak Detection - In-Tank System (ATG)
I03 - Overfill - Automatic Shut-Off

FL MINI MART, CORP (Continued) **U000411999**

A00 - Tank Internal Protection - None
H01 - Tank Leak Detection - Interstitial - Electronic Monitoring
G04 - Tank Secondary Containment - Double-Walled (Underground)
L07 - Piping Leak Detection - Pressurized Piping Leak Detector
F07 - Pipe External Protection - Retrofitted Sacrificial Anode

Tank Number:	016
Tank ID:	41801
Tank Status:	In Service
Material Name:	In Service
Capacity Gallons:	4000
Install Date:	09/01/1991
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	2712
Common Name of Substance:	Gasoline/Ethanol
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	NTFREEMA
Last Modified:	04/14/2017

Equipment Records:

L01 - Piping Leak Detection - Interstitial - Electronic Monitoring
K01 - Spill Prevention - Catch Basin
B07 - Tank External Protection - Retrofitted Sacrificial Anode
C02 - Pipe Location - Underground/On-ground
I02 - Overfill - High Level Alarm
E00 - Piping Secondary Containment - None
J01 - Dispenser - Pressurized Dispenser
D02 - Pipe Type - Galvanized Steel
H05 - Tank Leak Detection - In-Tank System (ATG)
H01 - Tank Leak Detection - Interstitial - Electronic Monitoring
I03 - Overfill - Automatic Shut-Off
A00 - Tank Internal Protection - None
G04 - Tank Secondary Containment - Double-Walled (Underground)
L07 - Piping Leak Detection - Pressurized Piping Leak Detector
F07 - Pipe External Protection - Retrofitted Sacrificial Anode

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U178 **GEIS SERVICE STATION CORP** **NY UST** **U003128213**
SSE **1070 FLUSHING AVENUE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.199 mi.
1051 ft. **Site 6 of 9 in cluster U**

Relative:
Higher

Actual:
27 ft.

UST:

Name:	GEIS SERVICE STATION CORP
Address:	1070 FLUSHING AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Id/Status:	2-600627 / Unregulated/Closed
Program Type:	PBS
Region:	STATE
DEC Region:	2

GEIS SERVICE STATION CORP (Continued) **U003128213**

Expiration Date: N/A
UTM X: 590532.40014
UTM Y: 4506488.59129
Site Type: Retail Gasoline Sales

Affiliation Records:

Site Id: 22607
Affiliation Type: Facility Owner
Company Name: SALVADOR GRULLON
Contact Type: Not reported
Contact Name: Not reported
Address1: 72-07 JAMAICA AVENUE
Address2: Not reported
City: JAMAICA
State: NY
Zip Code: 11414
Country Code: 001
Phone: (718) 386-7071
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 22607
Affiliation Type: Mail Contact
Company Name: GEIS SERVICE STATION CORP
Contact Type: Not reported
Contact Name: GIESHLER GRULLON
Address1: 72-07 JAMAICA AVENUE
Address2: Not reported
City: JAMAICA
State: NY
Zip Code: 11414
Country Code: 001
Phone: (718) 386-7071
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 22607
Affiliation Type: Facility Operator
Company Name: GEIS SERVICE STATION CORP
Contact Type: Not reported
Contact Name: GEISHLER GRULLON
Address1: Not reported
Address2: Not reported
City: Not reported
State: NN
Zip Code: Not reported
Country Code: 001
Phone: (718) 386-7071
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 22607

GEIS SERVICE STATION CORP (Continued) **U003128213**

Affiliation Type:	Emergency Contact
Company Name:	SALVADOR GRULLON
Contact Type:	Not reported
Contact Name:	GEISHLER GRULLON
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 386-7071
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	001
Tank ID:	43126
Tank Status:	Closed - In Place
Material Name:	Closed - In Place
Capacity Gallons:	550
Install Date:	12/01/1951
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0009
Common Name of Substance:	Gasoline
Tightness Test Method:	03
Date Test:	07/01/1993
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number:	002
Tank ID:	43127
Tank Status:	Closed - In Place
Material Name:	Closed - In Place
Capacity Gallons:	550
Install Date:	12/01/1951
Date Tank Closed:	Not reported

GEIS SERVICE STATION CORP (Continued) **U003128213**

Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: 03
Date Test: 07/01/1993
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number: 003
Tank ID: 43128
Tank Status: Closed - In Place
Material Name: Closed - In Place
Capacity Gallons: 550
Install Date: 12/01/1951
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: 03
Date Test: 07/01/1993
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number: 004

GEIS SERVICE STATION CORP (Continued) **U003128213**

Tank ID:	43129
Tank Status:	Closed - In Place
Material Name:	Closed - In Place
Capacity Gallons:	550
Install Date:	12/01/1951
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0009
Common Name of Substance:	Gasoline
Tightness Test Method:	03
Date Test:	07/01/1993
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number:	005
Tank ID:	43130
Tank Status:	Closed - In Place
Material Name:	Closed - In Place
Capacity Gallons:	550
Install Date:	12/01/1951
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0009
Common Name of Substance:	Gasoline
Tightness Test Method:	03
Date Test:	07/01/1993
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None

GEIS SERVICE STATION CORP (Continued) **U003128213**

J02 - Dispenser - Suction Dispenser
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number:	006
Tank ID:	43131
Tank Status:	Closed - In Place
Material Name:	Closed - In Place
Capacity Gallons:	550
Install Date:	12/01/1951
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0009
Common Name of Substance:	Gasoline
Tightness Test Method:	03
Date Test:	07/01/1993
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

F00 - Pipe External Protection - None
D02 - Pipe Type - Galvanized Steel
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
H00 - Tank Leak Detection - None
I00 - Overfill - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number:	007
Tank ID:	43132
Tank Status:	Closed - In Place
Material Name:	Closed - In Place
Capacity Gallons:	550
Install Date:	12/01/1951
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0009
Common Name of Substance:	Gasoline
Tightness Test Method:	03
Date Test:	07/01/1993
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

GEIS SERVICE STATION CORP (Continued) **U003128213**

H00 - Tank Leak Detection - None
I00 - Overfill - None
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number: 008
Tank ID: 43133
Tank Status: Closed - In Place
Material Name: Closed - In Place
Capacity Gallons: 550
Install Date: 12/01/1951
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: 03
Date Test: 07/01/1993
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
I00 - Overfill - None
H00 - Tank Leak Detection - None
B01 - Tank External Protection - Painted/Asphalt Coating
A00 - Tank Internal Protection - None

Tank Number: 009
Tank ID: 43134
Tank Status: Closed - In Place
Material Name: Closed - In Place
Capacity Gallons: 550
Install Date: 12/01/1951
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: 03
Date Test: 07/01/1993

GEIS SERVICE STATION CORP (Continued) **U003128213**

Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
F00 - Pipe External Protection - None
D02 - Pipe Type - Galvanized Steel
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number: 010
Tank ID: 43135
Tank Status: Closed - In Place
Material Name: Closed - In Place
Capacity Gallons: 550
Install Date: 12/01/1951
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: 03
Date Test: 07/01/1993
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number: 011
Tank ID: 43136
Tank Status: Closed - In Place
Material Name: Closed - In Place
Capacity Gallons: 550
Install Date: 12/01/1951
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground

GEIS SERVICE STATION CORP (Continued) **U003128213**

Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: 03
Date Test: 07/01/1993
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Tank Number: 012
Tank ID: 43137
Tank Status: Closed - In Place
Material Name: Closed - In Place
Capacity Gallons: 550
Install Date: 12/01/1951
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: 03
Date Test: 07/01/1993
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
F00 - Pipe External Protection - None
D02 - Pipe Type - Galvanized Steel
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

Z179 **BROCHO V'HATZLOCHO COMPANY** **NY AST** **U003385270**
ENE **538 JOHNSON AVENUE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.204 mi.
1076 ft. **Site 1 of 7 in cluster Z**

Relative:
Lower

Actual:
13 ft.

AST:

Name:	BROCHO V'HATZLOCHO COMPANY
Address:	538 JOHNSON AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Region:	STATE
DEC Region:	2
Site Status:	Active
Facility Id:	2-108693
Program Type:	PBS
UTM X:	590717.74517
UTM Y:	4506971.96712
Expiration Date:	09/25/2023
Site Type:	Manufacturing (Other than Chemical)/Processing

Affiliation Records:

Site Id:	3227
Affiliation Type:	Facility Owner
Company Name:	BROCHO VHATZLOCHO COMPANY
Contact Type:	PRESIDENT
Contact Name:	SHOLOM LAINE
Address1:	538 JOHNSON AVE.
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(718) 628-6700
EMail:	Not reported
Fax Number:	Not reported
Modified By:	KAKYER
Date Last Modified:	2013-09-23

Site Id:	3227
Affiliation Type:	Mail Contact
Company Name:	BROCHO VHATZLOCHO COMPANY
Contact Type:	Not reported
Contact Name:	S. LAINE
Address1:	538 JOHNSON AVENUE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(718) 628-6700
EMail:	Not reported
Fax Number:	Not reported
Modified By:	ACDANIEL
Date Last Modified:	2018-07-17

Site Id:	3227
Affiliation Type:	Facility Operator
Company Name:	BROCHO VHATZLOCHO COMPANY
Contact Type:	Not reported
Contact Name:	S. LAINE

BROCHO V'HATZLOCHO COMPANY (Continued) **U003385270**

Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 628-6700
EMail:	Not reported
Fax Number:	Not reported
Modified By:	KAKYER
Date Last Modified:	2013-09-23

Site Id:	3227
Affiliation Type:	Emergency Contact
Company Name:	BROCHO VHATZLOCHO COMPANY
Contact Type:	Not reported
Contact Name:	Y. LAINE
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 604-1100
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	100
Tank Id:	5469
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Equipment Records:

E00 - Piping Secondary Containment - None
G03 - Tank Secondary Containment - Vault (w/o access)
H00 - Tank Leak Detection - None
L09 - Piping Leak Detection - Exempt Suction Piping
J02 - Dispenser - Suction Dispenser
C01 - Pipe Location - Aboveground
I04 - Overfill - Product Level Gauge (A/G)
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
D01 - Pipe Type - Steel/Carbon Steel/Iron
F01 - Pipe External Protection - Painted/Asphalt Coating
K00 - Spill Prevention - None

Tank Location:	Aboveground - on saddles, legs, racks, etc.... Tank bottom is elevated above grade or tank pad, allowing visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	In Service
Pipe Model:	Not reported
Install Date:	01/01/1999
Capacity Gallons:	11000

BROCHO V'HATZLOCHO COMPANY (Continued) **U003385270**

Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	Not reported
Register:	True
Modified By:	KAKYER
Last Modified:	04/14/2017
Material Name:	#2 fuel oil (on-site consumption)

Z180 **THE PRINTHOUSE INC** **RCRA-LQG** **1010328451**
ENE **538 JOHNSON AVE** **NJ MANIFEST** **NYR000143248**
1/8-1/4 **BROOKLYN, NY 11237** **NY MANIFEST**
0.204 mi.
1076 ft. **Site 2 of 7 in cluster Z**

Relative:
Lower

Actual:
13 ft.

RCRA-LQG:

Date form received by agency:	02/26/2016
Facility name:	THE PRINTHOUSE INC
Facility address:	538 JOHNSON AVE BROOKLYN, NY 11237
EPA ID:	NYR000143248
Mailing address:	JOHSON AVE BROOKLYN, NY 11237
Contact:	MIRIAM KATZ
Contact address:	JOHNSON AVE BROOKLYN, NY 11237
Contact country:	US
Contact telephone:	718-628-6700
Telephone ext.:	239
Contact email:	MIRIAM@TPHNY.COM
EPA Region:	02
Land type:	Private
Classification:	Large Quantity Generator
Description:	Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:

Owner/operator name:	MIRIAM KATZ
Owner/operator address:	JOHNSON AVE BROOKLYN, NY 11237
Owner/operator country:	US
Owner/operator telephone:	718-628-6700
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	239
Legal status:	Private
Owner/Operator Type:	Owner

THE PRINTHOUSE INC (Continued) **1010328451**

Owner/Op start date: 11/01/1997
Owner/Op end date: Not reported

Owner/operator name: NO NAME FOUND
Owner/operator address: Not reported
Not reported
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 06/01/2002
Owner/Op end date: Not reported

Owner/operator name: NO NAME FOUND
Owner/operator address: Not reported
Not reported
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 06/01/2002
Owner/Op end date: Not reported

Owner/operator name: MICHAEL GAINES
Owner/operator address: JOHNSON AVE
BROOKLYN, NY 11237
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 01/01/2010
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No

THE PRINTHOUSE INC (Continued) **1010328451**

Used oil transporter: No

Historical Generators:
Date form received by agency: 05/09/2014
Site name: THE PURCHASE INC
Classification: Large Quantity Generator

Date form received by agency: 01/01/2007
Site name: PRINT HOUSE INC THE
Classification: Large Quantity Generator

Date form received by agency: 12/07/2006
Site name: PRINT HOUSE INC THE
Classification: Small Quantity Generator

Date form received by agency: 12/06/2006
Site name: PRINT HOUSE INC THE
Classification: Small Quantity Generator

Hazardous Waste Summary:

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D018
. Waste name: BENZENE

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

Biennial Reports:

Last Biennial Reporting Year: 2017

Annual Waste Handled:
Waste code: D001
Waste name: IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.
Amount (Lbs): 13761.5

Facility Has Received Notices of Violations:
Regulation violated: Not reported
Area of violation: State Statute or Regulation
Date violation determined: 10/27/2015
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 01/16/2019
Enf. disposition status: Not reported
Enf. disp. status date: Not reported

THE PRINTHOUSE INC (Continued) **1010328451**

Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 22000
Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: LDR - General
Date violation determined: 10/27/2015
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 01/06/2017
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 32550
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: LDR - General
Date violation determined: 10/27/2015
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 12/07/2015
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD IS-Preparedness and Prevention
Date violation determined: 10/27/2015
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 01/06/2017
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 32550
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD IS-Container Use and Management
Date violation determined: 10/27/2015
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 01/06/2017
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State

THE PRINTHOUSE INC (Continued) **1010328451**

Proposed penalty amount: 32550
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Container Use and Management
Date violation determined: 10/27/2015
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 01/06/2017
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 32550
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Container Use and Management
Date violation determined: 10/27/2015
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 12/07/2015
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: State Statute or Regulation
Date violation determined: 10/27/2015
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 12/07/2015
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: State Statute or Regulation
Date violation determined: 10/27/2015
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 01/06/2017
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 32550

THE PRINTHOUSE INC (Continued) **1010328451**

Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: LDR - General
Date violation determined: 10/27/2015
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 01/16/2019
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 22000
Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: Universal Waste - Small Quantity Handlers
Date violation determined: 10/27/2015
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 12/07/2015
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Pre-transport
Date violation determined: 10/27/2015
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 01/06/2017
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 32550
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD - Container Use and Management
Date violation determined: 10/27/2015
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 01/16/2019
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 22000

THE PRINTHOUSE INC (Continued) **1010328451**

Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: TSD IS-Container Use and Management
Date violation determined: 10/27/2015
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 01/16/2019
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 22000
Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: Universal Waste - Small Quantity Handlers
Date violation determined: 10/27/2015
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 01/16/2019
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 22000
Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: TSD IS-Container Use and Management
Date violation determined: 10/27/2015
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 12/07/2015
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - Pre-transport
Date violation determined: 10/27/2015
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 01/16/2019
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 22000
Paid penalty amount: 0

THE PRINTHOUSE INC (Continued) **1010328451**

Regulation violated: Not reported
Area of violation: Universal Waste - Small Quantity Handlers
Date violation determined: 10/27/2015
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 01/06/2017
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: 32550
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD IS-Preparedness and Prevention
Date violation determined: 10/27/2015
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 12/07/2015
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: TSD IS-Preparedness and Prevention
Date violation determined: 10/27/2015
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 01/16/2019
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 22000
Paid penalty amount: 0

Regulation violated: Not reported
Area of violation: Generators - Pre-transport
Date violation determined: 10/27/2015
Date achieved compliance: Not reported
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 12/07/2015
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

THE PRINTHOUSE INC (Continued) **1010328451**

Evaluation Action Summary:

Evaluation date:	01/16/2019
Evaluation:	NOT A SIGNIFICANT NON-COMPLIER
Area of violation:	Not reported
Date achieved compliance:	Not reported
Evaluation lead agency:	State
Evaluation date:	07/05/2016
Evaluation:	SIGNIFICANT NON-COMPLIER
Area of violation:	Not reported
Date achieved compliance:	Not reported
Evaluation lead agency:	State
Evaluation date:	10/27/2015
Evaluation:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation:	TSD IS-Preparedness and Prevention
Date achieved compliance:	Not reported
Evaluation lead agency:	State
Evaluation date:	10/27/2015
Evaluation:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation:	TSD IS-Container Use and Management
Date achieved compliance:	Not reported
Evaluation lead agency:	State
Evaluation date:	10/27/2015
Evaluation:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation:	Universal Waste - Small Quantity Handlers
Date achieved compliance:	Not reported
Evaluation lead agency:	State
Evaluation date:	10/27/2015
Evaluation:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation:	Generators - Pre-transport
Date achieved compliance:	Not reported
Evaluation lead agency:	State
Evaluation date:	10/27/2015
Evaluation:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation:	State Statute or Regulation
Date achieved compliance:	Not reported
Evaluation lead agency:	State
Evaluation date:	10/27/2015
Evaluation:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation:	TSD - Container Use and Management
Date achieved compliance:	Not reported
Evaluation lead agency:	State
Evaluation date:	10/27/2015
Evaluation:	COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation:	LDR - General
Date achieved compliance:	Not reported
Evaluation lead agency:	State
Evaluation date:	06/24/2010
Evaluation:	COMPLIANCE EVALUATION INSPECTION ON-SITE

THE PRINTHOUSE INC (Continued) **1010328451**

Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

NJ MANIFEST:
EPA Id: NYR000143248
Mail Address: JOHNSON AVE
Mail City/State/Zip: BROOKLYN, NY 11237
Facility Phone: Not reported
Emergency Phone: Not reported
Contact: MIRIAM KATZ
Comments: Not reported
SIC Code: Not reported
County: NY047
Municipal: Not reported
Previous EPA Id: Not reported
Gen Flag: Not reported
Trans Flag: Not reported
TSDF Flag: Not reported
Name Change: Not reported
Date Change: Not reported

Manifest:
Manifest Number: 000049855SKS
EPA ID: NYR000143248
Date Shipped: 08/03/2007
TSDF EPA ID: NJD002182897
Transporter EPA ID: TXR000050930
Transporter 2 EPA ID: NJD071629976
Transporter 3 EPA ID: Not reported
Transporter 4 EPA ID: Not reported
Transporter 5 EPA ID: Not reported
Transporter 6 EPA ID: Not reported
Transporter 7 EPA ID: Not reported
Transporter 8 EPA ID: Not reported
Transporter 9 EPA ID: Not reported
Transporter 10 EPA ID: Not reported
Date Trans1 Transported Waste: 08/03/2007
Date Trans2 Transported Waste: 08/14/2007
Date Trans3 Transported Waste: Not reported
Date Trans4 Transported Waste: Not reported
Date Trans5 Transported Waste: Not reported
Date Trans6 Transported Waste: Not reported
Date Trans7 Transported Waste: Not reported
Date Trans8 Transported Waste: Not reported
Date Trans9 Transported Waste: Not reported
Date Trans10 Transported Waste: Not reported
Date TSDF Received Waste: 08/14/2007
TSDF EPA Facility Name: Not reported
QTY Units: Not reported
Transporter SEQ ID: Not reported
Transporter-1 Date: Not reported
Waste SEQ ID: Not reported
Waste Type Code 2: Not reported
Waste Type Code 3: Not reported
Waste Type Code 4: Not reported
Waste Type Code 5: Not reported
Waste Type Code 6: Not reported

THE PRINTHOUSE INC (Continued) **1010328451**

Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	BROOKLYN, NY 11237
Reason Load Was Rejected:	Not reported

Waste:

Manifest Year:	Not reported
Waste Code:	D001
Hand Code:	H06
Quantity:	1400 P

NY MANIFEST:

Country:	USA
EPA ID:	NYR000143248
Facility Status:	Not reported
Location Address 1:	538 JOHNSON AVE
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYR000143248
Mailing Name:	THE PRINTHOUSE INC
Mailing Contact:	YOSEF LAINE
Mailing Address 1:	538 JOHNSON AVENUE
Mailing Address 2:	Not reported
Mailing City:	BROOKLYN
Mailing State:	NY
Mailing Zip:	11237
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	7186286700

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2018
Trans1 State ID:	PAD982661381
Trans2 State ID:	Not reported
Generator Ship Date:	03/20/2018
Trans1 Recv Date:	03/20/2018
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	03/31/2018
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYR000143248
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported

THE PRINTHOUSE INC (Continued) **1010328451**

TSDF ID 1:	PAD085690592
TSDF ID 2:	Not reported
Manifest Tracking Number:	011654933FLE
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H141
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	3500
Units:	P - Pounds
Number of Containers:	10
Container Type:	DM - Metal drums, barrels
Handling Method:	L Landfill.
Specific Gravity:	1
Waste Code:	D001
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
5 additional NY MANIFEST: record(s) in the EDR Site Report.

Z181 **ARCHITECTURAL COATINGS INC** **RCRA-CESQG** **1012186946**
ENE **538 JOHNSON AVE - GROUND FLOOR** **NY MANIFEST** **NYR000168104**
1/8-1/4 **BROOKLYN, NY 11237**
0.204 mi.
1076 ft. **Site 3 of 7 in cluster Z**

Relative: RCRA-CESQG:
Lower

Date form received by agency:	09/03/2009
Facility name:	ARCHITECTURAL COATINGS INC
Facility address:	538 JOHNSON AVE - GROUND FLOOR BROOKLYN, NY 11237
EPA ID:	NYR000168104
Mailing address:	JOHNSON AVE - GROUND FLOOR BROOKLYN, NY 11237
Contact:	DANIEL FRANCE
Contact address:	JOHNSON AVE - GROUND FLOOR BROOKLYN, NY 11237
Contact country:	US
Contact telephone:	732-207-7228
Contact email:	MARSARLICO@AOL.COM
EPA Region:	02

Actual:
13 ft.

ARCHITECTURAL COATINGS INC (Continued) **1012186946**

Land type: Other land type
Classification: Conditionally Exempt Small Quantity Generator
Description: Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

Owner/Operator Summary:
Owner/operator name: NICK COMAIANNI
Owner/operator address: Not reported
Not reported
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 04/01/1999
Owner/Op end date: Not reported

Owner/operator name: NICK COMAIANNI
Owner/operator address: Not reported
Not reported
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 04/01/1999
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No

ARCHITECTURAL COATINGS INC (Continued) **1012186946**

Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Hazardous Waste Summary:

. Waste code: F006
. Waste name: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS, EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC, AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

Violation Status: No violations found

Evaluation Action Summary:
Evaluation date: 06/29/2010
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

NY MANIFEST:
Country: USA
EPA ID: NYR000168104
Facility Status: Not reported
Location Address 1: 538 JOHNSON AVE - GROUND FLOOR
Code: BP
Location Address 2: Not reported
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: 11237
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYR000168104
Mailing Name: ARCHITECTURAL COATINGS INC
Mailing Contact: SAL COMAIANNI
Mailing Address 1: 538 JOHNSON AVE - GROUND FLOOR
Mailing Address 2: Not reported
Mailing City: BROOKLYN
Mailing State: NY
Mailing Zip: 11237
Mailing Zip 4: Not reported
Mailing Country: USA
Mailing Phone: 7188212406

NY MANIFEST:
Document ID: Not reported
Manifest Status: Not reported
seq: Not reported
Year: 2009
Trans1 State ID: NJD054126164

ARCHITECTURAL COATINGS INC (Continued) **1012186946**

Trans2 State ID:	Not reported
Generator Ship Date:	09/23/2009
Trans1 Recv Date:	09/23/2009
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	09/23/2009
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYR000168104
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	PAD085690592
TSDF ID 2:	Not reported
Manifest Tracking Number:	000200862WAS
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H141
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	300.0
Units:	P - Pounds
Number of Containers:	1.0
Container Type:	DF - Fiberboard or plastic drums (glass)
Handling Method:	L Landfill.
Specific Gravity:	1.0
Waste Code:	D003
Waste Code 1_2:	D004
Waste Code 1_3:	D005
Waste Code 1_4:	D007
Waste Code 1_5:	D008
Waste Code 1_6:	D010

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

Z182 **ARCHITECTURAL COATINGS INC** **PA MANIFEST** **S111430955**
ENE **538 JOHNSON AVENUE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.204 mi.
1076 ft. **Site 4 of 7 in cluster Z**

Relative: Manifest Details:
Lower

Year:	2009
Manifest Number:	000200862WAS
Manifest Type:	TSD Copy
Generator EPA Id:	NYR000168104

Actual:
13 ft.

ARCHITECTURAL COATINGS INC (Continued) **S111430955**

Generator Date:	09/23/2009
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	NULL
TSD EPA Id:	PAD085690592
TSD Date:	Not reported
TSD Facility Name:	REPUBLIC ENVIRONMENTAL SYSTEMS OF PA INC
TSD Facility Address:	2869 SANDSTONE DRIVE
TSD Facility City:	HATFIELD
TSD Facility State:	PA
Facility Telephone:	Not reported
Page Number:	1
Line Number:	1
Waste Number:	D003
Container Number:	1
Container Type:	Fiberboard or plastic drums, barrels, kegs
Waste Quantity:	600
Unit:	Pounds
Handling Code:	Not reported
TSP EPA Id:	Not reported
Date TSP Sig:	Not reported

Year:	2009
Manifest Number:	000200862WAS
Manifest Type:	TSD Copy
Generator EPA Id:	NYR000168104
Generator Date:	09/23/2009
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	NULL
TSD EPA Id:	PAD085690592
TSD Date:	Not reported
TSD Facility Name:	REPUBLIC ENVIRONMENTAL SYSTEMS OF PA INC
TSD Facility Address:	2869 SANDSTONE DRIVE
TSD Facility City:	HATFIELD
TSD Facility State:	PA
Facility Telephone:	Not reported
Page Number:	1
Line Number:	1
Waste Number:	D007
Container Number:	1
Container Type:	Fiberboard or plastic drums, barrels, kegs
Waste Quantity:	600
Unit:	Pounds
Handling Code:	Not reported
TSP EPA Id:	Not reported
Date TSP Sig:	Not reported

Year:	2009
Manifest Number:	000200862WAS
Manifest Type:	TSD Copy
Generator EPA Id:	NYR000168104
Generator Date:	09/23/2009
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported

ARCHITECTURAL COATINGS INC (Continued) **S111430955**

Contact Name:	Not reported
Contact Phone:	NULL
TSD EPA Id:	PAD085690592
TSD Date:	Not reported
TSD Facility Name:	REPUBLIC ENVIRONMENTAL SYSTEMS OF PA INC
TSD Facility Address:	2869 SANDSTONE DRIVE
TSD Facility City:	HATFIELD
TSD Facility State:	PA
Facility Telephone:	Not reported
Page Number:	1
Line Number:	2
Waste Number:	D004
Container Number:	1
Container Type:	Fiberboard or plastic drums, barrels, kegs
Waste Quantity:	300
Unit:	Pounds
Handling Code:	Not reported
TSP EPA Id:	Not reported
Date TSP Sig:	Not reported

Year:	2009
Manifest Number:	000200862WAS
Manifest Type:	TSD Copy
Generator EPA Id:	NYR000168104
Generator Date:	09/23/2009
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	NULL
TSD EPA Id:	PAD085690592
TSD Date:	Not reported
TSD Facility Name:	REPUBLIC ENVIRONMENTAL SYSTEMS OF PA INC
TSD Facility Address:	2869 SANDSTONE DRIVE
TSD Facility City:	HATFIELD
TSD Facility State:	PA
Facility Telephone:	Not reported
Page Number:	1
Line Number:	2
Waste Number:	D003
Container Number:	1
Container Type:	Fiberboard or plastic drums, barrels, kegs
Waste Quantity:	300
Unit:	Pounds
Handling Code:	Not reported
TSP EPA Id:	Not reported
Date TSP Sig:	Not reported

Year:	2009
Manifest Number:	000200862WAS
Manifest Type:	TSD Copy
Generator EPA Id:	NYR000168104
Generator Date:	09/23/2009
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	NULL
TSD EPA Id:	PAD085690592

ARCHITECTURAL COATINGS INC (Continued) **S111430955**

TSD Date:	Not reported
TSD Facility Name:	REPUBLIC ENVIRONMENTAL SYSTEMS OF PA INC
TSD Facility Address:	2869 SANDSTONE DRIVE
TSD Facility City:	HATFIELD
TSD Facility State:	PA
Facility Telephone:	Not reported
Page Number:	1
Line Number:	2
Waste Number:	D005
Container Number:	1
Container Type:	Fiberboard or plastic drums, barrels, kegs
Waste Quantity:	300
Unit:	Pounds
Handling Code:	Not reported
TSP EPA Id:	Not reported
Date TSP Sig:	Not reported

Year:	2009
Manifest Number:	000200862WAS
Manifest Type:	TSD Copy
Generator EPA Id:	NYR000168104
Generator Date:	09/23/2009
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	NULL
TSD EPA Id:	PAD085690592
TSD Date:	Not reported
TSD Facility Name:	REPUBLIC ENVIRONMENTAL SYSTEMS OF PA INC
TSD Facility Address:	2869 SANDSTONE DRIVE
TSD Facility City:	HATFIELD
TSD Facility State:	PA
Facility Telephone:	Not reported
Page Number:	1
Line Number:	3
Waste Number:	D010
Container Number:	1
Container Type:	Fiberboard or plastic drums, barrels, kegs
Waste Quantity:	55
Unit:	Gallons (liquids only)
Handling Code:	Not reported
TSP EPA Id:	Not reported
Date TSP Sig:	Not reported

Year:	2009
Manifest Number:	000200862WAS
Manifest Type:	TSD Copy
Generator EPA Id:	NYR000168104
Generator Date:	09/23/2009
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	NULL
TSD EPA Id:	PAD085690592
TSD Date:	Not reported
TSD Facility Name:	REPUBLIC ENVIRONMENTAL SYSTEMS OF PA INC
TSD Facility Address:	2869 SANDSTONE DRIVE

ARCHITECTURAL COATINGS INC (Continued) **S111430955**

TSD Facility City:	HATFIELD
TSD Facility State:	PA
Facility Telephone:	Not reported
Page Number:	1
Line Number:	3
Waste Number:	D007
Container Number:	1
Container Type:	Fiberboard or plastic drums, barrels, kegs
Waste Quantity:	55
Unit:	Gallons (liquids only)
Handling Code:	Not reported
TSP EPA Id:	Not reported
Date TSP Sig:	Not reported
Year:	2009
Manifest Number:	000200862WAS
Manifest Type:	TSD Copy
Generator EPA Id:	NYR000168104
Generator Date:	09/23/2009
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	NULL
TSD EPA Id:	PAD085690592
TSD Date:	Not reported
TSD Facility Name:	REPUBLIC ENVIRONMENTAL SYSTEMS OF PA INC
TSD Facility Address:	2869 SANDSTONE DRIVE
TSD Facility City:	HATFIELD
TSD Facility State:	PA
Facility Telephone:	Not reported
Page Number:	1
Line Number:	3
Waste Number:	D008
Container Number:	1
Container Type:	Fiberboard or plastic drums, barrels, kegs
Waste Quantity:	55
Unit:	Gallons (liquids only)
Handling Code:	Not reported
TSP EPA Id:	Not reported
Date TSP Sig:	Not reported
Year:	2009
Manifest Number:	000200862WAS
Manifest Type:	TSD Copy
Generator EPA Id:	NYR000168104
Generator Date:	09/23/2009
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	NULL
TSD EPA Id:	PAD085690592
TSD Date:	Not reported
TSD Facility Name:	REPUBLIC ENVIRONMENTAL SYSTEMS OF PA INC
TSD Facility Address:	2869 SANDSTONE DRIVE
TSD Facility City:	HATFIELD
TSD Facility State:	PA
Facility Telephone:	Not reported

ARCHITECTURAL COATINGS INC (Continued) **S111430955**

Page Number:	1
Line Number:	1
Waste Number:	D005
Container Number:	1
Container Type:	Fiberboard or plastic drums, barrels, kegs
Waste Quantity:	600
Unit:	Pounds
Handling Code:	Not reported
TSP EPA Id:	Not reported
Date TSP Sig:	Not reported
Year:	2009
Manifest Number:	000200862WAS
Manifest Type:	TSD Copy
Generator EPA Id:	NYR000168104
Generator Date:	09/23/2009
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	NULL
TSD EPA Id:	PAD085690592
TSD Date:	Not reported
TSD Facility Name:	REPUBLIC ENVIRONMENTAL SYSTEMS OF PA INC
TSD Facility Address:	2869 SANDSTONE DRIVE
TSD Facility City:	HATFIELD
TSD Facility State:	PA
Facility Telephone:	Not reported
Page Number:	1
Line Number:	2
Waste Number:	D007
Container Number:	1
Container Type:	Fiberboard or plastic drums, barrels, kegs
Waste Quantity:	300
Unit:	Pounds
Handling Code:	Not reported
TSP EPA Id:	Not reported
Date TSP Sig:	Not reported

Click this hyperlink while viewing on your computer to access
2 additional PA_MANIFEST: record(s) in the EDR Site Report.

Z183 **THE PURCHASE INC** **PA MANIFEST** **S118891668**
ENE **538 JOHNSON AVE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.204 mi.
1076 ft. **Site 5 of 7 in cluster Z**

Relative: Manifest Details:
Lower

Actual:
13 ft.

Year:	2017
Manifest Number:	010970601FLE
Manifest Type:	TSD Copy
Generator EPA Id:	NYR000143248
Generator Date:	09/12/2017
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	718-628-6700
TSD EPA Id:	Not reported

THE PURCHASE INC (Continued) **S118891668**

TSD Date:	Not reported
TSD Facility Name:	Republic Environmental Systems (Pennsylvania) LLC
TSD Facility Address:	2869 Sandstone Dr
TSD Facility City:	Hatfield
TSD Facility State:	PA
Facility Telephone:	Not reported
Page Number:	1
Line Number:	1
Waste Number:	D001
Container Number:	7
Container Type:	Metal drums, barrels, kegs
Waste Quantity:	3000
Unit:	Pounds
Handling Code:	Not reported
TSP EPA Id:	PAD085690592
Date TSP Sig:	Not reported
Year:	2017
Manifest Number:	011509706FLE
Manifest Type:	TSD Copy
Generator EPA Id:	NYR000143248
Generator Date:	12/12/2017
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	718-628-6700
TSD EPA Id:	Not reported
TSD Date:	Not reported
TSD Facility Name:	Republic Environmental Systems (Pennsylvania) LLC
TSD Facility Address:	2869 Sandstone Dr
TSD Facility City:	Hatfield
TSD Facility State:	PA
Facility Telephone:	Not reported
Page Number:	1
Line Number:	1
Waste Number:	D001
Container Number:	8
Container Type:	Metal drums, barrels, kegs
Waste Quantity:	4000
Unit:	Pounds
Handling Code:	Not reported
TSP EPA Id:	PAD085690592
Date TSP Sig:	Not reported
Year:	2017
Manifest Number:	016789603JJK
Manifest Type:	TSD Copy
Generator EPA Id:	NYR000143248
Generator Date:	03/02/2017
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	718-628-6700
TSD EPA Id:	Not reported
TSD Date:	Not reported
TSD Facility Name:	Republic Environmental Systems (Pennsylvania) LLC
TSD Facility Address:	2869 Sandstone Dr

THE PURCHASE INC (Continued) **S118891668**

TSD Facility City:	Hatfield
TSD Facility State:	PA
Facility Telephone:	Not reported
Page Number:	1
Line Number:	1
Waste Number:	D001
Container Number:	8
Container Type:	Metal drums, barrels, kegs
Waste Quantity:	320
Unit:	Gallons (liquids only)
Handling Code:	Not reported
TSP EPA Id:	PAD085690592
Date TSP Sig:	Not reported
Year:	2017
Manifest Number:	010414024FLE
Manifest Type:	TSD Copy
Generator EPA Id:	NYR000143248
Generator Date:	06/15/2017
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	718-628-6700
TSD EPA Id:	Not reported
TSD Date:	Not reported
TSD Facility Name:	Republic Environmental Systems (Pennsylvania) LLC
TSD Facility Address:	2869 Sandstone Dr
TSD Facility City:	Hatfield
TSD Facility State:	PA
Facility Telephone:	Not reported
Page Number:	1
Line Number:	1
Waste Number:	D001
Container Number:	10
Container Type:	Metal drums, barrels, kegs
Waste Quantity:	550
Unit:	Gallons (liquids only)
Handling Code:	Not reported
TSP EPA Id:	PAD085690592
Date TSP Sig:	Not reported
Year:	2016
Manifest Number:	016309725JJK
Manifest Type:	TSD Copy
Generator EPA Id:	NYR000143248
Generator Date:	12/09/2016
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	718-628-6700
TSD EPA Id:	Not reported
TSD Date:	Not reported
TSD Facility Name:	Republic Environmental Systems (Pennsylvania) LLC
TSD Facility Address:	2869 Sandstone Dr
TSD Facility City:	Hatfield
TSD Facility State:	PA
Facility Telephone:	Not reported

THE PURCHASE INC (Continued) **S118891668**

Page Number:	1
Line Number:	1
Waste Number:	D001
Container Number:	8
Container Type:	Metal drums, barrels, kegs
Waste Quantity:	3600
Unit:	Pounds
Handling Code:	Not reported
TSP EPA Id:	PAD085690592
Date TSP Sig:	Not reported
Year:	2016
Manifest Number:	015668668JJK
Manifest Type:	TSD Copy
Generator EPA Id:	NYR000143248
Generator Date:	03/01/2016
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	718-628-6700
TSD EPA Id:	Not reported
TSD Date:	Not reported
TSD Facility Name:	Republic Environmental Systems (Pennsylvania) LLC
TSD Facility Address:	2869 Sandstone Dr
TSD Facility City:	Hatfield
TSD Facility State:	PA
Facility Telephone:	Not reported
Page Number:	1
Line Number:	1
Waste Number:	D001
Container Number:	8
Container Type:	Metal drums, barrels, kegs
Waste Quantity:	440
Unit:	Gallons (liquids only)
Handling Code:	Not reported
TSP EPA Id:	PAD085690592
Date TSP Sig:	Not reported
Year:	2015
Manifest Number:	014346011JJK
Manifest Type:	TSD Copy
Generator EPA Id:	NYR000143248
Generator Date:	02/27/2015
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	718-628-6700
TSD EPA Id:	Not reported
TSD Date:	Not reported
TSD Facility Name:	Republic Environmental Systems (Pennsylvania) LLC
TSD Facility Address:	2869 Sandstone Dr
TSD Facility City:	Hatfield
TSD Facility State:	PA
Facility Telephone:	Not reported
Page Number:	1
Line Number:	1
Waste Number:	D001

THE PURCHASE INC (Continued) **S118891668**

Container Number:	14
Container Type:	Metal drums, barrels, kegs
Waste Quantity:	770
Unit:	Gallons (liquids only)
Handling Code:	Not reported
TSP EPA Id:	PAD085690592
Date TSP Sig:	Not reported
Year:	2015
Manifest Number:	015028589JJK
Manifest Type:	TSD Copy
Generator EPA Id:	NYR000143248
Generator Date:	10/30/2015
Mailing Address:	Not reported
Mailing City,St,Zip:	Not reported
Contact Name:	Not reported
Contact Phone:	718-628-6700
TSD EPA Id:	Not reported
TSD Date:	Not reported
TSD Facility Name:	Republic Environmental Systems (Pennsylvania) LLC
TSD Facility Address:	2869 Sandstone Dr
TSD Facility City:	Hatfield
TSD Facility State:	PA
Facility Telephone:	Not reported
Page Number:	1
Line Number:	1
Waste Number:	D001
Container Number:	16
Container Type:	Metal drums, barrels, kegs
Waste Quantity:	880
Unit:	Gallons (liquids only)
Handling Code:	Not reported
TSP EPA Id:	PAD085690592
Date TSP Sig:	Not reported

AA184 **CON EDISON** **NY MANIFEST** **S117058680**
West **338 JOHNSON AVE** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.205 mi.
1085 ft. **Site 1 of 11 in cluster AA**

Relative:
Lower

Actual:
17 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004508156
Facility Status:	Not reported
Location Address 1:	338 JOHNSON AVE
Code:	BP
Location Address 2:	SB13908
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11206
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004508156
Mailing Name:	CON EDISON
Mailing Contact:	CON EDISON

CON EDISON (Continued) **S117058680**

Mailing Address 1:	4 IRIVING PL
Mailing Address 2:	15TH FL
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	04/22/2014
Trans1 Recv Date:	04/22/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	04/22/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004508156
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002417959GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	80
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

CON EDISON (Continued) **S117058680**

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

AA185 **CON EDISON SERVICE BOX: 13908** **RCRA NonGen / NLR** **1017773037**
West **338 JOHNSON AVE** **FINDS** **NYP004508156**
1/8-1/4 **BROOKLYN, NY 11206**
0.205 mi.
1085 ft. **Site 2 of 11 in cluster AA**

Relative:
Lower

Actual:
17 ft.

RCRA NonGen / NLR:

Date form received by agency:	05/22/2014
Facility name:	CON EDISON SERVICE BOX: 13908
Facility address:	338 JOHNSON AVE BROOKLYN, NY 11206
EPA ID:	NYP004508156
Mailing address:	IRVING PL, 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	212-460-3770
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	04/22/2014
Site name:	CON EDISON
Classification:	Small Quantity Generator

Date form received by agency:	04/22/2014
Site name:	CON EDISON
Classification:	Not a generator, verified

Violation Status: No violations found

FINDS:

CON EDISON SERVICE BOX: 13908 (Continued) **1017773037**

Registry ID: 110063806742

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

AB186 **CON EDISON** **NY MANIFEST** **S117736544**
South **16 MORGAN AVE** **N/A**
1/8-1/4 **BROOKLYN, NY 11222**
0.206 mi.
1090 ft. **Site 1 of 12 in cluster AB**

Relative: **Higher**

Actual: **31 ft.**

NY MANIFEST:

Country:	USA
EPA ID:	NYP004529459
Facility Status:	Not reported
Location Address 1:	16 MORGAN AVENUE
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11222
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004529459
Mailing Name:	CON EDISON
Mailing Contact:	CON EDISON
Mailing Address 1:	4 IRVING PL
Mailing Address 2:	15TH FL
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	05/13/2014
Trans1 Recv Date:	05/13/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	05/14/2014
Part A Recv Date:	Not reported

CON EDISON (Continued) **S117736544**

Part B Recv Date:	Not reported
Generator EPA ID:	NYP004529459
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002417994GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	600
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

AB187 **CON EDISON MANHOLE: 291** **RCRA NonGen / NLR** **1017775120**
South **16 MORGAN AVE** **NYP004529459**
1/8-1/4 **BROOKLYN, NY 11222**
0.206 mi.
1090 ft. **Site 2 of 12 in cluster AB**

Relative: RCRA NonGen / NLR:
Higher

Date form received by agency:	06/13/2014
Facility name:	CON EDISON MANHOLE: 291
Facility address:	16 MORGAN AVE BROOKLYN, NY 11222
EPA ID:	NYP004529459
Mailing address:	IRVING PL, 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING
Contact address:	Not reported Not reported

Actual:
31 ft.

CON EDISON MANHOLE: 291 (Continued) **1017775120**

Contact country: Not reported
Contact telephone: 212-460-3770
Contact email: Not reported
EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 05/13/2014
Site name: CON EDISON
Classification: Large Quantity Generator

Date form received by agency: 05/13/2014
Site name: CON EDISON
Classification: Not a generator, verified

Violation Status: No violations found

AC188 **A M KNITWEAR CORP** **NY AST** **U003383547**
SW **315 SEIGEL ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.208 mi.
1098 ft. **Site 1 of 2 in cluster AC**

Relative: **Lower**
Actual: **17 ft.**

AST:
Name: A M KNITWEAR CORP
Address: 315 SEIGEL ST
City,State,Zip: BROOKLYN, NY 11206
Region: STATE
DEC Region: 2
Site Status: Inactive
Facility Id: 2-047430
Program Type: PBS
UTM X: 590112.38683
UTM Y: 4506588.38044
Expiration Date: N/A
Site Type: Unknown

Affiliation Records:
Site Id: 745
Affiliation Type: Facility Owner

A M KNITWEAR CORP (Continued) **U003383547**

Company Name:	A M KNITWEAR CORP
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	315 SEIGEL ST
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11206
Country Code:	001
Phone:	(718) 497-4903
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	745
Affiliation Type:	Mail Contact
Company Name:	A M KNITWEAR CORP
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	315 SEIGEL ST
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11206
Country Code:	001
Phone:	(718) 497-4903
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	745
Affiliation Type:	Facility Operator
Company Name:	A M KNITWEAR CORP
Contact Type:	Not reported
Contact Name:	A M KNITWEAR CORP
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 497-4903
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	745
Affiliation Type:	Emergency Contact
Company Name:	A M KNITWEAR CORP
Contact Type:	Not reported
Contact Name:	MORRIS GUTTMAN
Address1:	Not reported
Address2:	Not reported
City:	Not reported

A M KNITWEAR CORP (Continued) **U003383547**

State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 945-0052
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	001
Tank Id:	1663
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Equipment Records:

J02 - Dispenser - Suction Dispenser
C00 - Pipe Location - No Piping
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
B00 - Tank External Protection - None
I04 - Overfill - Product Level Gauge (A/G)
L09 - Piping Leak Detection - Exempt Suction Piping
G03 - Tank Secondary Containment - Vault (w/o access)
A00 - Tank Internal Protection - None
H99 - Tank Leak Detection - Other

Tank Location:	Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Tank Converted to Non-Regulated Use
Pipe Model:	Not reported
Install Date:	Not reported
Capacity Gallons:	5000
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	Not reported
Register:	True
Modified By:	JMKRIMGO
Last Modified:	04/14/2017
Material Name:	#2 fuel oil (on-site consumption)

T189 **WOOD-TEX PANELS INC** **RCRA NonGen / NLR** **1000184307**
NE **108 VARICK STREET** **FINDS** **NYD001641489**
1/8-1/4 **BROOKLYN, NY 11237** **ECHO**
0.210 mi. **NY MANIFEST**
1111 ft. **Site 7 of 7 in cluster T**

Relative:
Lower

Actual:
13 ft.

RCRA NonGen / NLR:

Date form received by agency:	01/01/2007
Facility name:	WOOD-TEX PANELS INC
Facility address:	108 VARICK AVE BROOKLYN, NY 11237-1217
EPA ID:	NYD001641489
Mailing address:	VARICK AVE BROOKLYN, NY 11237

WOOD-TEX PANELS INC (Continued) **1000184307**

Contact: Not reported
Contact address: VARICK AVE
BROOKLYN, NY 11237
Contact country: US
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 02
Land type: Facility is not located on Indian land. Additional information is not known.
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: WOOD-TEX PANELS INC
Owner/operator address: NOT REQUIRED
NOT REQUIRED, WY 99999
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: WOOD-TEX PANELS INC
Owner/operator address: NOT REQUIRED
NOT REQUIRED, WY 99999
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

WOOD-TEX PANELS INC (Continued) **1000184307**

Historical Generators:
Date form received by agency: 01/01/2006
Site name: WOOD-TEX PANELS INC
Classification: Not a generator, verified

Date form received by agency: 07/08/1999
Site name: WOOD-TEX PANELS INC
Classification: Not a generator, verified

Date form received by agency: 08/14/1980
Site name: WOOD-TEX PANELS INC
Classification: Large Quantity Generator

Hazardous Waste Summary:

. Waste code: D000
. Waste name: Not Defined

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: F017
. Waste name: Not Defined

. Waste code: U220
. Waste name: BENZENE, METHYL- (OR) TOLUENE

. Waste code: U239
. Waste name: BENZENE, DIMETHYL- (I,T) (OR) XYLENE (I)

Facility Has Received Notices of Violations:
Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 09/09/1985
Date achieved compliance: 02/12/1986
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/27/1985
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 05/24/1988
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 09/09/1985
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General

WOOD-TEX PANELS INC (Continued) **1000184307**

Date achieved compliance: 02/12/1986
Evaluation lead agency: State

FINDS:

Registry ID: 110001573663

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

FIS (New York - Facility Information System) is New York's Department of Environmental Conservation (DEC) information system for tracking environmental facility information found across the State.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000184307
Registry ID:	110001573663
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110001573663

NY MANIFEST:

Country:	USA
EPA ID:	NYD001641489
Facility Status:	Not reported
Location Address 1:	108 VARICK AVE
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYD001641489
Mailing Name:	WOOD-TEX PANELS INC
Mailing Contact:	PACKIN DAVID PRESIDENT
Mailing Address 1:	108 VARICK AVE
Mailing Address 2:	Not reported
Mailing City:	BROOKLYN
Mailing State:	NY
Mailing Zip:	11237
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	2123669292

NY MANIFEST:

Document ID:	NJA1301532
Manifest Status:	C

WOOD-TEX PANELS INC (Continued) **1000184307**

seq:	Not reported
Year:	1992
Trans1 State ID:	NJDEPS727
Trans2 State ID:	Not reported
Generator Ship Date:	01/20/1992
Trans1 Recv Date:	01/20/1992
Trans2 Recv Date:	/ /
TSD Site Recv Date:	01/20/1992
Part A Recv Date:	01/28/1992
Part B Recv Date:	02/03/1992
Generator EPA ID:	NYD001641489
Trans1 EPA ID:	NJD986609949
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	F003 - UNKNOWN
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	00110
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	002
Container Type:	DM - Metal drums, barrels
Handling Method:	B Incineration, heat recovery, burning.
Specific Gravity:	100

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

V190 **AMBATO AUTO SERVICES INC** **NY AST** **U004061873**
SE **1090 FLUSHING AVENUE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.211 mi.
1115 ft. **Site 5 of 5 in cluster V**

Relative: AST:
Higher

Name:	AMBATO AUTO SERVICES INC
Address:	1090 FLUSHING AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Region:	STATE
DEC Region:	2
Site Status:	Active
Facility Id:	2-610257

Actual:
25 ft.

AMBATO AUTO SERVICES INC (Continued) **U004061873**

Program Type:	PBS
UTM X:	590577.37544
UTM Y:	4506566.15048
Expiration Date:	06/30/2015
Site Type:	Other

Affiliation Records:

Site Id:	365691
Affiliation Type:	Mail Contact
Company Name:	AMBATO AUTO SERVICES INC
Contact Type:	Not reported
Contact Name:	LUIS GUTIERREZ
Address1:	1090 FLUSHING AVENUE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(718) 456-3155
EMail:	Not reported
Fax Number:	Not reported
Modified By:	BVCAMPBE
Date Last Modified:	2011-03-22

Site Id:	365691
Affiliation Type:	Facility Operator
Company Name:	AMBATO AUTO SERVICES INC
Contact Type:	Not reported
Contact Name:	LUIS GUTIERREZ
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 456-3155
EMail:	Not reported
Fax Number:	Not reported
Modified By:	BVCAMPBE
Date Last Modified:	2011-03-22

Site Id:	365691
Affiliation Type:	Emergency Contact
Company Name:	LUIS GUITERREZ
Contact Type:	Not reported
Contact Name:	EDUARDO SEVILLA
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	999
Phone:	(917) 306-8644
EMail:	Not reported
Fax Number:	Not reported
Modified By:	BVCAMPBE
Date Last Modified:	2011-03-22

AMBATO AUTO SERVICES INC (Continued) **U004061873**

Site Id:	365691
Affiliation Type:	Facility Owner
Company Name:	LUIS GUITERREZ
Contact Type:	PRESIDENT
Contact Name:	LUIS GUITERREZ
Address1:	57 ST NICHOLAS
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(347) 706-2243
EMail:	Not reported
Fax Number:	Not reported
Modified By:	BVCAMPBE
Date Last Modified:	2011-03-22

Tank Info:

Tank Number:	001
Tank Id:	212325
Material Code:	0022
Common Name of Substance:	Waste Oil/Used Oil

Equipment Records:

I04 - Overfill - Product Level Gauge (A/G)
J00 - Dispenser - None
L00 - Piping Leak Detection - None
D00 - Pipe Type - No Piping
H00 - Tank Leak Detection - None
E00 - Piping Secondary Containment - None
K00 - Spill Prevention - None
A00 - Tank Internal Protection - None
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
G00 - Tank Secondary Containment - None

Tank Location:	Aboveground - on saddles, legs, racks, etc.... Tank bottom is elevated above grade or tank pad, allowing visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Closed - In Place
Pipe Model:	Not reported
Install Date:	12/01/2001
Capacity Gallons:	200
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	05/20/2009
Register:	True
Modified By:	NRLOMBAR
Last Modified:	04/14/2017
Material Name:	waste oil/used oil

Tank Number:	002
Tank Id:	228620

AMBATO AUTO SERVICES INC (Continued) **U004061873**

Material Code: 0022
Common Name of Substance: Waste Oil/Used Oil

Equipment Records:

I04 - Overfill - Product Level Gauge (A/G)
J00 - Dispenser - None
D00 - Pipe Type - No Piping
L00 - Piping Leak Detection - None
E00 - Piping Secondary Containment - None
H00 - Tank Leak Detection - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
K00 - Spill Prevention - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
G00 - Tank Secondary Containment - None

Tank Location: Aboveground - on saddles, legs, racks, etc.... Tank bottom is elevated above grade or tank pad, allowing visual inspection.
Tank Type: Steel/Carbon Steel/Iron
Tank Status: In Service
Pipe Model: Not reported
Install Date: 05/20/2009
Capacity Gallons: 275
Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Date Tank Closed: Not reported
Register: True
Modified By: NRLOMBAR
Last Modified: 04/14/2017
Material Name: waste oil/used oil

AD191 **SCHOLES ST. STATION** **EDR MGP** **1008407899**
WNW **SCHOLES ST 7 BOGART STS. MESSEROLE AND MORGAN AVE.** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.212 mi.
1120 ft. **Site 1 of 5 in cluster AD**

Relative: Lower

Manufactured Gas Plants:
No additional information available

Actual: 17 ft.

AB192 **CON EDISON SERVICE BOX: 16118** **RCRA NonGen / NLR** **1017771714**
South **12 MORGAN AVE** **NYP004486551**
1/8-1/4 **BROOKLYN, NY 11237**
0.217 mi.
1144 ft. **Site 3 of 12 in cluster AB**

Relative: Higher

RCRA NonGen / NLR:
Date form received by agency: 05/02/2014
Facility name: CON EDISON SERVICE BOX: 16118
Facility address: 12 MORGAN AVE
BROOKLYN, NY 11237
EPA ID: NYP004486551
Mailing address: IRVING PL, 15TH FL NE

Actual: 31 ft.

CON EDISON SERVICE BOX: 16118 (Continued) **1017771714**

NEW YORK, NY 10003
Contact: THOMAS TEELING
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: 212-460-3770
Contact email: Not reported
EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 04/02/2014
Site name: CON EDISON
Classification: Small Quantity Generator

Date form received by agency: 04/02/2014
Site name: CON EDISON
Classification: Not a generator, verified

Violation Status: No violations found

AB193 **CON EDISON** **NY MANIFEST** **S116550301**
South **12 MORGAN AVE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.217 mi.
1144 ft. **Site 4 of 12 in cluster AB**

Relative:
Higher

Actual:
31 ft.

NY MANIFEST:
Country: USA
EPA ID: NYP004486551
Facility Status: Not reported
Location Address 1: OPP 12 MORGAN AVE
Code: BP
Location Address 2: SB16118
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: 11237
Location Zip 4: Not reported

CON EDISON (Continued) **S116550301**

NY MANIFEST:

EPAID:	NYP004486551
Mailing Name:	CON EDISON
Mailing Contact:	CON EDISION
Mailing Address 1:	4 IRVING PL
Mailing Address 2:	15TH FL
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	04/02/2014
Trans1 Recv Date:	04/02/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	04/03/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004486551
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002407010GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	40
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008

CON EDISON (Continued) **S116550301**

Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

X194 **HI-TECH RESOURCE RECOVERY INC** **NY SWF/LF** **S105841723**
NNE **130 VARICK AVENUE** **NY Financial Assurance** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.217 mi.
1144 ft. **Site 14 of 16 in cluster X**

Relative:
Lower

Actual:
12 ft.

SWF/LF:

Flag:	ACTIVE
Region Code:	2
Phone Number:	7183865750
Owner Name:	Hi-Tech Resource Recovery Inc
Owner Type:	Private
Owner Address:	130 Varick Ave
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11237
Owner Email:	Not reported
Owner Phone:	7183865750
Contact Name:	Not reported
Contact Address:	Not reported
Contact Addr2:	Not reported
Contact City,St,Zip:	Not reported
Contact Email:	Not reported
Contact Phone:	Not reported
Activity Desc:	z Retired - Transfer station - permit
Activity Number:	[24T73]
Active:	Yes
East Coordinate:	590549
North Coordinate:	4507134
Accuracy Code:	Not reported
Regulatory Status:	Permit
Waste Type:	MSW (Residential/Institutional & Commercial);Commingled Paper & Containers;Corrugated Cardboard;Metals (Ferrous & Non-Ferrous);Commingled Plastics;Wood (Brush/ Branches/ Trees/ Stumps)
Authorization #:	2-6104-00012/00004
Authorization Date:	05/05/2016
Expiration Date:	05/04/2021
Operator Name:	Hi-Tech Resource Recovery Inc
Operator Type:	Private
Laste Date:	Not reported

Flag:	ACTIVE
Region Code:	2
Phone Number:	7183865750
Owner Name:	Hi-Tech Resource Recovery Inc
Owner Type:	Private
Owner Address:	130 Varick Ave
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11237

HI-TECH RESOURCE RECOVERY INC (Continued) **S105841723**

Owner Email:	Not reported
Owner Phone:	7183865750
Contact Name:	Not reported
Contact Address:	Not reported
Contact Addr2:	Not reported
Contact City,St,Zip:	Not reported
Contact Email:	Not reported
Contact Phone:	Not reported
Activity Desc:	z Retired - C&D processing - permit
Activity Number:	[24W73]
Active:	Yes
East Coordinate:	590549
North Coordinate:	4507134
Accuracy Code:	Not reported
Regulatory Status:	Permit
Waste Type:	Construction & Demolition Debris;Metals (Ferrous);Metals (Non-Ferrous);Paper / Cardboard;Plastics
Authorization #:	2-6104-00012/00004
Authorization Date:	05/05/2016
Expiration Date:	05/04/2021
Operator Name:	Hi-Tech Resource Recovery Inc
Operator Type:	Private
Laste Date:	Not reported

NY Financial Assurance 1:

Owner Name:	Hi-Tech Resource Recovery Inc
Region:	2
Estimate Type:	Closure
Estimate Amount:	137000
Estimate Date:	03/01/2001
Mechanism:	Letter of credit
Mechanism Amount:	50000
Issue Date:	10/11/1991
Expiration Date:	Not reported
Activity Number:	24W73
Activity Description:	C&D processing - permit

X195 **HI-TECH RESOURCE RECOVERY INC** **RCRA NonGen / NLR** **1008374412**
NNE **130 VARICK AVE** **NYN008014441**
1/8-1/4 **BROOKLYN, NY 11237**
0.217 mi.
1144 ft. **Site 15 of 16 in cluster X**

Relative:
Lower

Actual:
12 ft.

RCRA NonGen / NLR:

Date form received by agency:	01/01/2007
Facility name:	HI-TECH RESOURCE RECOVERY INC
Facility address:	130 VARICK AVE BROOKLYN, NY 11237
EPA ID:	NYN008014441
Contact:	VINCENT ZAMBROTTA
Contact address:	Not reported NY
Contact country:	US
Contact telephone:	718-386-5750
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator

HI-TECH RESOURCE RECOVERY INC (Continued) **1008374412**

Description: Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2006
Site name: HI-TECH RESOURCE RECOVERY INC
Classification: Not a generator, verified

Date form received by agency: 04/02/2004
Site name: HI-TECH RESOURCE RECOVERY INC
Classification: Not a generator, verified

Violation Status: No violations found

AE196 **CON EDISON** **NY MANIFEST** **S116296967**
SW **40 BOGART ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.217 mi.
1144 ft. **Site 1 of 5 in cluster AE**

Relative: Higher
Actual: 19 ft.

NY MANIFEST:
Country: USA
EPA ID: NYP004483798
Facility Status: Not reported
Location Address 1: FRONT OF 40 BOGARTS ST
Code: BP
Location Address 2: SB12167
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: 11206
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYP004483798
Mailing Name: CON EDISON
Mailing Contact: CON EDISON
Mailing Address 1: 4 IRVING ST
Mailing Address 2: 15TH ST
Mailing City: NEW YORK
Mailing State: NY
Mailing Zip: 10003

CON EDISON (Continued) **S116296967**

Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	03/31/2014
Trans1 Recv Date:	03/31/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	03/31/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004483798
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002407025GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	100
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

AE197
SW
1/8-1/4
0.217 mi.
1144 ft.

CON EDISON SERVICE BOX: 12167
40 BOGART ST
BROOKLYN, NY 11206

Site 2 of 5 in cluster AE

RCRA NonGen / NLR | **1017771442** | **NYP004483798**

Relative:
Higher

Actual:
19 ft.

RCRA NonGen / NLR:

Date form received by agency:	04/30/2014
Facility name:	CON EDISON SERVICE BOX: 12167
Facility address:	40 BOGART ST BROOKLYN, NY 11206
EPA ID:	NYP004483798
Mailing address:	IRVING PL, 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	212-460-3770
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	03/31/2014
Site name:	CON EDISON
Classification:	Large Quantity Generator

Date form received by agency:	03/31/2014
Site name:	CON EDISON
Classification:	Not a generator, verified

Violation Status: No violations found

Z198 **DSNY BK DISTRICT 3 GARAGE** **NY UST** **U001840268**
ENE **525 JOHNSON AVENUE** **NY Spills** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.218 mi.
1149 ft. **Site 6 of 7 in cluster Z**

Relative:
Lower

Actual:
14 ft.

UST:

Name:	DSNY BK DISTRICT 3 GARAGE
Address:	525 JOHNSON AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Id/Status:	2-456055 / Active
Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	12/06/2023
UTM X:	590704.41368
UTM Y:	4506990.68879
Site Type:	Municipality (Incl. Waste Water Treatment Plants, Utilities, Swimming Pools, etc.)

Affiliation Records:

Site Id:	20089
Affiliation Type:	Facility Owner
Company Name:	BELSKY AND HENRY BODNER 535 LLC
Contact Type:	DEPUTY CHIEF
Contact Name:	CHRISTIAN HOURIHAN
Address1:	1355 ATLANTIC AVENUE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11216
Country Code:	001
Phone:	(718) 363-2300
EMail:	Not reported
Fax Number:	Not reported
Modified By:	JSMACRI
Date Last Modified:	2018-12-14

Site Id:	20089
Affiliation Type:	Mail Contact
Company Name:	NYC DEPARTMENT OF SANITATION
Contact Type:	Not reported
Contact Name:	CHRISTIAN HOURIHAN
Address1:	125 WORTH STREET, ROOM 823B
Address2:	125 WORTH STREET, ROOM 823B
City:	NEW YORK
State:	NY
Zip Code:	10013
Country Code:	001
Phone:	(646) 885-4890
EMail:	CHOURIHAN@DSNY.NYC.GOV
Fax Number:	Not reported
Modified By:	JSMACRI
Date Last Modified:	2018-12-14

Site Id:	20089
Affiliation Type:	Facility Operator
Company Name:	DSNY BK DISTRICT 3 GARAGE
Contact Type:	Not reported
Contact Name:	ALEJANDRO BARTOLO
Address1:	Not reported

DSNY BK DISTRICT 3 GARAGE (Continued) **U001840268**

Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 386-4726
EMail:	Not reported
Fax Number:	Not reported
Modified By:	JSMACRI
Date Last Modified:	2018-12-14

Site Id:	20089
Affiliation Type:	Emergency Contact
Company Name:	BELSKY AND HENRY BODNER 535 LLC
Contact Type:	Not reported
Contact Name:	BUREAU OF CLEANING & COLLECTIONS
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	999
Phone:	(646) 885-5051
EMail:	Not reported
Fax Number:	Not reported
Modified By:	JSMACRI
Date Last Modified:	2018-12-14

Tank Info:

Tank Number:	001
Tank ID:	36466
Tank Status:	Closed - Removed
Material Name:	Closed - Removed
Capacity Gallons:	550
Install Date:	12/01/1984
Date Tank Closed:	11/01/1998
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0009
Common Name of Substance:	Gasoline

Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
C00 - Pipe Location - No Piping
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
J02 - Dispenser - Suction Dispenser
A00 - Tank Internal Protection - None

DSNY BK DISTRICT 3 GARAGE (Continued) **U001840268**

B01 - Tank External Protection - Painted/Asphalt Coating
I04 - Overfill - Product Level Gauge (A/G)
G07 - Tank Secondary Containment - Excavation Liner

Tank Number:	002
Tank ID:	36467
Tank Status:	Closed - Removed
Material Name:	Closed - Removed
Capacity Gallons:	550
Install Date:	12/01/1984
Date Tank Closed:	12/01/1995
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0009
Common Name of Substance:	Gasoline
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	LXZIELIN
Last Modified:	04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
C00 - Pipe Location - No Piping
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
J02 - Dispenser - Suction Dispenser
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
I04 - Overfill - Product Level Gauge (A/G)
G07 - Tank Secondary Containment - Excavation Liner

Tank Number:	003
Tank ID:	36468
Tank Status:	Closed - Removed
Material Name:	Closed - Removed
Capacity Gallons:	550
Install Date:	12/01/1984
Date Tank Closed:	09/01/2000
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0013
Common Name of Substance:	Lube Oil
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	LXZIELIN
Last Modified:	04/14/2017

Equipment Records:

DSNY BK DISTRICT 3 GARAGE (Continued) **U001840268**

H00 - Tank Leak Detection - None
C00 - Pipe Location - No Piping
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
J02 - Dispenser - Suction Dispenser
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
I04 - Overfill - Product Level Gauge (A/G)
G07 - Tank Secondary Containment - Excavation Liner

Tank Number: 004
Tank ID: 36469
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 2000
Install Date: Not reported
Date Tank Closed: 11/01/1998
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0008
Common Name of Substance: Diesel

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
C00 - Pipe Location - No Piping
J02 - Dispenser - Suction Dispenser
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
I04 - Overfill - Product Level Gauge (A/G)
G07 - Tank Secondary Containment - Excavation Liner

Tank Number: 005
Tank ID: 36470
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 2000
Install Date: Not reported
Date Tank Closed: 11/01/1998
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0008
Common Name of Substance: Diesel

Tightness Test Method: NN
Date Test: Not reported

DSNY BK DISTRICT 3 GARAGE (Continued) **U001840268**

Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
C00 - Pipe Location - No Piping
J02 - Dispenser - Suction Dispenser
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
I04 - Overfill - Product Level Gauge (A/G)
G07 - Tank Secondary Containment - Excavation Liner

Tank Number: 006
Tank ID: 36471
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: 09/01/2000
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0013
Common Name of Substance: Lube Oil

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
C00 - Pipe Location - No Piping
J02 - Dispenser - Suction Dispenser
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
I04 - Overfill - Product Level Gauge (A/G)
G07 - Tank Secondary Containment - Excavation Liner

Tank Number: 007
Tank ID: 36472
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: 09/01/2000
Registered: True
Tank Location: Underground

DSNY BK DISTRICT 3 GARAGE (Continued) **U001840268**

Tank Type: Steel/carbon steel
Material Code: 0013
Common Name of Substance: Lube Oil

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: LXZIELIN
Last Modified: 04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
C00 - Pipe Location - No Piping
J02 - Dispenser - Suction Dispenser
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
I04 - Overfill - Product Level Gauge (A/G)
G07 - Tank Secondary Containment - Excavation Liner

Tank Number: 008
Tank ID: 36473
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: 09/01/2000
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0013
Common Name of Substance: Lube Oil

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: LXZIELIN
Last Modified: 04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
I04 - Overfill - Product Level Gauge (A/G)
G07 - Tank Secondary Containment - Excavation Liner

Tank Number: 009
Tank ID: 36474
Tank Status: Closed - In Place

DSNY BK DISTRICT 3 GARAGE (Continued) **U001840268**

Material Name: Closed - In Place
Capacity Gallons: 10000
Install Date: Not reported
Date Tank Closed: 08/10/2000
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 9999
Common Name of Substance: Other

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: LXZIELIN
Last Modified: 04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
I04 - Overfill - Product Level Gauge (A/G)

Tank Number: 010
Tank ID: 249670
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: 09/01/2000
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Tightness Test Method: 00
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: LXZIELIN
Last Modified: 04/14/2017

Tank Number: 011
Tank ID: 249671
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 1000
Install Date: Not reported
Date Tank Closed: 11/01/1998
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Tightness Test Method: 00
Date Test: Not reported

DSNY BK DISTRICT 3 GARAGE (Continued) **U001840268**

Next Test Date: Not reported
Pipe Model: Not reported
Modified By: LXZIELIN
Last Modified: 04/14/2017

Tank Number: 1
Tank ID: 56299
Tank Status: In Service
Material Name: In Service
Capacity Gallons: 4000
Install Date: 11/01/1998
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Equivalent technology
Material Code: 2710
Common Name of Substance: Biodiesel

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: MSBAPTIS
Last Modified: 04/14/2017

Equipment Records:

K01 - Spill Prevention - Catch Basin
L09 - Piping Leak Detection - Exempt Suction Piping
I02 - Overfill - High Level Alarm
B04 - Tank External Protection - Fiberglass
D06 - Pipe Type - Fiberglass Reinforced Plastic (FRP)
E04 - Piping Secondary Containment - Double walled UG
J02 - Dispenser - Suction Dispenser
L01 - Piping Leak Detection - Interstitial - Electronic Monitoring
F04 - Pipe External Protection - Fiberglass
C02 - Pipe Location - Underground/On-ground
H01 - Tank Leak Detection - Interstitial - Electronic Monitoring
I03 - Overfill - Automatic Shut-Off
A00 - Tank Internal Protection - None
G04 - Tank Secondary Containment - Double-Walled (Underground)

Tank Number: 2
Tank ID: 58509
Tank Status: In Service
Material Name: In Service
Capacity Gallons: 550
Install Date: 09/01/2000
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Fiberglass coated steel
Material Code: 0022
Common Name of Substance: Waste Oil/Used Oil

Tightness Test Method: NN
Date Test: Not reported

DSNY BK DISTRICT 3 GARAGE (Continued) **U001840268**

Next Test Date: Not reported
Pipe Model: Not reported
Modified By: MSBAPTIS
Last Modified: 04/14/2017

Equipment Records:

I02 - Overfill - High Level Alarm
K01 - Spill Prevention - Catch Basin
B04 - Tank External Protection - Fiberglass
E04 - Piping Secondary Containment - Double walled UG
C02 - Pipe Location - Underground/On-ground
F04 - Pipe External Protection - Fiberglass
H01 - Tank Leak Detection - Interstitial - Electronic Monitoring
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
J00 - Dispenser - None
G04 - Tank Secondary Containment - Double-Walled (Underground)
L00 - Piping Leak Detection - None

Tank Number: 3
Tank ID: 58507
Tank Status: In Service
Material Name: In Service
Capacity Gallons: 2000
Install Date: 09/01/2000
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Fiberglass coated steel
Material Code: 0015
Common Name of Substance: Motor Oil

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: MSBAPTIS
Last Modified: 04/14/2017

Equipment Records:

I02 - Overfill - High Level Alarm
K01 - Spill Prevention - Catch Basin
L09 - Piping Leak Detection - Exempt Suction Piping
B04 - Tank External Protection - Fiberglass
E04 - Piping Secondary Containment - Double walled UG
J02 - Dispenser - Suction Dispenser
C03 - Pipe Location - Aboveground/Underground Combination
F04 - Pipe External Protection - Fiberglass
H01 - Tank Leak Detection - Interstitial - Electronic Monitoring
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
G04 - Tank Secondary Containment - Double-Walled (Underground)

Tank Number: 4
Tank ID: 58508
Tank Status: In Service

DSNY BK DISTRICT 3 GARAGE (Continued) **U001840268**

Material Name:	In Service
Capacity Gallons:	2000
Install Date:	09/01/2000
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Fiberglass coated steel
Material Code:	0010
Common Name of Substance:	Hydraulic Oil
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	MSBAPTIS
Last Modified:	04/14/2017

Equipment Records:

I02 - Overfill - High Level Alarm
K01 - Spill Prevention - Catch Basin
L09 - Piping Leak Detection - Exempt Suction Piping
B04 - Tank External Protection - Fiberglass
E04 - Piping Secondary Containment - Double walled UG
J02 - Dispenser - Suction Dispenser
C03 - Pipe Location - Aboveground/Underground Combination
F04 - Pipe External Protection - Fiberglass
H01 - Tank Leak Detection - Interstitial - Electronic Monitoring
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
G04 - Tank Secondary Containment - Double-Walled (Underground)

SPILLS:

Name:	NYC SANITATION DISTRICT 4
Address:	525 JOHNSON ST
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0000846 / 2011-06-07
Facility ID:	0000846
Facility Type:	ER
DER Facility ID:	262662
Site ID:	326054
DEC Region:	2
Spill Cause:	Housekeeping
Spill Class:	B3
SWIS:	2401
Spill Date:	2000-04-20
Investigator:	vszhune
Referred To:	Not reported
Reported to Dept:	2000-04-20
CID:	312
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Federal Government
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False

DSNY BK DISTRICT 3 GARAGE (Continued) **U001840268**

Remediation Phase:	0
Date Entered In Computer:	2000-04-20
Spill Record Last Update:	2011-06-07
Spiller Name:	LOUIS CASANOVA
Spiller Company:	NYC SANITATION
Spiller Address:	125 WORTH STREET, RM 823
Spiller Company:	001
Contact Name:	Not reported
DEC Memo:	"06/07/11-Zhune. The City of New York Department of Sanitation (DSNY) sent a letter dated 02/23/11. the letter stated that this spill was generated as a result of the release of an unkmnown petroleum product to the pavement in the front of the facility. Housekeeping is listed as the cause of the spill on the NYSDEC Spill incidents Database. DSNY promptly responded to this spill. There is no reason to believe that the spill penetrated the concrete and reached the soil or groundwater. Pictures taken from the front of the faci;lity shows that the concrete sidewalk is free of any visible stains. Spill Closed. "
Remarks:	"AREA IN FRONT OF THE GARAGE IS COVERED IN OIL"

All Materials:

Site ID:	326054
Operable Unit ID:	822522
Operable Unit:	01
Material ID:	555831
Material Code:	0066A
Material Name:	unknown petroleum
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

Name:	BROOKLYN NORTH 4
Address:	525 JOHNSON AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9805903 / 2003-10-31
Facility ID:	9805903
Facility Type:	ER
DER Facility ID:	220706
Site ID:	124899
DEC Region:	2
Spill Cause:	Equipment Failure
Spill Class:	C3
SWIS:	2401
Spill Date:	1998-08-12
Investigator:	JMKRIMGO
Referred To:	Not reported
Reported to Dept:	1998-08-12
CID:	382
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Other
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported

DSNY BK DISTRICT 3 GARAGE (Continued) **U001840268**

Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	1998-08-12
Spill Record Last Update:	2003-10-31
Spiller Name:	Not reported
Spiller Company:	DEPT OF SANITATION
Spiller Address:	JOHNSON AVE
Spiller Company:	001
Contact Name:	ANTHONY CAGGIANO
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was KRIMGOLD "
Remarks:	"DURING TANK REMOVAL PRESSURE WAS APPLIED TO THE TANK AND IT OVERFLOWED THROUGH THE RELEASE HOSE. THE DEPT OF SANITATION IS ON SITE CLEANING. Same site as spill # 0130003."

All Materials:

Site ID:	124899
Operable Unit ID:	1067099
Operable Unit:	01
Material ID:	317077
Material Code:	0008
Material Name:	diesel
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	100.00
Units:	G
Recovered:	55.00
Oxygenate:	Not reported

Name:	BROOKLYN NORTH 04 DOS -DDC
Address:	525 JOHNSON AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0130003 / Not Reported
Facility ID:	0130003
Facility Type:	ER
DER Facility ID:	220706
Site ID:	271156
DEC Region:	2
Spill Cause:	Other
Spill Class:	B3
SWIS:	2401
Spill Date:	1994-05-20
Investigator:	adzhitom
Referred To:	ADDITIONAL INVESTIGATION APPROVED
Reported to Dept:	2001-05-02
CID:	Not reported
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	DEC
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	5
Date Entered In Computer:	2001-05-02

DSNY BK DISTRICT 3 GARAGE (Continued) **U001840268**

Spill Record Last Update:	2019-02-08
Spiller Name:	Not reported
Spiller Company:	BROOKLYN NORTH 4
Spiller Address:	525 JOHNSON AVENUE
Spiller Company:	001
Contact Name:	Not reported
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was KOLLEENY TRANSFERRED FROM Y.KRIMGOLD TO KOLLEENY TO II. ISLAM 5/6/05- The site is under remediation by LiRo Engineers through the installation of a multi-phase extraction system to address contamination at the site. Reviewed the qurterly monitoring report (Nov./04-Jan./05) and noted that the system is performing well. Routine monitoring and sampling will continue at the site.Installed the monitoring report in the eDoc Folder. - II 7/6/05- Reviewed the Feb.-Apr./05 monitoring report. GW and Soil monitoring results show that the MPE system is functioning well and remediating site's soil and GW effectively.LiRo plans sampling of MW-10 and MW-11 to have them analyzed for TPH fingerprint as free product persists in these two wells. The MPE system operation should continue as recommended. The proposed 5 soil boring locations are approved for next round of soil samplings. Routine monitoring is to be continued. Installed the report in the eDoc Folder.- II. 9/19/05- Reviewed the May-July/05 monitoring report.Vapor and discharge monitoring results show that the MPE system is effectively collecting and treating contamination. Soil sampling was not required during this monitoring period. GW data show that the remedial system has improved site GW quality. MPE system operation will continue and system components will be adjusted as needed.Filed the report in the eDoc folder.- II 3/07/06: This Spill is transferred from I. Islam to Q. Abidi. 3/31/06: Reviewed Quarterly Monitoring Reports for Aug.-Oct. and Nov.-Dec. 2005. Sent E-mail to DDC. The data show that since the MPE system began operating, groundwater quality has improved at the site, although minor contamination persists. Soil sampling results from four locations out of five were in compliance with NYSDEC standards, except one boring LBR-6 near Stewart Ave. still has significant contamination. Management of the site is being transferred to Greyhawk. The Department suggests that the new CM should review the data and evaluate the site. Extraction well EW-21 is broken and EW-10 is clogged. They should perform another round of groundwater sampling and based on the results, they should recommend a future course of action.- QA 04/10/06: Received email from Andris Ledins of Greyhawk stating that operation of multi-phase extraction system with an air stripper at the site has caused extensive scaling problems in the system and in the sewer discharge pipe at the DOS facility, essentially blocking the pipe which had to be replaced. (See photos in eDocs images folder.) Greyhawk requested permission to shut down the system (rather than making costly repairs), re-evaluate the contaminant levels at the site, and propose an alternative remedial approach. In phone conversation with Andy, I agreed with this approach and asked him to send an email formalizing our conversation, which I could respond to and approve. - J. Kolleeny 04/11/06: Received email from Andy Ledins of Greyhawk summarizing our phone conversation of the previous day regarding suspension of system operation while considering alternate remedial technologies, and asking that I confirm my concurrence with this course of action. I sent email stating that I agreed with the course of action and approving suspension of system operation, but asked that the system

DSNY BK DISTRICT 3 GARAGE (Continued) **U001840268**

be left in place until a new remedial strategy is proposed and approved. I noted that if multi-phase extraction still turns out to be the best way to address site conditions, they could try operating the system bypassing the air stripper to reduce scaling problems, as has been done at other DDC sites (e.g., Queens N. 7). - J. Kolleeny 07/20/06: Reviewed Quarterly Monitoring Report for March-June 2006 submitted by Roux (Greyhawk's consultant). Sent following email to Afsar Samani of DDC: Results of March 2006 groundwater sampling indicate there are low to moderate levels of groundwater contamination persisting in several wells along east edge of site. MPE system at site was shut down in early 2006, with DEC approval, due to accumulation of mineral scale in facility's sewer discharge pipe, with understanding that Greyhawk/Roux would consider alternate remedial technologies. In monitoring report, Roux recommends following: 1. Maintaining system shutdown status and securing system, which will remain on-site. 2. Performing soil vapor investigation, with work plan to be submitted under separate cover. 3. Continuing quarterly groundwater monitoring. 4. Reducing frequency of monitoring well gauging for water levels and presence of free product from monthly to quarterly. 5. Recovering any free product encountered with an appropriate method, such as EFR or bailing. 6. Following soil vapor study, providing a recommendation for future action as appropriate. These recommendations are approved. Please be advised that management of this site and spill case are being transferred to Joseph Maisonave of my staff, so future reports and correspondence regarding the site/spill should be directed to Mr. Maisonave. - J. Kolleeny 7/20/06 DEC lead transferred from Q. Abidi to J.A. Maisonave. - JAM 6/29/07 Roux submitted a request to reduce groundwater monitoring from quarterly to semi-annually at five sites including this one. I sent an email approval today. - JAM 7/1/08 Site Update: Reviewed Quarterly Monitoring Report for the period July through Dec 2006 submitted by Roux and dated Jan. 31, 2007. On the Dec. 1, 2006 sampling event, VOCs were detected at total concentrations ranging from ND in six wells to 390ug/L in MW-06. MTBE and Benzene were the only compounds detected above NYSDEC AWQSGVs. No SVOCs were detected. The monitoring frequency has already been reduced from quarterly to semi-annual. Report uploaded to eDocs. Reviewed Quarterly Monitoring Report for the period Jan through Mar 2007 submitted by Roux and dated June 15, 2007. During the Jan 2007 sampling event, VOCs were detected at total concentrations ranging from ND in two monitoring wells to 250ug/L in MW-06. Wells MW-07 and MW-06 consistently have the highest concentrations and are located near former gasoline tanks (closed-in-place) along Stewert Ave. No SVOCs were detected. Report uploaded to eDocs. Reviewed Semi-annual Monitoring Report for the period April through Sept 2007 submitted by Roux and dated Feb. 11, 2008. Groundwater samples were collected in May and Sept 2007. During the Sept 2007 sampling event, total VOC concentrations were detected ranging from ND in three wells to 181ug/L in well MW-07. Results were similar in May and wells MW-06 and MW-07 consistently have the highest concentrations. ORC socks were installed in well MW-07 on Nov 20, 2007 and in MW-06 on Dec 3, 2007. Roux recommends the following: 1) Maintain system shutdown status and secure the MPE system, which will remain on-site. 2) Continue using ORC socks in monitoring wells MW-06 and MW-07. 3) Continue semi-annual groundwater monitoring (gauging and sampling). 4) Remove wells MW-10, MW-11, MW-12, MW-15 and PT-01 from the monitoring program. 5) Remove SVOCs from the monitoring program. The

DSNY BK DISTRICT 3 GARAGE (Continued) **U001840268**

NYSDEC also received email correspondence on June 25, 2008 from Brian Morrissey of Roux requesting that the MPE system be permanently removed from the site. This request was made by the new property owner since DOS has vacated the site. I sent an email today approving all the above recommendations. Email uploaded to eDocs. - JAM 11-10-2010 The spill was transferred from J. Maisonave to Alex Zhitomirsky, as per V. Brevdo/J. Kolleeny. AZ 2-28-2011 Reviewed Turn-over status report and semi-annual monitoring report dated November 4, 2010. Total VOC concentrations in groundwater increased. The following e-mail was sent to S. Frank, F. Ashkan and V. Brevdo: Dear Steve, I have reviewed site turn-over status report and semi-annual report dated November 4, 2010. Medium to high level VOCs levels were detected in soil. Free phase product is present in one well. LiRo proposed analysis of bio-remediation parameters and EFR in one well. These proposals are approved. USTs closed in place should be removed if feasible. Hot spot soil excavation should be considered as a remedial strategy. AZ 12-05-2011 An email was sent to S. Frank/V. Brevdo/F.Ashkan: Dear Steve, I have reviewed Additional Investigation Work Plan for this site dated September 2, 2011. The plan proposed performing a geophysical survey to determine locations of the two 550 gallon gasoline USTs. If the tanks are located they should be removed, if feasible. Also, the plan proposed additional soil investigation. This proposal is approved. The report stated that some discrepancies exist regarding the tank status. All discrepancies should be clarified and correct information verified in the next monitoring report. Corrected information should be submitted to the PBS Section. The Responsible Party and its contractors are solely responsible for the safe execution of all invasive work performed at the site, and in particular, are responsible for identifying subsurface utilities and safeguarding the structural integrity of any excavations, buildings, utilities, and other structures both on- and off-site that may be adversely affected by the work. The Responsible Party and its contractors must obtain any local, state or federal permits or approvals that may be required to perform the work necessary to address this spill. Furthermore, the Responsible Party and its contractors are solely responsible for the implementation of all appropriate health and safety measures during the performance of this work. AZ 3-20-2012 Reviewed semi-annual monitoring report dated December 28, 2011, and covering April- September 2011. Residual soil moderate to high level VOCs were detected in the vicinity of UST Area 1 and along Stewart Ave.The contamination was detected in the smear zone (9.5-11.5 bgs). Groundwater contamination is present. Free phase product is intermittently present in well MW-14. A GPR survey was performed to determine the status of tanks 001 and 002 in UST Area 1 but the results will be discussed in the next monitoring report. DEC approved an additional soil investigation which has not not been performed yet. AZ 1-31-2013 GPR investigation confirmed that there are some discrepancies in PBS records. ORC socks will continue to be utilized. The approved additional site investigation was tentatively scheduled in the fourth quarter of 2012. An updated PBS Registry will be submitted to DEC. AZ 7-11-2013 Reviewed monitoring report dated January 23, 2013. the approved additional site investigation is tentatively scheduled for the second quarter 2013. An updated PBS Registry application will be submitted to NYSDEC once approved by NYC DOS. AZ 9-25-2013 Reviewed monitoring report dated June 12, 2013. The approved additional site investigation is tentatively scheduled for the third quarter of 2013. Product removal from well MW-14 will

DSNY BK DISTRICT 3 GARAGE (Continued) **U001840268**

continue via petroleum absorbent socks. If product levels trend upward, additional product removal methods will be considered. The following e-mail was sent to S. Frank/F. Ashkan/V. Brevdo: Dear Steve, I have reviewed a monitoring report for this site dated June 12, 2013. I approve removal of monitoring well MW-05 from the sampling schedule. Sincerely, Alex Zhitomirsky 6-25-2014 I have reviewed a semi-annual monitoring report dated 12-9-2013. Product removal from well MW-14 will continue via absorbent socks. An absorbent sock will be placed in well MW-05, if free phase product is present. ORC socks are installed in two wells. The following e-amil was sent to Steve Frank/V. Brevdo: Dear Steve, I have reviewed a monitoring report for the above site. Based upon the recent groundwater sampling, LiRo recommends that wells MW-02 and MW-03 be removed from the site sampling program. I concur with this recommendation. Sincerely, Alexander Zhitomirsky 3-11-2015 I have reviewed a semi-annual monitoring report dated 5-20-2014. Elevated residual VOC concentrations were reported in September 2013 in soil at depths 8.5'-10' in the vicinity of borings LBR-11 through LBR-13. Free phase product has been intermittently reported in wells MW-14 and MW-05. AZ 5-26-2015 I have reviewed a semi-annual monitoring report dated 10-17-2014. Elevated residual VOC concentrations were reported in September 2013 in soil at depths 8.5'-10' in the vicinity of borings LBR-11 through LBR-13. Free phase product has been intermittently reported in wells MW-14 and MW-05. ORC socks are installed in wells MW-06 and MW-07. The maximum total VOC concentration during the August 2014 sampling was 47 ppb. Well MW-17 was not sampled due to a vehicle that was parked over the well. AZ 1-25-2016 I have reviewed a semi-annual monitoring report dated 6-23-2015. Elevated residual VOC concentrations were reported in September 2013 in soil at depths 8.5'-10' in the vicinity of borings LBR-11 through LBR-13. Free phase product has been intermittently reported in wells MW-14 and MW-05. Free-phase product was measured in well MW-05 during August 26, 2013, January 8, 2015 and in April 2015 sampling events following purging. A TPH product sample was collected and identified the product as weathered #2 fuel oil/diesel. The free-phase product was removed via absorbent socks. AZ 8-9-2016 I have reviewed a semi-annual monitoring report dated 1-18-2016. Elevated residual VOC concentrations were reported in September 2013 in soil at depths 8.5'-10' in the vicinity of borings LBR-11 through LBR-13. Free phase product has been intermittently reported in wells MW-14 and MW-05. Free-phase product was measured in well MW-05 during May 11, 2015, June 26, 2015 and in August 20, 2015 sampling events following purging. On June 26, 2015, product thickness was 1.91'. A TPH product sample was collected and identified the product as weathered #2 fuel oil/diesel. b The free-phase product was removed via absorbent socks. LiRo will advance two soil borings in the vicinity of MW-05. LiRo will determine the integrity of extraction wells EW-19 and EW-20. The wells will be gauged to determine presence/absence of free-phase product. AZ 4-3-2017 I have reviewed a semi-annual monitoring report dated 7-14-2016. During this monitoring period, free-phase product was measured in MW-01 at thickness ranging from 0.66' to 1.27'. Product had not been measured in this well since 2005. A product sample was collected in February 2016 and identified as fuel oil (similar to MW-05). Free -phase product was removed via EFR in March-April 2016. This well is not located near the current diesel fueling operations. An inspection of the well head and general vicinity did not indicate the source as a surface spill. LiRo

DSNY BK DISTRICT 3 GARAGE (Continued) **U001840268**

initiated weekly EFR in June 2016 and will continue until product levels return to historic levels. LiRo will advance five soil borings and install four wells in the vicinity of monitoring wells MW-01 and MW-05. AZ 6-20-2017 I have reviewed a semi-annual monitoring report dated 12-29-2016. LiRo will continue to utilize ORC socks, weekly EFR. LiRo will install passive product skimmers in wells LMW-02, LMW-03 and LMW-04 to enhance product recovery. Also, they will complete installation of additional borings/monitoring wells to delineate soil contamination and product sources. Free-phase product was measured in three new monitoring wells installed in August 2016.Free -phase product in LMW-02 has thickness of 2.15'. Product was reported as #2 fuel oil. AZ 2-7-2018 I have reviewed a semi-annual monitoring report dated 2-7-2017. The product remains on site and with the exception of wells LMW-04 and MW-05, the product IS mainly confined TO UST area 1 and UST area 3 below the concrete flooring. The source of free-phase product has not been determined. DSNY has not provided LiRo with any tank testing data. Product thickens ranged from 0.01' to 1.05'. Product was encountered in 8 wells.LiRo will continue to utilize ORC socks, weekly EFR. LiRo will install additional passive product skimmers. Also, they will investigate conducting tightness testing on the lines for the OWS. In addition, they will collect another round of product samples. AZ 8-3-2018 I have reviewed a semi-annual monitoring report dated 1-11-2018. The product remains on site. During this monitoring period product thickness have ranged from a sheen to 1.8'. The area impacted by free-phase product appears t be delineated. It's possible that the product was previously bound in soil, however, due the dramatic drop in groundwater elevations, it was released from the soil pores. LiRo estimated the amount of free-phase product in the subsurface at approximately 500-675 gallons. LiRo will continue EFR as an IRM measure. I have contacted S. Frank and stated that more aggressive remedial approach (passive product pumps) should be used at the site. LiRo will look into it. AZ 2-8-2018 I have reviewed a semi-annual monitoring report dated 7-31-2018. EFR appears to be reducing the free-phase product area and thickness. LiRo estimated volume of free-phase product as approximately 500-675 gallons. The product remains on site. During this monitoring period product thickness have ranged from 0.06' to 0.78'. AZ"

Remarks: "Groundwater and soil contamination was found during subsurface investigation."

All Materials:

Site ID:	271156
Operable Unit ID:	849558
Operable Unit:	01
Material ID:	526688
Material Code:	0009
Material Name:	gasoline
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

Name:	DOS
Address:	525 JOHNSON AVENUE

DSNY BK DISTRICT 3 GARAGE (Continued) **U001840268**

City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9402039 / 2003-03-10
Facility ID:	9402039
Facility Type:	ER
DER Facility ID:	220706
Site ID:	271157
DEC Region:	2
Spill Cause:	Other
Spill Class:	C4
SWIS:	2401
Spill Date:	1994-05-11
Investigator:	KSTANG
Referred To:	Not reported
Reported to Dept:	1994-05-11
CID:	Not reported
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Other
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	True
Remediation Phase:	0
Date Entered In Computer:	1994-05-25
Spill Record Last Update:	2004-04-07
Spiller Name:	Not reported
Spiller Company:	Not reported
Spiller Address:	Not reported
Spiller Company:	001
Contact Name:	Not reported
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was TANG 03/10/2003 Closed Due To The Nature / Extent Of The Spill Report" Not reported
Remarks:	"DRILLING EXPERIMENT- CLOSED 4 GAS TANKS W/NO TESTING TO ARRANGE FOR TESTING."

All Materials:

Site ID:	271157
Operable Unit ID:	999103
Operable Unit:	01
Material ID:	385780
Material Code:	0009
Material Name:	gasoline
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	1.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

Z199 **NYC DEPT OF SANITATION - J SCHIAVONE** **RCRA NonGen / NLR** **1000140991**
ENE **525 JOHNSON AVE BK-N-4** **ECHO** **NYD982529703**
1/8-1/4 **BROOKLYN, NY 11237**
0.218 mi.
1149 ft. **Site 7 of 7 in cluster Z**

Relative:
Lower

Actual:
14 ft.

RCRA NonGen / NLR:

Date form received by agency:	01/01/2007
Facility name:	NYC DEPT OF SANITATION - J SCHIAVONE
Facility address:	525 JOHNSON AVE BK-N-4 BROOKLYN, NY 11237-1206
EPA ID:	NYD982529703
Mailing address:	58TH ST WOODSIDE, NY 11377
Contact:	Not reported
Contact address:	58TH ST WOODSIDE, NY 11377
Contact country:	US
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	RANDOLPH REALTY CO
Owner/operator address:	NOT REQUIRED NOT REQUIRED, WY 99999
Owner/operator country:	US
Owner/operator telephone:	212-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	RANDOLPH REALTY CO
Owner/operator address:	NOT REQUIRED NOT REQUIRED, WY 99999
Owner/operator country:	US
Owner/operator telephone:	212-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No

NYC DEPT OF SANITATION - J SCHIAVONE (Continued) **1000140991**

On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2006
Site name: NYC DEPT OF SANITATION - J SCHIAVONE
Classification: Not a generator, verified

Date form received by agency: 07/08/1999
Site name: NYC DEPT OF SANITATION - J SCHIAVONE
Classification: Not a generator, verified

Date form received by agency: 02/02/1988
Site name: NYC DEPT OF SANITATION - J SCHIAVONE
Classification: Large Quantity Generator

Hazardous Waste Summary:

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: X003
. Waste name: OTHER STATE REGULATED WASTES [i.e., DIESEL FUEL, GASOLINE AND HOME HEATING OIL]

Violation Status: No violations found

ECHO:
Envid: 1000140991
Registry ID: 110004421322
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110004421322

Y200 **CON EDISON** **NY MANIFEST** **S117738466**
NW **179 MORGAN AVE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.219 mi.
1155 ft. **Site 2 of 14 in cluster Y**

Relative: **Lower**
Actual: **14 ft.**

NY MANIFEST:
Country: USA
EPA ID: NYP004715157
Facility Status: Not reported
Location Address 1: 179 MORGAN AVE
Code: BP
Location Address 2: Not reported
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: 11237
Location Zip 4: Not reported

CON EDISON (Continued) **S117738466**

NY MANIFEST:

EPAID:	NYP004715157
Mailing Name:	CON EDISON
Mailing Contact:	CON EDISON
Mailing Address 1:	4 IRVING PL
Mailing Address 2:	15TH FL
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2015
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	01/14/2015
Trans1 Recv Date:	01/14/2015
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	01/20/2015
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004715157
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002620464GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	300
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008

CON EDISON (Continued) **S117738466**

Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

Y201 **CON EDISON - SERVICE BOX 16107** **RCRA-LQG** **1019324684**
NW **179 MORGAN AVE** **NYP004715157**
1/8-1/4 **BROOKLYN, NY 11237**
0.219 mi.
1155 ft. **Site 3 of 14 in cluster Y**

Relative:
Lower

Actual:
14 ft.

RCRA-LQG:

Date form received by agency:	02/05/2016
Facility name:	CON EDISON - SERVICE BOX 16107
Facility address:	179 MORGAN AVE BROOKLYN, NY 11237
EPA ID:	NYP004715157
Mailing address:	IRVING PLACE, 15TH FL NE NEW YORK, NY 10003
Contact:	THERESA BURKARD
Contact address:	IRVING PLACE, 15TH FL NE NEW YORK, NY 10003
Contact country:	US
Contact telephone:	212-460-2262
Contact email:	BURKARDT@CONED.COM
EPA Region:	02
Classification:	Large Quantity Generator
Description:	Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:

Owner/operator name:	CONSOLIDATED EDISON COMPANY OF NY, INC.
Owner/operator address:	IRVING PLACE NEW YORK, NY 10003
Owner/operator country:	US
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	01/14/2015

CON EDISON - SERVICE BOX 16107 (Continued) **1019324684**

Owner/Op end date: Not reported

Owner/operator name: CONSOLIDATED EDISON COMPANY OF NY, INC.
Owner/operator address: IRVING PLACE
NEW YORK, NY 10003
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 01/14/2015
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Hazardous Waste Summary:

. Waste code: D008
. Waste name: LEAD

Biennial Reports:

Last Biennial Reporting Year: 2017

Annual Waste Handled:
Waste code: D008
Waste name: LEAD
Amount (Lbs): 2490

Violation Status: No violations found

Y202 **CON EDISON - SERVICE BOX 16107** **NJ MANIFEST** **S120666380**
NW **179 MORGAN AVE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.219 mi.
1155 ft. **Site 4 of 14 in cluster Y**

Relative:
Lower

Actual:
14 ft.

NJ MANIFEST:

EPA Id:	NYP004715157
Mail Address:	IRVING PLACE, 15TH FL NE
Mail City/State/Zip:	NEW YORK, NY 10003
Facility Phone:	Not reported
Emergency Phone:	Not reported
Contact:	THERESA BURKARD
Comments:	Not reported
SIC Code:	Not reported
County:	NY047
Municipal:	Not reported
Previous EPA Id:	Not reported
Gen Flag:	Not reported
Trans Flag:	Not reported
TSDF Flag:	Not reported
Name Change:	Not reported
Date Change:	Not reported

Manifest:

Manifest Number:	002620464GBF
EPA ID:	NYP004715157
Date Shipped:	1/14/2015
TSDF EPA ID:	NJD991291105
Transporter EPA ID:	NJD003812047
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	Not reported
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	Not reported
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported

CON EDISON - SERVICE BOX 16107 (Continued) **S120666380**

Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	NEW YORK, NY 10003
Reason Load Was Rejected:	Not reported

Y203 **RAINBOW POLYBAG-MORGAN AVE** **RCRA-CESQG** **1000307846**
NW **179 MORGAN AVE** **US AIRS** **NYD084090414**
1/8-1/4 **BROOKLYN, NY 11237** **FINDS**
0.219 mi. **ECHO**
1155 ft. **Site 5 of 14 in cluster Y** **NY MANIFEST**

Relative:
Lower

Actual:
14 ft.

RCRA-CESQG:

Date form received by agency:	01/01/2007
Facility name:	RAINBOW POLY BAG CO INC
Facility address:	179 MORGAN AVE BROOKLYN, NY 11237-1015
EPA ID:	NYD084090414
Mailing address:	MORGAN AVE BROOKLYN, NY 11237
Contact:	Not reported
Contact address:	MORGAN AVE BROOKLYN, NY 11237
Contact country:	US
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	02
Land type:	Facility is not located on Indian land. Additional information is not known.
Classification:	Conditionally Exempt Small Quantity Generator
Description:	Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

Owner/Operator Summary:

Owner/operator name:	RAINBOW POLY BAG CO
Owner/operator address:	NOT REQUIRED NOT REQUIRED, WY 99999
Owner/operator country:	US
Owner/operator telephone:	212-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner

RAINBOW POLYBAG-MORGAN AVE (Continued) **1000307846**

Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: RAINBOW POLY BAG CO
Owner/operator address: NOT REQUIRED
NOT REQUIRED, WY 99999
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2006
Site name: RAINBOW POLY BAG CO INC
Classification: Small Quantity Generator

Date form received by agency: 07/08/1999
Site name: RAINBOW POLY BAG CO INC
Classification: Not a generator, verified

Date form received by agency: 10/19/1987
Site name: RAINBOW POLY BAG CO INC
Classification: Small Quantity Generator

Hazardous Waste Summary:

. Waste code: D001
. Waste name: IGNITABLE WASTE

Violation Status: No violations found

Evaluation Action Summary:
Evaluation date: 11/10/1998

RAINBOW POLYBAG-MORGAN AVE (Continued) **1000307846**

Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

Evaluation date: 12/15/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

US AIRS (AFS):
Envid: 1000307846
Region Code: 02
County Code: NY047
Programmatic ID: AIR NY0000002610400020
Facility Registry ID: 110009468833
D and B Number: Not reported
Facility Site Name: RAINBOW POLYBAG-MORGAN AVE
Primary SIC Code: 2752
NAICS Code: 999999
Default Air Classification Code: SMI
Facility Type of Ownership Code: POF
Air CMS Category Code: Not reported
HPV Status: Not reported

US AIRS (AFS):
Region Code: 02
Programmatic ID: AIR NY0000002610400020
Facility Registry ID: 110009468833
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1985-11-04 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610400020
Facility Registry ID: 110009468833
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1990-08-01 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610400020
Facility Registry ID: 110009468833
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1992-04-23 00:00:00

RAINBOW POLYBAG-MORGAN AVE (Continued) **1000307846**

Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610400020
Facility Registry ID: 110009468833
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1994-10-18 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

FINDS:

Registry ID: 110009468833

Environmental Interest/Information System

AFS (Aerometric Information Retrieval System (AIRS) Facility Subsystem) replaces the former Compliance Data System (CDS), the National Emission Data System (NEDS), and the Storage and Retrieval of Aerometric Data (SAROAD). AIRS is the national repository for information concerning airborne pollution in the United States. AFS is used to track emissions and compliance data from industrial plants. AFS data are utilized by states to prepare State Implementation Plans to comply with regulatory programs and by EPA as an input for the estimation of total national emissions. AFS is undergoing a major redesign to support facility operating permits required under Title V of the Clean Air Act.

AIR SYNTHETIC MINOR

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

FIS (New York - Facility Information System) is New York's Department of Environmental Conservation (DEC) information system for tracking environmental facility information found across the State.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid: 1000307846
Registry ID: 110009468833
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110009468833

RAINBOW POLYBAG-MORGAN AVE (Continued) **1000307846**

NY MANIFEST:

Country:	USA
EPA ID:	NYD084090414
Facility Status:	Not reported
Location Address 1:	179 MORGAN AVE
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYD084090414
Mailing Name:	RAINBOW POLY BAG COMPANY INC
Mailing Contact:	JAMES SINGLETARX
Mailing Address 1:	179 MORGAN AVENUE
Mailing Address 2:	Not reported
Mailing City:	BROOKLYN
Mailing State:	NY
Mailing Zip:	11237
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	7183863500

NY MANIFEST:

Document ID:	NYG4280679
Manifest Status:	Not reported
seq:	Not reported
Year:	2004
Trans1 State ID:	56701PANY
Trans2 State ID:	Not reported
Generator Ship Date:	05/14/2004
Trans1 Recv Date:	05/14/2004
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	05/17/2004
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYD084090414
Trans1 EPA ID:	MAD985286988
Trans2 EPA ID:	Not reported
TSDF ID 1:	NYD077444
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	D001 - NON-LISTED IGNITABLE WASTES

RAINBOW POLYBAG-MORGAN AVE (Continued) **1000307846**

Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	16720
Units:	P - Pounds
Number of Containers:	038
Container Type:	DM - Metal drums, barrels
Handling Method:	B Incineration, heat recovery, burning.
Specific Gravity:	01.00

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

AD204 **APT COMPLEX** **NY LTANKS** **S105998649**
NW **349 SCHOLES ST** **N/A**
1/8-1/4 **BROOKLYN, NY**
0.219 mi.
1157 ft. **Site 2 of 5 in cluster AD**

Relative: **Lower**

Actual: **16 ft.**

LTANKS:

Name:	APT COMPLEX
Address:	349 SCHOLES ST
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0300325 / 2004-03-24
Facility ID:	0300325
Site ID:	117954
Spill Date:	2003-03-12
Spill Cause:	Tank Test Failure
Spill Source:	Commercial/Industrial
Spill Class:	B3
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	JMKRIMGO
Referred To:	Not reported
Reported to Dept:	2003-04-09
CID:	39
Water Affected:	Not reported
Spill Notifier:	Tank Tester
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	2003-04-09
Spill Record Last Update:	2004-03-24
Spiller Name:	Not reported
Spiller Company:	APT COMPLEX
Spiller Address:	Not reported
Spiller County:	999
Spiller Contact:	JOHN
Spiller Phone:	(718) 497-6044
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	102538
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was

APT COMPLEX (Continued) **S105998649**

KRIMGOLD Called John (718) 497-6044, left message. Allison Walsh returned call. Allison is a Lawyer, representing APT Complex, (John). She asked that the tank test failure letter sent to her. Her address is 460 Park Avenue New York, NY 10022. # (212) 421-2150 Letter was prepared and sent 4/10/03. This facility is not registered with PBS E.R. Tank test letter was returned 5/2/03. Tank test failure letter sent to John 349 Scholes Street Brooklyn, NY 11206 E.R. 10/22/03. YK. Facility registered on 4/25/03 PBS # 2-608900. However, TT is overdue. 2/2/2004. YK faxed an old TTF letter dated April 10, 2003 to David Yudelson (212-421-2150 X 219) attorney for this property. 2/23/04. J.Krimgold talked to David Y. Tank taken out of service but not close yet. Trade-Winds did soil borings(?). He should call me back today with more info. 3/24/04. J.Krimgold reviewed a letter report prepared by Trade-Winds dated 3/16/04. 3 soil samples was taken by drilling through the tank bottom of 3000 gal tank and 2 samples from 1100 gal tank. All came out negative. NFA letter on 3/24/04. "

Remarks: "tank test failure "

All TTF:

Facility ID:	0300325
Spill Number:	0300325
Spill Tank Test:	1528245
Site ID:	117954
Tank Number:	1
Tank Size:	3000
Material:	0001
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	03
Test Method 2:	Horner EZ Check I or II
Leak Rate:	.00
Gross Fail:	Not reported
Modified By:	Spills
Last Modified Date:	Not reported

All Materials:

Site ID:	117954
Operable Unit ID:	866409
Operable Unit:	01
Material ID:	508406
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

AD205 **349 SCHOLES ST.** **NY UST** **U004045451**
NW **349 SCHOLES STREET** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.219 mi.
1157 ft. **Site 3 of 5 in cluster AD**

Relative:
Lower

Actual:
16 ft.

UST:

Name:	349 SCHOLES ST.
Address:	349 SCHOLES STREET
City,State,Zip:	BROOKLYN, NY 11206
Id/Status:	2-608900 / Unregulated/Closed
Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	N/A
UTM X:	589943.17668
UTM Y:	4507132.47081
Site Type:	Manufacturing (Other than Chemical)/Processing

Affiliation Records:

Site Id:	30748
Affiliation Type:	Facility Owner
Company Name:	MILLENIUM PROCESSORS LLC
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	349 SCHOLES ST.
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11206
Country Code:	001
Phone:	(718) 497-1840
EMail:	Not reported
Fax Number:	Not reported
Modified By:	NRLOMBAR
Date Last Modified:	2012-10-09

Site Id:	30748
Affiliation Type:	Mail Contact
Company Name:	EMPIRE STATE FUEL OIL
Contact Type:	Not reported
Contact Name:	KENNETH REED
Address1:	1640 MCDONALD AVENUE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11230
Country Code:	001
Phone:	(718) 627-5100
EMail:	MMAISTRE@RICEHIGHSCHOOL.COM
Fax Number:	Not reported
Modified By:	dxliving
Date Last Modified:	2008-02-15

Site Id:	30748
Affiliation Type:	Facility Operator
Company Name:	349 SCHOLES ST.
Contact Type:	Not reported
Contact Name:	JOHN WYE
Address1:	Not reported

349 SCHOLES ST. (Continued) **U004045451**

Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 497-1840
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	30748
Affiliation Type:	Emergency Contact
Company Name:	MILLENIUM PROCESSORS LLC
Contact Type:	Not reported
Contact Name:	JOHN WYE
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 497-1840
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	001
Tank ID:	65937
Tank Status:	Closed - In Place
Material Name:	Closed - In Place
Capacity Gallons:	3000
Install Date:	Not reported
Date Tank Closed:	03/17/2005
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Tightness Test Method:	00
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	NRLOMBAR
Last Modified:	04/14/2017

Equipment Records:

C03 - Pipe Location - Aboveground/Underground Combination
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
H00 - Tank Leak Detection - None
L09 - Piping Leak Detection - Exempt Suction Piping
B00 - Tank External Protection - None

349 SCHOLES ST. (Continued) **U004045451**

F00 - Pipe External Protection - None
I04 - Overfill - Product Level Gauge (A/G)
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
I05 - Overfill - Vent Whistle

Tank Number:	002
Tank ID:	245868
Tank Status:	Closed - In Place
Material Name:	Closed - In Place
Capacity Gallons:	1100
Install Date:	Not reported
Date Tank Closed:	03/17/2005
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	NRLOMBAR
Last Modified:	04/14/2017

AC206 **353 MCKIBBIN STREET** **NY ENG CONTROLS** **S106704102**
WSW **353 MCKIBBIN STREET** **NY INST CONTROL** **N/A**
1/8-1/4 **BROOKLYN, NY 11206** **NY BROWNFIELDS**
0.222 mi.
1170 ft. **Site 2 of 2 in cluster AC**

Relative: **Lower**
Actual: **17 ft.**

ENG CONTROLS:

Name:	353 MCKIBBIN STREET
Address:	353 MCKIBBIN STREET
City,State,Zip:	BROOKLYN, NY 11206
Site Code:	333585
HW Code:	C224102
Control Code:	15
Control Type:	ENG
Date Record Added:	12/21/2011
Date Rec Updated:	03/26/2019
Updated By:	SNBOLLER
Site Description:	Location: The Site is situated on an approximately one-acre parcel bounded by Boerum Street and commercial properties to the north; by Bogart Street and commercial properties to the east; by McKibbin Street and a New York City Park and residential property to the south; and by a concrete facility adjacent and to the west. It is identified as Block 3083 and Lots 16 and 30 on the Kings County Tax Map. Current Uses/Zoning: The Site, which is currently vacant, is located in an industrial area of Kings County (Brooklyn) and is zoned MI-2 (Manufacturing District). The surrounding parcels are primarily industrial and manufacturing, with some residential properties nearby. Historical Uses: The Site was undeveloped land prior to the early 1900 s. F.H. Kalfleisch Chemical Works occupied a portion of the Site starting around 1907. Between 1951 and 1990, the Site hosted lacquer spraying operations. The Site assumed various configurations

353 MCKIBBIN STREET (Continued) **S106704102**

with portions of the site being used for different purpose between 1954 through 1994. The Site became vacant and undeveloped since 1994. Geology: The Site is located in the Atlantic Coastal Plain Physiographic Province. Bedrock beneath the Site consists of Pre-Cambrian Age crystalline metamorphic and igneous rock. No bedrock outcrops exist at the Site. Depth to bedrock at the Site is unknown, but is likely greater than 200 feet below ground surface (bgs). Surficial materials have been mapped as Pleistocene Age deposits of the Upper Glacial Aquifer, Gardiners Clay and Jameco Formation. Soils mantling the Site have been identified as Urban Fill. Urban fill consists of construction debris, rock, and ash. Based on information obtained from environmental borings, the Site is underlain by approximately 7 feet of urban fill. Glacial deposits underlie the urban fill and consist predominately of varying percentages of silt, sand and gravel. Hydrogeology: Shallow ground water is present in the fill material and/or the glacial deposits present beneath the Site. Depth to ground water is approximately 9 feet to 15 feet bgs. The predominant ground water table flow is north-northwest. The deep ground water flow is to the north.

Env Problem: Nature and Extent of Contamination: Prior to Remediation: Soil - Concentrations of regulated compounds that exceed RSCOs were observed at varying degrees in subsurface soil samples collected across the Site and along the off-Site perimeter. VOC concentrations greater than TAGM #4046 RSCOs are present predominately in the areas identified as Hotspot #1 and Hotspot #2. The extent of SVOCs detected at concentrations that exceed the individual TAGM #4046 RSCOs in subsurface soils is widespread across the Site and off-Site locations and predominately located in the urban fill deposits. Groundwater - VOCs were detected at concentrations that exceed TOGS in five of ten ground water samples collected from the shallow overburden aquifer, and each of the three sample collected from the deep portion of the overburden aquifer. Hydraulically upgradient monitoring well MW-9 did not exhibit VOC detections above TOGS. On the Site s northern property boundary, MW-6 and MW-7 represents hydraulically downgradient monitoring wells, and VOCs were not detected above TOGS in ground water samples collected from these downgradient wells. The ground water sample collected from monitoring well MW-12 contained the greatest number of VOCs detected above TOGS and the highest concentrations of VOCs. The location of MW-12 is near and hydraulically cross gradient of Hotspot #1 where shallow subsurface soil samples exhibited TCE concentrations three orders of magnitude above TAGM #4046 RSCOs. Trimethylbenzene detected at concentrations above the TOGS values of 5 ug/l is limited to shallow ground water collected from Monitoring Wells MW-3 and MW-5. The location of Monitoring Well MW-5 is near the boundary of Hotspot #2. Soil Gas - Soil gas samples were collected at temporary sample locations SG-1 through SG-4 and permanent sample locations SV-1 through SV-4 to characterize soil gas within the boundary of the Site and along the perimeter of the Site and to evaluate potential effects of soil gas on indoor air. Table 5 presents the soil gas analytical results. All soil gas samples analyzed exhibit detectible concentrations of VOCs. The soil gas samples exhibiting the highest concentration of chlorinated hydrocarbons were collected from Soil-gas Probe SV-4. Soil-gas Probe SV-4 is located hydraulically cross gradient of the Site and groundwater samples and subsurface soil samples collected from Monitoring Well MW-9 (located adjacent to SV-4) exhibited no VOCs at concentrations above screening criteria. Therefore, it is

353 MCKIBBIN STREET (Continued) **S106704102**

	unlikely that the concentrations of chlorinated hydrocarbons detected in soil gas samples collected from SV-4 are the result of volatilization of VOCs from a local on-Site groundwater source. Subsurface soil above the water table in Hotspot # 2 and/or off-Site impacts are potential sources of chlorinated hydrocarbons in off-Site soil gas. Post-Remediation: Remediation at the site is complete. Prior to remediation, the primary contaminants of concern were volatile and semi-volatile organic compounds in soil, trichloroethene and trimethylbenzene in groundwater and chlorinated VOCs in soil vapor.
Health Problem:	People are not drinking contaminated groundwater because the area is served by a public water supply not affected by the site. Since some contaminated soils remain at the site below concrete or clean backfill, people are not expected to come into contact with contaminated soils unless they dig below surface materials. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Actions have been taken on-site to address the potential for soil vapor intrusion to occur. Environmental sampling indicates that off-site soil vapor intrusion is a potential exposure pathway and actions have been recommended to address exposure concerns.
Dump:	False
Structure:	False
Lagoon:	False
Landfill:	False
Pond:	False
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	40:42:23.8 / 73:56:3.1
Dell:	False
Record Add:	2004-11-12 08:31:00
Record Upd:	2015-02-11 11:53:00
Updated By:	RJCOZZY
Own Op:	Owner
Sub Type:	06
Owner Name:	Luke Lichota
Owner Company:	Bogart Plaza LLC
Owner Address:	589 Johnson Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11237
Owner Country:	United States of America
Own Op:	Document Repository
Sub Type:	NNN
Owner Name:	Not reported
Owner Company:	Brooklyn Public Library
Owner Address:	Bushwick Branch
Owner Addr2:	340 Bushwick Avenue
Owner City,St,Zip:	Brooklyn, NY 11206
Owner Country:	United States of America
Own Op:	Applicant/Requestor
Sub Type:	P03
Owner Name:	Luke Lichota
Owner Company:	Bogart Plaza LLC
Owner Address:	589 Johnson Avenue

353 MCKIBBIN STREET (Continued) **S106704102**

Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11237
Owner Country:	United States of America
HW Code:	C224102
Waste Type:	ACETONE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	MERCURY
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	METHYLENE CHLORIDE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	TOLUENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	BENZO(B)FLUORANTHENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	XYLENE (MIXED)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	1,1,2 TCA
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	COPPER
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	ZINC
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	BENZO(A)PYRENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	DIBENZ[A,H]ANTHRACENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	TRICHLOROETHENE (TCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	1,1,2-TRICHLORETHYLENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	1,1,2-TRICHLORETHYLENE

353 MCKIBBIN STREET (Continued) **S106704102**

Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	1,1,2-TCA
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	ETHYLBENZENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	BENZ(A)ANTHRACENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
Crossref ID:	W2-1054-05-03
Cross Ref Type Code:	23
Cross Ref Type:	Agreement/Consent Order Number
Record Added Date:	2009-05-07 15:32:00
Record Updated:	2009-05-07 15:32:00
Updated By:	MOBARRIE
Crossref ID:	2011000430604
Cross Ref Type Code:	25
Cross Ref Type:	County Recording Identifier
Record Added Date:	2011-12-20 13:54:00
Record Updated:	2011-12-20 13:54:00
Updated By:	MXYAU
Name:	353 MCKIBBIN STREET
Address:	353 MCKIBBIN STREET
City,State,Zip:	BROOKLYN, NY 11206
Site Code:	333585
HW Code:	C224102
Control Code:	13
Control Type:	ENG
Date Record Added:	12/21/2011
Date Rec Updated:	03/26/2019
Updated By:	SNBOLLER
Site Description:	Location: The Site is situated on an approximately one-acre parcel bounded by Boerum Street and commercial properties to the north; by Bogart Street and commercial properties to the east; by McKibbin Street and a New York City Park and residential property to the south; and by a concrete facility adjacent and to the west. It is identified as Block 3083 and Lots 16 and 30 on the Kings County Tax Map. Current Uses/Zoning: The Site, which is currently vacant, is located in an industrial area of Kings County (Brooklyn) and is zoned MI-2 (Manufacturing District). The surrounding parcels are primarily industrial and manufacturing, with some residential properties nearby. Historical Uses: The Site was undeveloped land prior to the early 1900 s. F.H. Kalfleisch Chemical Works occupied a portion of the Site starting around 1907. Between 1951 and 1990, the Site hosted lacquer spraying operations. The Site assumed various configurations with portions of the site being used for different purpose between 1954 through 1994. The Site became vacant and undeveloped since 1994. Geology: The Site is located in the Atlantic Coastal Plain Physiographic Province. Bedrock beneath the Site consists of Pre-Cambrian Age crystalline metamorphic and igneous rock. No bedrock outcrops exist at the Site. Depth to bedrock at the Site is unknown,

353 MCKIBBIN STREET (Continued) **S106704102**

but is likely greater than 200 feet below ground surface (bgs). Surficial materials have been mapped as Pleistocene Age deposits of the Upper Glacial Aquifer, Gardiners Clay and Jameco Formation. Soils mantling the Site have been identified as Urban Fill. Urban fill consists of construction debris, rock, and ash. Based on information obtained from environmental borings, the Site is underlain by approximately 7 feet of urban fill. Glacial deposits underlie the urban fill and consist predominately of varying percentages of silt, sand and gravel. Hydrogeology: Shallow ground water is present in the fill material and/or the glacial deposits present beneath the Site. Depth to ground water is approximately 9 feet to 15 feet bgs. The predominant ground water table flow is north-northwest. The deep ground water flow is to the north.

Env Problem: Nature and Extent of Contamination: Prior to Remediation: Soil - Concentrations of regulated compounds that exceed RSCOs were observed at varying degrees in subsurface soil samples collected across the Site and along the off-Site perimeter. VOC concentrations greater than TAGM #4046 RSCOs are present predominately in the areas identified as Hotspot #1 and Hotspot #2. The extent of SVOCs detected at concentrations that exceed the individual TAGM #4046 RSCOs in subsurface soils is widespread across the Site and off-Site locations and predominately located in the urban fill deposits. Groundwater - VOCs were detected at concentrations that exceed TOGS in five of ten ground water samples collected from the shallow overburden aquifer, and each of the three sample collected from the deep portion of the overburden aquifer. Hydraulically upgradient monitoring well MW-9 did not exhibit VOC detections above TOGS. On the Site s northern property boundary, MW-6 and MW-7 represents hydraulically downgradient monitoring wells, and VOCs were not detected above TOGS in ground water samples collected from these downgradient wells. The ground water sample collected from monitoring well MW-12 contained the greatest number of VOCs detected above TOGS and the highest concentrations of VOCs. The location of MW-12 is near and hydraulically cross gradient of Hotspot #1 where shallow subsurface soil samples exhibited TCE concentrations three orders of magnitude above TAGM #4046 RSCOs. Trimethylbenzene detected at concentrations above the TOGS values of 5 ug/l is limited to shallow ground water collected from Monitoring Wells MW-3 and MW-5. The location of Monitoring Well MW-5 is near the boundary of Hotspot #2. Soil Gas - Soil gas samples were collected at temporary sample locations SG-1 through SG-4 and permanent sample locations SV-1 through SV-4 to characterize soil gas within the boundary of the Site and along the perimeter of the Site and to evaluate potential effects of soil gas on indoor air. Table 5 presents the soil gas analytical results. All soil gas samples analyzed exhibit detectible concentrations of VOCs. The soil gas samples exhibiting the highest concentration of chlorinated hydrocarbons were collected from Soil-gas Probe SV-4. Soil-gas Probe SV-4 is located hydraulically cross gradient of the Site and groundwater samples and subsurface soil samples collected from Monitoring Well MW-9 (located adjacent to SV-4) exhibited no VOCs at concentrations above screening criteria. Therefore, it is unlikely that the concentrations of chlorinated hydrocarbons detected in soil gas samples collected from SV-4 are the result of volatilization of VOCs from a local on-Site groundwater source. Subsurface soil above the water table in Hotspot # 2 and/or off-Site impacts are potential sources of chlorinated hydrocarbons in off-Site soil gas. Post-Remediation: Remediation at the site is complete.

353 MCKIBBIN STREET (Continued) **S106704102**

	Prior to remediation, the primary contaminants of concern were volatile and semi-volatile organic compounds in soil, trichloroethene and trimethylbenzene in groundwater and chlorinated VOCs in soil vapor.
Health Problem:	People are not drinking contaminated groundwater because the area is served by a public water supply not affected by the site. Since some contaminated soils remain at the site below concrete or clean backfill, people are not expected to come into contact with contaminated soils unless they dig below surface materials. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Actions have been taken on-site to address the potential for soil vapor intrusion to occur. Environmental sampling indicates that off-site soil vapor intrusion is a potential exposure pathway and actions have been recommended to address exposure concerns.
Dump:	False
Structure:	False
Lagoon:	False
Landfill:	False
Pond:	False
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	40:42:23.8 / 73:56:3.1
Dell:	False
Record Add:	2004-11-12 08:31:00
Record Upd:	2015-02-11 11:53:00
Updated By:	RJCOZZY
Own Op:	Owner
Sub Type:	06
Owner Name:	Luke Lichota
Owner Company:	Bogart Plaza LLC
Owner Address:	589 Johnson Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11237
Owner Country:	United States of America
Own Op:	Document Repository
Sub Type:	NNN
Owner Name:	Not reported
Owner Company:	Brooklyn Public Library
Owner Address:	Bushwick Branch
Owner Addr2:	340 Bushwick Avenue
Owner City,St,Zip:	Brooklyn, NY 11206
Owner Country:	United States of America
Own Op:	Applicant/Requestor
Sub Type:	P03
Owner Name:	Luke Lichota
Owner Company:	Bogart Plaza LLC
Owner Address:	589 Johnson Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11237
Owner Country:	United States of America
HW Code:	C224102
Waste Type:	ACETONE
Waste Quantity:	UNKNOWN

353 MCKIBBIN STREET (Continued) **S106704102**

Waste Code:	Not reported
HW Code:	C224102
Waste Type:	MERCURY
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	METHYLENE CHLORIDE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	TOLUENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	BENZO(B)FLUORANTHENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	XYLENE (MIXED)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	1,1,2 TCA
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	COPPER
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	ZINC
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	BENZO(A)PYRENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	DIBENZ[A,H]ANTHRACENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	TRICHLOROETHENE (TCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	1,1,2-TRICHLORETHYLENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	1,1,2-TRICHLORETHYLENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	1,1,2-TCA
Waste Quantity:	UNKNOWN
Waste Code:	Not reported

353 MCKIBBIN STREET (Continued) **S106704102**

HW Code: C224102
Waste Type: ETHYLBENZENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: BENZ(A)ANTHRACENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: W2-1054-05-03
Cross Ref Type Code: 23
Cross Ref Type: Agreement/Consent Order Number
Record Added Date: 2009-05-07 15:32:00
Record Updated: 2009-05-07 15:32:00
Updated By: MOBARRIE
Crossref ID: 2011000430604
Cross Ref Type Code: 25
Cross Ref Type: County Recording Identifier
Record Added Date: 2011-12-20 13:54:00
Record Updated: 2011-12-20 13:54:00
Updated By: MXYAU

INST CONTROL:
Name: 353 MCKIBBIN STREET
Address: 353 MCKIBBIN STREET
City,State,Zip: BROOKLYN, NY 11206
Site Code: 333585
Control Name: Site Management Plan
HW Code: C224102
Control Code: 32
Control Type: INST
Dt record added: 12/21/2011
Dt rec updated: 03/26/2019
Updated By: SNBOLLER
Site Code: 333585
Site Description: Location: The Site is situated on an approximately one-acre parcel bounded by Boerum Street and commercial properties to the north; by Bogart Street and commercial properties to the east; by McKibbin Street and a New York City Park and residential property to the south; and by a concrete facility adjacent and to the west. It is identified as Block 3083 and Lots 16 and 30 on the Kings County Tax Map. Current Uses/Zoning: The Site, which is currently vacant, is located in an industrial area of Kings County (Brooklyn) and is zoned MI-2 (Manufacturing District). The surrounding parcels are primarily industrial and manufacturing, with some residential properties nearby. Historical Uses: The Site was undeveloped land prior to the early 1900 s. F.H. Kalfleisch Chemical Works occupied a portion of the Site starting around 1907. Between 1951 and 1990, the Site hosted lacquer spraying operations. The Site assumed various configurations with portions of the site being used for different purpose between 1954 through 1994. The Site became vacant and undeveloped since 1994. Geology: The Site is located in the Atlantic Coastal Plain Physiographic Province. Bedrock beneath the Site consists of Pre-Cambrian Age crystalline metamorphic and igneous rock. No bedrock outcrops exist at the Site. Depth to bedrock at the Site is unknown, but is likely greater than 200 feet below ground surface (bgs). Surficial materials have been mapped as Pleistocene Age deposits of the Upper Glacial Aquifer, Gardiners Clay and Jameco Formation. Soils

353 MCKIBBIN STREET (Continued) **S106704102**

mantling the Site have been identified as Urban Fill. Urban fill consists of construction debris, rock, and ash. Based on information obtained from environmental borings, the Site is underlain by approximately 7 feet of urban fill. Glacial deposits underlie the urban fill and consist predominately of varying percentages of silt, sand and gravel. Hydrogeology: Shallow ground water is present in the fill material and/or the glacial deposits present beneath the Site. Depth to ground water is approximately 9 feet to 15 feet bgs. The predominant ground water table flow is north-northwest. The deep ground water flow is to the north.

Env Problem: Nature and Extent of Contamination: Prior to Remediation: Soil - Concentrations of regulated compounds that exceed RSCOs were observed at varying degrees in subsurface soil samples collected across the Site and along the off-Site perimeter. VOC concentrations greater than TAGM #4046 RSCOs are present predominately in the areas identified as Hotspot #1 and Hotspot #2. The extent of SVOCs detected at concentrations that exceed the individual TAGM #4046 RSCOs in subsurface soils is widespread across the Site and off-Site locations and predominately located in the urban fill deposits. Groundwater - VOCs were detected at concentrations that exceed TOGS in five of ten ground water samples collected from the shallow overburden aquifer, and each of the three sample collected from the deep portion of the overburden aquifer. Hydraulically upgradient monitoring well MW-9 did not exhibit VOC detections above TOGS. On the Site s northern property boundary, MW-6 and MW-7 represents hydraulically downgradient monitoring wells, and VOCs were not detected above TOGS in ground water samples collected from these downgradient wells. The ground water sample collected from monitoring well MW-12 contained the greatest number of VOCs detected above TOGS and the highest concentrations of VOCs. The location of MW-12 is near and hydraulically cross gradient of Hotspot #1 where shallow subsurface soil samples exhibited TCE concentrations three orders of magnitude above TAGM #4046 RSCOs. Trimethylbenzene detected at concentrations above the TOGS values of 5 ug/l is limited to shallow ground water collected from Monitoring Wells MW-3 and MW-5. The location of Monitoring Well MW-5 is near the boundary of Hotspot #2. Soil Gas - Soil gas samples were collected at temporary sample locations SG-1 through SG-4 and permanent sample locations SV-1 through SV-4 to characterize soil gas within the boundary of the Site and along the perimeter of the Site and to evaluate potential effects of soil gas on indoor air. Table 5 presents the soil gas analytical results. All soil gas samples analyzed exhibit detectible concentrations of VOCs. The soil gas samples exhibiting the highest concentration of chlorinated hydrocarbons were collected from Soil-gas Probe SV-4. Soil-gas Probe SV-4 is located hydraulically cross gradient of the Site and groundwater samples and subsurface soil samples collected from Monitoring Well MW-9 (located adjacent to SV-4) exhibited no VOCs at concentrations above screening criteria. Therefore, it is unlikely that the concentrations of chlorinated hydrocarbons detected in soil gas samples collected from SV-4 are the result of volatilization of VOCs from a local on-Site groundwater source. Subsurface soil above the water table in Hotspot # 2 and/or off-Site impacts are potential sources of chlorinated hydrocarbons in off-Site soil gas. Post-Remediation: Remediation at the site is complete. Prior to remediation, the primary contaminants of concern were volatile and semi-volatile organic compounds in soil, trichloroethene and trimethylbenzene in groundwater and chlorinated VOCs in soil

353 MCKIBBIN STREET (Continued) **S106704102**

vapor.
Health Problem: People are not drinking contaminated groundwater because the area is served by a public water supply not affected by the site. Since some contaminated soils remain at the site below concrete or clean backfill, people are not expected to come into contact with contaminated soils unless they dig below surface materials. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Actions have been taken on-site to address the potential for soil vapor intrusion to occur. Environmental sampling indicates that off-site soil vapor intrusion is a potential exposure pathway and actions have been recommended to address exposure concerns.
Dump: False
Structure: False
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: 40:42:23.8 / 73:56:3.1
Dell: False
Record Add: 2004-11-12 08:31:00
Record Upd: 2015-02-11 11:53:00
Updated By: RJCOZZY
Own Op: Owner
Sub Type: 06
Owner Name: Luke Lichota
Owner Company: Bogart Plaza LLC
Owner Address: 589 Johnson Avenue
Owner Addr2: Not reported
Owner City,St,Zip: Brooklyn, NY 11237
Owner Country: United States of America
Own Op: Document Repository
Sub Type: NNN
Owner Name: Not reported
Owner Company: Brooklyn Public Library
Owner Address: Bushwick Branch
Owner Addr2: 340 Bushwick Avenue
Owner City,St,Zip: Brooklyn, NY 11206
Owner Country: United States of America
Own Op: Applicant/Requestor
Sub Type: P03
Owner Name: Luke Lichota
Owner Company: Bogart Plaza LLC
Owner Address: 589 Johnson Avenue
Owner Addr2: Not reported
Owner City,St,Zip: Brooklyn, NY 11237
Owner Country: United States of America
HW Code: C224102
Waste Type: ACETONE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: MERCURY

353 MCKIBBIN STREET (Continued) **S106704102**

Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: METHYLENE CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: TOLUENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: BENZO(B)FLUORANTHENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: XYLENE (MIXED)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2 TCA
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: COPPER
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: ZINC
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: BENZO(A)PYRENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: DIBENZ[A,H]ANTHRACENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: TRICHLOROETHENE (TCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2-TRICHLORETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2-TRICHLORETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2-TCA
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: ETHYLBENZENE
Waste Quantity: UNKNOWN

353 MCKIBBIN STREET (Continued) **S106704102**

Waste Code: Not reported
HW Code: C224102
Waste Type: BENZ(A)ANTHRACENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: W2-1054-05-03
Cross Ref Type Code: 23
Cross Ref Type: Agreement/Consent Order Number
Record Added Date: 2009-05-07 15:32:00
Record Updated: 2009-05-07 15:32:00
Updated By: MOBARRIE
Crossref ID: 2011000430604
Cross Ref Type Code: 25
Cross Ref Type: County Recording Identifier
Record Added Date: 2011-12-20 13:54:00
Record Updated: 2011-12-20 13:54:00
Updated By: MXYAU

Name: 353 MCKIBBIN STREET
Address: 353 MCKIBBIN STREET
City,State,Zip: BROOKLYN, NY 11206
Site Code: 333585
Control Name: O&M Plan
HW Code: C224102
Control Code: 33
Control Type: INST
Dt record added: 12/21/2011
Dt rec updated: 03/26/2019
Updated By: SNBOLLER
Site Code: 333585
Site Description: Location: The Site is situated on an approximately one-acre parcel bounded by Boerum Street and commercial properties to the north; by Bogart Street and commercial properties to the east; by McKibbin Street and a New York City Park and residential property to the south; and by a concrete facility adjacent and to the west. It is identified as Block 3083 and Lots 16 and 30 on the Kings County Tax Map. Current Uses/Zoning: The Site, which is currently vacant, is located in an industrial area of Kings County (Brooklyn) and is zoned MI-2 (Manufacturing District). The surrounding parcels are primarily industrial and manufacturing, with some residential properties nearby. Historical Uses: The Site was undeveloped land prior to the early 1900 s. F.H. Kalfleisch Chemical Works occupied a portion of the Site starting around 1907. Between 1951 and 1990, the Site hosted lacquer spraying operations. The Site assumed various configurations with portions of the site being used for different purpose between 1954 through 1994. The Site became vacant and undeveloped since 1994. Geology: The Site is located in the Atlantic Coastal Plain Physiographic Province. Bedrock beneath the Site consists of Pre-Cambrian Age crystalline metamorphic and igneous rock. No bedrock outcrops exist at the Site. Depth to bedrock at the Site is unknown, but is likely greater than 200 feet below ground surface (bgs). Surficial materials have been mapped as Pleistocene Age deposits of the Upper Glacial Aquifer, Gardiners Clay and Jameco Formation. Soils mantling the Site have been identified as Urban Fill. Urban fill consists of construction debris, rock, and ash. Based on information obtained from environmental borings, the Site is underlain by approximately 7 feet of urban fill. Glacial deposits underlie the

353 MCKIBBIN STREET (Continued) **S106704102**

urban fill and consist predominately of varying percentages of silt, sand and gravel. Hydrogeology: Shallow ground water is present in the fill material and/or the glacial deposits present beneath the Site. Depth to ground water is approximately 9 feet to 15 feet bgs. The predominant ground water table flow is north-northwest. The deep ground water flow is to the north.

Env Problem: Nature and Extent of Contamination: Prior to Remediation: Soil - Concentrations of regulated compounds that exceed RSCOs were observed at varying degrees in subsurface soil samples collected across the Site and along the off-Site perimeter. VOC concentrations greater than TAGM #4046 RSCOs are present predominately in the areas identified as Hotspot #1 and Hotspot #2. The extent of SVOCs detected at concentrations that exceed the individual TAGM #4046 RSCOs in subsurface soils is widespread across the Site and off-Site locations and predominately located in the urban fill deposits. Groundwater - VOCs were detected at concentrations that exceed TOGS in five of ten ground water samples collected from the shallow overburden aquifer, and each of the three sample collected from the deep portion of the overburden aquifer. Hydraulically upgradient monitoring well MW-9 did not exhibit VOC detections above TOGS. On the Site s northern property boundary, MW-6 and MW-7 represents hydraulically downgradient monitoring wells, and VOCs were not detected above TOGS in ground water samples collected from these downgradient wells. The ground water sample collected from monitoring well MW-12 contained the greatest number of VOCs detected above TOGS and the highest concentrations of VOCs. The location of MW-12 is near and hydraulically cross gradient of Hotspot #1 where shallow subsurface soil samples exhibited TCE concentrations three orders of magnitude above TAGM #4046 RSCOs. Trimethylbenzene detected at concentrations above the TOGS values of 5 ug/l is limited to shallow ground water collected from Monitoring Wells MW-3 and MW-5. The location of Monitoring Well MW-5 is near the boundary of Hotspot #2. Soil Gas - Soil gas samples were collected at temporary sample locations SG-1 through SG-4 and permanent sample locations SV-1 through SV-4 to characterize soil gas within the boundary of the Site and along the perimeter of the Site and to evaluate potential effects of soil gas on indoor air. Table 5 presents the soil gas analytical results. All soil gas samples analyzed exhibit detectible concentrations of VOCs. The soil gas samples exhibiting the highest concentration of chlorinated hydrocarbons were collected from Soil-gas Probe SV-4. Soil-gas Probe SV-4 is located hydraulically cross gradient of the Site and groundwater samples and subsurface soil samples collected from Monitoring Well MW-9 (located adjacent to SV-4) exhibited no VOCs at concentrations above screening criteria. Therefore, it is unlikely that the concentrations of chlorinated hydrocarbons detected in soil gas samples collected from SV-4 are the result of volatilization of VOCs from a local on-Site groundwater source. Subsurface soil above the water table in Hotspot # 2 and/or off-Site impacts are potential sources of chlorinated hydrocarbons in off-Site soil gas. Post-Remediation: Remediation at the site is complete. Prior to remediation, the primary contaminants of concern were volatile and semi-volatile organic compounds in soil, trichloroethene and trimethylbenzene in groundwater and chlorinated VOCs in soil vapor.

Health Problem: People are not drinking contaminated groundwater because the area is served by a public water supply not affected by the site. Since some contaminated soils remain at the site below concrete or clean

353 MCKIBBIN STREET (Continued) **S106704102**

backfill, people are not expected to come into contact with contaminated soils unless they dig below surface materials. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Actions have been taken on-site to address the potential for soil vapor intrusion to occur. Environmental sampling indicates that off-site soil vapor intrusion is a potential exposure pathway and actions have been recommended to address exposure concerns.

Dump: False
Structure: False
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: 40:42:23.8 / 73:56:3.1
Dell: False
Record Add: 2004-11-12 08:31:00
Record Upd: 2015-02-11 11:53:00
Updated By: RJCOZZY
Own Op: Owner
Sub Type: 06
Owner Name: Luke Lichota
Owner Company: Bogart Plaza LLC
Owner Address: 589 Johnson Avenue
Owner Addr2: Not reported
Owner City,St,Zip: Brooklyn, NY 11237
Owner Country: United States of America
Own Op: Document Repository
Sub Type: NNN
Owner Name: Not reported
Owner Company: Brooklyn Public Library
Owner Address: Bushwick Branch
Owner Addr2: 340 Bushwick Avenue
Owner City,St,Zip: Brooklyn, NY 11206
Owner Country: United States of America
Own Op: Applicant/Requestor
Sub Type: P03
Owner Name: Luke Lichota
Owner Company: Bogart Plaza LLC
Owner Address: 589 Johnson Avenue
Owner Addr2: Not reported
Owner City,St,Zip: Brooklyn, NY 11237
Owner Country: United States of America
HW Code: C224102
Waste Type: ACETONE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: MERCURY
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: METHYLENE CHLORIDE

353 MCKIBBIN STREET (Continued) **S106704102**

Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: TOLUENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: BENZO(B)FLUORANTHENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: XYLENE (MIXED)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2 TCA
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: COPPER
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: ZINC
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: BENZO(A)PYRENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: DIBENZ[A,H]ANTHRACENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: TRICHLOROETHENE (TCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2-TRICHLORETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2-TRICHLORETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2-TCA
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: ETHYLBENZENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: BENZ(A)ANTHRACENE
Waste Quantity: UNKNOWN

353 MCKIBBIN STREET (Continued) **S106704102**

Waste Code: Not reported
Crossref ID: W2-1054-05-03
Cross Ref Type Code: 23
Cross Ref Type: Agreement/Consent Order Number
Record Added Date: 2009-05-07 15:32:00
Record Updated: 2009-05-07 15:32:00
Updated By: MOBARRIE
Crossref ID: 2011000430604
Cross Ref Type Code: 25
Cross Ref Type: County Recording Identifier
Record Added Date: 2011-12-20 13:54:00
Record Updated: 2011-12-20 13:54:00
Updated By: MXYAU

Name: 353 MCKIBBIN STREET
Address: 353 MCKIBBIN STREET
City,State,Zip: BROOKLYN, NY 11206
Site Code: 333585
Control Name: Monitoring Plan
HW Code: C224102
Control Code: 31
Control Type: INST
Dt record added: 12/21/2011
Dt rec updated: 03/26/2019
Updated By: SNBOLLER
Site Code: 333585
Site Description: Location: The Site is situated on an approximately one-acre parcel bounded by Boerum Street and commercial properties to the north; by Bogart Street and commercial properties to the east; by McKibbin Street and a New York City Park and residential property to the south; and by a concrete facility adjacent and to the west. It is identified as Block 3083 and Lots 16 and 30 on the Kings County Tax Map. Current Uses/Zoning: The Site, which is currently vacant, is located in an industrial area of Kings County (Brooklyn) and is zoned MI-2 (Manufacturing District). The surrounding parcels are primarily industrial and manufacturing, with some residential properties nearby. Historical Uses: The Site was undeveloped land prior to the early 1900 s. F.H. Kalfleisch Chemical Works occupied a portion of the Site starting around 1907. Between 1951 and 1990, the Site hosted lacquer spraying operations. The Site assumed various configurations with portions of the site being used for different purpose between 1954 through 1994. The Site became vacant and undeveloped since 1994. Geology: The Site is located in the Atlantic Coastal Plain Physiographic Province. Bedrock beneath the Site consists of Pre-Cambrian Age crystalline metamorphic and igneous rock. No bedrock outcrops exist at the Site. Depth to bedrock at the Site is unknown, but is likely greater than 200 feet below ground surface (bgs). Surficial materials have been mapped as Pleistocene Age deposits of the Upper Glacial Aquifer, Gardiners Clay and Jameco Formation. Soils mantling the Site have been identified as Urban Fill. Urban fill consists of construction debris, rock, and ash. Based on information obtained from environmental borings, the Site is underlain by approximately 7 feet of urban fill. Glacial deposits underlie the urban fill and consist predominately of varying percentages of silt, sand and gravel. Hydrogeology: Shallow ground water is present in the fill material and/or the glacial deposits present beneath the Site. Depth to ground water is approximately 9 feet to 15 feet bgs. The

353 MCKIBBIN STREET (Continued) **S106704102**

predominant ground water table flow is north-northwest. The deep ground water flow is to the north.

Env Problem: Nature and Extent of Contamination: Prior to Remediation: Soil - Concentrations of regulated compounds that exceed RSCOs were observed at varying degrees in subsurface soil samples collected across the Site and along the off-Site perimeter. VOC concentrations greater than TAGM #4046 RSCOs are present predominately in the areas identified as Hotspot #1 and Hotspot #2. The extent of SVOCs detected at concentrations that exceed the individual TAGM #4046 RSCOs in subsurface soils is widespread across the Site and off-Site locations and predominately located in the urban fill deposits. Groundwater - VOCs were detected at concentrations that exceed TOGS in five of ten ground water samples collected from the shallow overburden aquifer, and each of the three sample collected from the deep portion of the overburden aquifer. Hydraulically upgradient monitoring well MW-9 did not exhibit VOC detections above TOGS. On the Site s northern property boundary, MW-6 and MW-7 represents hydraulically downgradient monitoring wells, and VOCs were not detected above TOGS in ground water samples collected from these downgradient wells. The ground water sample collected from monitoring well MW-12 contained the greatest number of VOCs detected above TOGS and the highest concentrations of VOCs. The location of MW-12 is near and hydraulically cross gradient of Hotspot #1 where shallow subsurface soil samples exhibited TCE concentrations three orders of magnitude above TAGM #4046 RSCOs. Trimethylbenzene detected at concentrations above the TOGS values of 5 ug/l is limited to shallow ground water collected from Monitoring Wells MW-3 and MW-5. The location of Monitoring Well MW-5 is near the boundary of Hotspot #2. Soil Gas - Soil gas samples were collected at temporary sample locations SG-1 through SG-4 and permanent sample locations SV-1 through SV-4 to characterize soil gas within the boundary of the Site and along the perimeter of the Site and to evaluate potential effects of soil gas on indoor air. Table 5 presents the soil gas analytical results. All soil gas samples analyzed exhibit detectible concentrations of VOCs. The soil gas samples exhibiting the highest concentration of chlorinated hydrocarbons were collected from Soil-gas Probe SV-4. Soil-gas Probe SV-4 is located hydraulically cross gradient of the Site and groundwater samples and subsurface soil samples collected from Monitoring Well MW-9 (located adjacent to SV-4) exhibited no VOCs at concentrations above screening criteria. Therefore, it is unlikely that the concentrations of chlorinated hydrocarbons detected in soil gas samples collected from SV-4 are the result of volatilization of VOCs from a local on-Site groundwater source. Subsurface soil above the water table in Hotspot # 2 and/or off-Site impacts are potential sources of chlorinated hydrocarbons in off-Site soil gas. Post-Remediation: Remediation at the site is complete. Prior to remediation, the primary contaminants of concern were volatile and semi-volatile organic compounds in soil, trichloroethene and trimethylbenzene in groundwater and chlorinated VOCs in soil vapor.

Health Problem: People are not drinking contaminated groundwater because the area is served by a public water supply not affected by the site. Since some contaminated soils remain at the site below concrete or clean backfill, people are not expected to come into contact with contaminated soils unless they dig below surface materials. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying

353 MCKIBBIN STREET (Continued) **S106704102**

buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Actions have been taken on-site to address the potential for soil vapor intrusion to occur. Environmental sampling indicates that off-site soil vapor intrusion is a potential exposure pathway and actions have been recommended to address exposure concerns.

Dump: False
Structure: False
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: 40:42:23.8 / 73:56:3.1
Dell: False
Record Add: 2004-11-12 08:31:00
Record Upd: 2015-02-11 11:53:00
Updated By: RJCOZZY
Own Op: Owner
Sub Type: 06
Owner Name: Luke Lichota
Owner Company: Bogart Plaza LLC
Owner Address: 589 Johnson Avenue
Owner Addr2: Not reported
Owner City,St,Zip: Brooklyn, NY 11237
Owner Country: United States of America
Own Op: Document Repository
Sub Type: NNN
Owner Name: Not reported
Owner Company: Brooklyn Public Library
Owner Address: Bushwick Branch
Owner Addr2: 340 Bushwick Avenue
Owner City,St,Zip: Brooklyn, NY 11206
Owner Country: United States of America
Own Op: Applicant/Requestor
Sub Type: P03
Owner Name: Luke Lichota
Owner Company: Bogart Plaza LLC
Owner Address: 589 Johnson Avenue
Owner Addr2: Not reported
Owner City,St,Zip: Brooklyn, NY 11237
Owner Country: United States of America
HW Code: C224102
Waste Type: ACETONE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: MERCURY
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: METHYLENE CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: TOLUENE

353 MCKIBBIN STREET (Continued) **S106704102**

Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: BENZO(B)FLUORANTHENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: XYLENE (MIXED)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2 TCA
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: COPPER
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: ZINC
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: BENZO(A)PYRENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: DIBENZ[A,H]ANTHRACENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: TRICHLOROETHENE (TCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2-TRICHLORETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2-TRICHLORETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2-TCA
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: ETHYLBENZENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: BENZ(A)ANTHRACENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: W2-1054-05-03
Cross Ref Type Code: 23
Cross Ref Type: Agreement/Consent Order Number

353 MCKIBBIN STREET (Continued) **S106704102**

Record Added Date: 2009-05-07 15:32:00
Record Updated: 2009-05-07 15:32:00
Updated By: MOBARRIE
Crossref ID: 2011000430604
Cross Ref Type Code: 25
Cross Ref Type: County Recording Identifier
Record Added Date: 2011-12-20 13:54:00
Record Updated: 2011-12-20 13:54:00
Updated By: MXYAU

Name: 353 MCKIBBIN STREET
Address: 353 MCKIBBIN STREET
City,State,Zip: BROOKLYN, NY 11206
Site Code: 333585
Control Name: Environmental Easement
HW Code: C224102
Control Code: J
Control Type: INST
Dt record added: 12/21/2011
Dt rec updated: 03/26/2019
Updated By: SNBOLLER
Site Code: 333585
Site Description: Location: The Site is situated on an approximately one-acre parcel bounded by Boerum Street and commercial properties to the north; by Bogart Street and commercial properties to the east; by McKibbin Street and a New York City Park and residential property to the south; and by a concrete facility adjacent and to the west. It is identified as Block 3083 and Lots 16 and 30 on the Kings County Tax Map. Current Uses/Zoning: The Site, which is currently vacant, is located in an industrial area of Kings County (Brooklyn) and is zoned MI-2 (Manufacturing District). The surrounding parcels are primarily industrial and manufacturing, with some residential properties nearby. Historical Uses: The Site was undeveloped land prior to the early 1900 s. F.H. Kalfleisch Chemical Works occupied a portion of the Site starting around 1907. Between 1951 and 1990, the Site hosted lacquer spraying operations. The Site assumed various configurations with portions of the site being used for different purpose between 1954 through 1994. The Site became vacant and undeveloped since 1994. Geology: The Site is located in the Atlantic Coastal Plain Physiographic Province. Bedrock beneath the Site consists of Pre-Cambrian Age crystalline metamorphic and igneous rock. No bedrock outcrops exist at the Site. Depth to bedrock at the Site is unknown, but is likely greater than 200 feet below ground surface (bgs). Surficial materials have been mapped as Pleistocene Age deposits of the Upper Glacial Aquifer, Gardiners Clay and Jameco Formation. Soils mantling the Site have been identified as Urban Fill. Urban fill consists of construction debris, rock, and ash. Based on information obtained from environmental borings, the Site is underlain by approximately 7 feet of urban fill. Glacial deposits underlie the urban fill and consist predominately of varying percentages of silt, sand and gravel. Hydrogeology: Shallow ground water is present in the fill material and/or the glacial deposits present beneath the Site. Depth to ground water is approximately 9 feet to 15 feet bgs. The predominant ground water table flow is north-northwest. The deep ground water flow is to the north.
Env Problem: Nature and Extent of Contamination: Prior to Remediation: Soil - Concentrations of regulated compounds that exceed RSCOs were observed

353 MCKIBBIN STREET (Continued) **S106704102**

at varying degrees in subsurface soil samples collected across the Site and along the off-Site perimeter. VOC concentrations greater than TAGM #4046 RSCOs are present predominately in the areas identified as Hotspot #1 and Hotspot #2. The extent of SVOCs detected at concentrations that exceed the individual TAGM #4046 RSCOs in subsurface soils is widespread across the Site and off-Site locations and predominately located in the urban fill deposits. Groundwater - VOCs were detected at concentrations that exceed TOGS in five of ten ground water samples collected from the shallow overburden aquifer, and each of the three sample collected from the deep portion of the overburden aquifer. Hydraulically upgradient monitoring well MW-9 did not exhibit VOC detections above TOGS. On the Site s northern property boundary, MW-6 and MW-7 represents hydraulically downgradient monitoring wells, and VOCs were not detected above TOGS in ground water samples collected from these downgradient wells. The ground water sample collected from monitoring well MW-12 contained the greatest number of VOCs detected above TOGS and the highest concentrations of VOCs. The location of MW-12 is near and hydraulically cross gradient of Hotspot #1 where shallow subsurface soil samples exhibited TCE concentrations three orders of magnitude above TAGM #4046 RSCOs. Trimethylbenzene detected at concentrations above the TOGS values of 5 ug/l is limited to shallow ground water collected from Monitoring Wells MW-3 and MW-5. The location of Monitoring Well MW-5 is near the boundary of Hotspot #2. Soil Gas - Soil gas samples were collected at temporary sample locations SG-1 through SG-4 and permanent sample locations SV-1 through SV-4 to characterize soil gas within the boundary of the Site and along the perimeter of the Site and to evaluate potential effects of soil gas on indoor air. Table 5 presents the soil gas analytical results. All soil gas samples analyzed exhibit detectible concentrations of VOCs. The soil gas samples exhibiting the highest concentration of chlorinated hydrocarbons were collected from Soil-gas Probe SV-4. Soil-gas Probe SV-4 is located hydraulically cross gradient of the Site and groundwater samples and subsurface soil samples collected from Monitoring Well MW-9 (located adjacent to SV-4) exhibited no VOCs at concentrations above screening criteria. Therefore, it is unlikely that the concentrations of chlorinated hydrocarbons detected in soil gas samples collected from SV-4 are the result of volatilization of VOCs from a local on-Site groundwater source. Subsurface soil above the water table in Hotspot # 2 and/or off-Site impacts are potential sources of chlorinated hydrocarbons in off-Site soil gas. Post-Remediation: Remediation at the site is complete. Prior to remediation, the primary contaminants of concern were volatile and semi-volatile organic compounds in soil, trichloroethene and trimethylbenzene in groundwater and chlorinated VOCs in soil vapor.

Health Problem: People are not drinking contaminated groundwater because the area is served by a public water supply not affected by the site. Since some contaminated soils remain at the site below concrete or clean backfill, people are not expected to come into contact with contaminated soils unless they dig below surface materials. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Actions have been taken on-site to address the potential for soil

353 MCKIBBIN STREET (Continued) **S106704102**

vapor intrusion to occur. Environmental sampling indicates that off-site soil vapor intrusion is a potential exposure pathway and actions have been recommended to address exposure concerns.

Dump: False
Structure: False
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: 40:42:23.8 / 73:56:3.1
Dell: False
Record Add: 2004-11-12 08:31:00
Record Upd: 2015-02-11 11:53:00
Updated By: RJCOZZY
Own Op: Owner
Sub Type: 06
Owner Name: Luke Lichota
Owner Company: Bogart Plaza LLC
Owner Address: 589 Johnson Avenue
Owner Addr2: Not reported
Owner City,St,Zip: Brooklyn, NY 11237
Owner Country: United States of America
Own Op: Document Repository
Sub Type: NNN
Owner Name: Not reported
Owner Company: Brooklyn Public Library
Owner Address: Bushwick Branch
Owner Addr2: 340 Bushwick Avenue
Owner City,St,Zip: Brooklyn, NY 11206
Owner Country: United States of America
Own Op: Applicant/Requestor
Sub Type: P03
Owner Name: Luke Lichota
Owner Company: Bogart Plaza LLC
Owner Address: 589 Johnson Avenue
Owner Addr2: Not reported
Owner City,St,Zip: Brooklyn, NY 11237
Owner Country: United States of America
HW Code: C224102
Waste Type: ACETONE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: MERCURY
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: METHYLENE CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: TOLUENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: BENZO(B)FLUORANTHENE

353 MCKIBBIN STREET (Continued) **S106704102**

Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: XYLENE (MIXED)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2 TCA
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: COPPER
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: ZINC
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: BENZO(A)PYRENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: DIBENZ[A,H]ANTHRACENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: TRICHLOROETHENE (TCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2-TRICHLORETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2-TRICHLORETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2-TCA
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: ETHYLBENZENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: BENZ(A)ANTHRACENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: W2-1054-05-03
Cross Ref Type Code: 23
Cross Ref Type: Agreement/Consent Order Number
Record Added Date: 2009-05-07 15:32:00
Record Updated: 2009-05-07 15:32:00
Updated By: MOBARRIE
Crossref ID: 2011000430604

353 MCKIBBIN STREET (Continued) **S106704102**

Cross Ref Type Code: 25
Cross Ref Type: County Recording Identifier
Record Added Date: 2011-12-20 13:54:00
Record Updated: 2011-12-20 13:54:00
Updated By: MXYAU

Name: 353 MCKIBBIN STREET
Address: 353 MCKIBBIN STREET
City,State,Zip: BROOKLYN, NY 11206
Site Code: 333585
Control Name: Ground Water Use Restriction
HW Code: C224102
Control Code: 08
Control Type: INST
Dt record added: 12/21/2011
Dt rec updated: 03/26/2019
Updated By: SNBOLLER
Site Code: 333585
Site Description: Location: The Site is situated on an approximately one-acre parcel bounded by Boerum Street and commercial properties to the north; by Bogart Street and commercial properties to the east; by McKibbin Street and a New York City Park and residential property to the south; and by a concrete facility adjacent and to the west. It is identified as Block 3083 and Lots 16 and 30 on the Kings County Tax Map. Current Uses/Zoning: The Site, which is currently vacant, is located in an industrial area of Kings County (Brooklyn) and is zoned MI-2 (Manufacturing District). The surrounding parcels are primarily industrial and manufacturing, with some residential properties nearby. Historical Uses: The Site was undeveloped land prior to the early 1900 s. F.H. Kalfleisch Chemical Works occupied a portion of the Site starting around 1907. Between 1951 and 1990, the Site hosted lacquer spraying operations. The Site assumed various configurations with portions of the site being used for different purpose between 1954 through 1994. The Site became vacant and undeveloped since 1994. Geology: The Site is located in the Atlantic Coastal Plain Physiographic Province. Bedrock beneath the Site consists of Pre-Cambrian Age crystalline metamorphic and igneous rock. No bedrock outcrops exist at the Site. Depth to bedrock at the Site is unknown, but is likely greater than 200 feet below ground surface (bgs). Surficial materials have been mapped as Pleistocene Age deposits of the Upper Glacial Aquifer, Gardiners Clay and Jameco Formation. Soils mantling the Site have been identified as Urban Fill. Urban fill consists of construction debris, rock, and ash. Based on information obtained from environmental borings, the Site is underlain by approximately 7 feet of urban fill. Glacial deposits underlie the urban fill and consist predominately of varying percentages of silt, sand and gravel. Hydrogeology: Shallow ground water is present in the fill material and/or the glacial deposits present beneath the Site. Depth to ground water is approximately 9 feet to 15 feet bgs. The predominant ground water table flow is north-northwest. The deep ground water flow is to the north.
Env Problem: Nature and Extent of Contamination: Prior to Remediation: Soil - Concentrations of regulated compounds that exceed RSCOs were observed at varying degrees in subsurface soil samples collected across the Site and along the off-Site perimeter. VOC concentrations greater than TAGM #4046 RSCOs are present predominately in the areas identified as Hotspot #1 and Hotspot #2. The extent of SVOCs detected

353 MCKIBBIN STREET (Continued) **S106704102**

at concentrations that exceed the individual TAGM #4046 RSCOs in subsurface soils is widespread across the Site and off-Site locations and predominately located in the urban fill deposits. Groundwater - VOCs were detected at concentrations that exceed TOGS in five of ten ground water samples collected from the shallow overburden aquifer, and each of the three sample collected from the deep portion of the overburden aquifer. Hydraulically upgradient monitoring well MW-9 did not exhibit VOC detections above TOGS. On the Site s northern property boundary, MW-6 and MW-7 represents hydraulically downgradient monitoring wells, and VOCs were not detected above TOGS in ground water samples collected from these downgradient wells. The ground water sample collected from monitoring well MW-12 contained the greatest number of VOCs detected above TOGS and the highest concentrations of VOCs. The location of MW-12 is near and hydraulically cross gradient of Hotspot #1 where shallow subsurface soil samples exhibited TCE concentrations three orders of magnitude above TAGM #4046 RSCOs. Trimethylbenzene detected at concentrations above the TOGS values of 5 ug/l is limited to shallow ground water collected from Monitoring Wells MW-3 and MW-5. The location of Monitoring Well MW-5 is near the boundary of Hotspot #2. Soil Gas - Soil gas samples were collected at temporary sample locations SG-1 through SG-4 and permanent sample locations SV-1 through SV-4 to characterize soil gas within the boundary of the Site and along the perimeter of the Site and to evaluate potential effects of soil gas on indoor air. Table 5 presents the soil gas analytical results. All soil gas samples analyzed exhibit detectible concentrations of VOCs. The soil gas samples exhibiting the highest concentration of chlorinated hydrocarbons were collected from Soil-gas Probe SV-4. Soil-gas Probe SV-4 is located hydraulically cross gradient of the Site and groundwater samples and subsurface soil samples collected from Monitoring Well MW-9 (located adjacent to SV-4) exhibited no VOCs at concentrations above screening criteria. Therefore, it is unlikely that the concentrations of chlorinated hydrocarbons detected in soil gas samples collected from SV-4 are the result of volatilization of VOCs from a local on-Site groundwater source. Subsurface soil above the water table in Hotspot # 2 and/or off-Site impacts are potential sources of chlorinated hydrocarbons in off-Site soil gas. Post-Remediation: Remediation at the site is complete. Prior to remediation, the primary contaminants of concern were volatile and semi-volatile organic compounds in soil, trichloroethene and trimethylbenzene in groundwater and chlorinated VOCs in soil vapor.

Health Problem: People are not drinking contaminated groundwater because the area is served by a public water supply not affected by the site. Since some contaminated soils remain at the site below concrete or clean backfill, people are not expected to come into contact with contaminated soils unless they dig below surface materials. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Actions have been taken on-site to address the potential for soil vapor intrusion to occur. Environmental sampling indicates that off-site soil vapor intrusion is a potential exposure pathway and actions have been recommended to address exposure concerns.

Dump: False

353 MCKIBBIN STREET (Continued) **S106704102**

Structure:	False
Lagoon:	False
Landfill:	False
Pond:	False
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	40:42:23.8 / 73:56:3.1
Dell:	False
Record Add:	2004-11-12 08:31:00
Record Upd:	2015-02-11 11:53:00
Updated By:	RJCOZZY
Own Op:	Owner
Sub Type:	06
Owner Name:	Luke Lichota
Owner Company:	Bogart Plaza LLC
Owner Address:	589 Johnson Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11237
Owner Country:	United States of America
Own Op:	Document Repository
Sub Type:	NNN
Owner Name:	Not reported
Owner Company:	Brooklyn Public Library
Owner Address:	Bushwick Branch
Owner Addr2:	340 Bushwick Avenue
Owner City,St,Zip:	Brooklyn, NY 11206
Owner Country:	United States of America
Own Op:	Applicant/Requestor
Sub Type:	P03
Owner Name:	Luke Lichota
Owner Company:	Bogart Plaza LLC
Owner Address:	589 Johnson Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11237
Owner Country:	United States of America
HW Code:	C224102
Waste Type:	ACETONE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	MERCURY
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	METHYLENE CHLORIDE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	TOLUENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	BENZO(B)FLUORANTHENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	XYLENE (MIXED)

353 MCKIBBIN STREET (Continued) **S106704102**

Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2 TCA
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: COPPER
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: ZINC
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: BENZO(A)PYRENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: DIBENZ[A,H]ANTHRACENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: TRICHLOROETHENE (TCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2-TRICHLORETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2-TRICHLORETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2-TCA
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: ETHYLBENZENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: BENZ(A)ANTHRACENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: W2-1054-05-03
Cross Ref Type Code: 23
Cross Ref Type: Agreement/Consent Order Number
Record Added Date: 2009-05-07 15:32:00
Record Updated: 2009-05-07 15:32:00
Updated By: MOBARRIE
Crossref ID: 2011000430604
Cross Ref Type Code: 25
Cross Ref Type: County Recording Identifier
Record Added Date: 2011-12-20 13:54:00
Record Updated: 2011-12-20 13:54:00

353 MCKIBBIN STREET (Continued) **S106704102**

Updated By: MXYAU

Name: 353 MCKIBBIN STREET
Address: 353 MCKIBBIN STREET
City,State,Zip: BROOKLYN, NY 11206
Site Code: 333585
Control Name: Soil Management Plan
HW Code: C224102
Control Code: 14
Control Type: INST
Dt record added: 12/21/2011
Dt rec updated: 03/26/2019
Updated By: SNBOLLER
Site Code: 333585
Site Description: Location: The Site is situated on an approximately one-acre parcel bounded by Boerum Street and commercial properties to the north; by Bogart Street and commercial properties to the east; by McKibbin Street and a New York City Park and residential property to the south; and by a concrete facility adjacent and to the west. It is identified as Block 3083 and Lots 16 and 30 on the Kings County Tax Map. Current Uses/Zoning: The Site, which is currently vacant, is located in an industrial area of Kings County (Brooklyn) and is zoned MI-2 (Manufacturing District). The surrounding parcels are primarily industrial and manufacturing, with some residential properties nearby. Historical Uses: The Site was undeveloped land prior to the early 1900 s. F.H. Kalfleisch Chemical Works occupied a portion of the Site starting around 1907. Between 1951 and 1990, the Site hosted lacquer spraying operations. The Site assumed various configurations with portions of the site being used for different purpose between 1954 through 1994. The Site became vacant and undeveloped since 1994. Geology: The Site is located in the Atlantic Coastal Plain Physiographic Province. Bedrock beneath the Site consists of Pre-Cambrian Age crystalline metamorphic and igneous rock. No bedrock outcrops exist at the Site. Depth to bedrock at the Site is unknown, but is likely greater than 200 feet below ground surface (bgs). Surficial materials have been mapped as Pleistocene Age deposits of the Upper Glacial Aquifer, Gardiners Clay and Jameco Formation. Soils mantling the Site have been identified as Urban Fill. Urban fill consists of construction debris, rock, and ash. Based on information obtained from environmental borings, the Site is underlain by approximately 7 feet of urban fill. Glacial deposits underlie the urban fill and consist predominately of varying percentages of silt, sand and gravel. Hydrogeology: Shallow ground water is present in the fill material and/or the glacial deposits present beneath the Site. Depth to ground water is approximately 9 feet to 15 feet bgs. The predominant ground water table flow is north-northwest. The deep ground water flow is to the north.
Env Problem: Nature and Extent of Contamination: Prior to Remediation: Soil - Concentrations of regulated compounds that exceed RSCOs were observed at varying degrees in subsurface soil samples collected across the Site and along the off-Site perimeter. VOC concentrations greater than TAGM #4046 RSCOs are present predominately in the areas identified as Hotspot #1 and Hotspot #2. The extent of SVOCs detected at concentrations that exceed the individual TAGM #4046 RSCOs in subsurface soils is widespread across the Site and off-Site locations and predominately located in the urban fill deposits. Groundwater - VOCs were detected at concentrations that exceed TOGS in five of ten

353 MCKIBBIN STREET (Continued) **S106704102**

ground water samples collected from the shallow overburden aquifer, and each of the three sample collected from the deep portion of the overburden aquifer. Hydraulically upgradient monitoring well MW-9 did not exhibit VOC detections above TOGS. On the Site s northern property boundary, MW-6 and MW-7 represents hydraulically downgradient monitoring wells, and VOCs were not detected above TOGS in ground water samples collected from these downgradient wells. The ground water sample collected from monitoring well MW-12 contained the greatest number of VOCs detected above TOGS and the highest concentrations of VOCs. The location of MW-12 is near and hydraulically cross gradient of Hotspot #1 where shallow subsurface soil samples exhibited TCE concentrations three orders of magnitude above TAGM #4046 RSCOs. Trimethylbenzene detected at concentrations above the TOGS values of 5 ug/l is limited to shallow ground water collected from Monitoring Wells MW-3 and MW-5. The location of Monitoring Well MW-5 is near the boundary of Hotspot #2. Soil Gas - Soil gas samples were collected at temporary sample locations SG-1 through SG-4 and permanent sample locations SV-1 through SV-4 to characterize soil gas within the boundary of the Site and along the perimeter of the Site and to evaluate potential effects of soil gas on indoor air. Table 5 presents the soil gas analytical results. All soil gas samples analyzed exhibit detectible concentrations of VOCs. The soil gas samples exhibiting the highest concentration of chlorinated hydrocarbons were collected from Soil-gas Probe SV-4. Soil-gas Probe SV-4 is located hydraulically cross gradient of the Site and groundwater samples and subsurface soil samples collected from Monitoring Well MW-9 (located adjacent to SV-4) exhibited no VOCs at concentrations above screening criteria. Therefore, it is unlikely that the concentrations of chlorinated hydrocarbons detected in soil gas samples collected from SV-4 are the result of volatilization of VOCs from a local on-Site groundwater source. Subsurface soil above the water table in Hotspot # 2 and/or off-Site impacts are potential sources of chlorinated hydrocarbons in off-Site soil gas. Post-Remediation: Remediation at the site is complete. Prior to remediation, the primary contaminants of concern were volatile and semi-volatile organic compounds in soil, trichloroethene and trimethylbenzene in groundwater and chlorinated VOCs in soil vapor.

Health Problem: People are not drinking contaminated groundwater because the area is served by a public water supply not affected by the site. Since some contaminated soils remain at the site below concrete or clean backfill, people are not expected to come into contact with contaminated soils unless they dig below surface materials. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Actions have been taken on-site to address the potential for soil vapor intrusion to occur. Environmental sampling indicates that off-site soil vapor intrusion is a potential exposure pathway and actions have been recommended to address exposure concerns.

Dump: False
Structure: False
Lagoon: False
Landfill: False
Pond: False

353 MCKIBBIN STREET (Continued) **S106704102**

Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	40:42:23.8 / 73:56:3.1
Dell:	False
Record Add:	2004-11-12 08:31:00
Record Upd:	2015-02-11 11:53:00
Updated By:	RJCOZZY
Own Op:	Owner
Sub Type:	06
Owner Name:	Luke Lichota
Owner Company:	Bogart Plaza LLC
Owner Address:	589 Johnson Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11237
Owner Country:	United States of America
Own Op:	Document Repository
Sub Type:	NNN
Owner Name:	Not reported
Owner Company:	Brooklyn Public Library
Owner Address:	Bushwick Branch
Owner Addr2:	340 Bushwick Avenue
Owner City,St,Zip:	Brooklyn, NY 11206
Owner Country:	United States of America
Own Op:	Applicant/Requestor
Sub Type:	P03
Owner Name:	Luke Lichota
Owner Company:	Bogart Plaza LLC
Owner Address:	589 Johnson Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11237
Owner Country:	United States of America
HW Code:	C224102
Waste Type:	ACETONE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	MERCURY
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	METHYLENE CHLORIDE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	TOLUENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	BENZO(B)FLUORANTHENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	XYLENE (MIXED)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	1,1,2 TCA

353 MCKIBBIN STREET (Continued) **S106704102**

Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: COPPER
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: ZINC
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: BENZO(A)PYRENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: DIBENZ[A,H]ANTHRACENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: TRICHLOROETHENE (TCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2-TRICHLORETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2-TRICHLORETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2-TCA
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: ETHYLBENZENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: BENZ(A)ANTHRACENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: W2-1054-05-03
Cross Ref Type Code: 23
Cross Ref Type: Agreement/Consent Order Number
Record Added Date: 2009-05-07 15:32:00
Record Updated: 2009-05-07 15:32:00
Updated By: MOBARRIE
Crossref ID: 2011000430604
Cross Ref Type Code: 25
Cross Ref Type: County Recording Identifier
Record Added Date: 2011-12-20 13:54:00
Record Updated: 2011-12-20 13:54:00
Updated By: MXYAU

Name: 353 MCKIBBIN STREET
Address: 353 MCKIBBIN STREET

353 MCKIBBIN STREET (Continued) **S106704102**

City,State,Zip: BROOKLYN, NY 11206
Site Code: 333585
Control Name: Landuse Restriction
HW Code: C224102
Control Code: 25
Control Type: INST
Dt record added: 12/21/2011
Dt rec updated: 03/26/2019
Updated By: SNBOLLER
Site Code: 333585
Site Description: Location: The Site is situated on an approximately one-acre parcel bounded by Boerum Street and commercial properties to the north; by Bogart Street and commercial properties to the east; by McKibbin Street and a New York City Park and residential property to the south; and by a concrete facility adjacent and to the west. It is identified as Block 3083 and Lots 16 and 30 on the Kings County Tax Map. Current Uses/Zoning: The Site, which is currently vacant, is located in an industrial area of Kings County (Brooklyn) and is zoned MI-2 (Manufacturing District). The surrounding parcels are primarily industrial and manufacturing, with some residential properties nearby. Historical Uses: The Site was undeveloped land prior to the early 1900 s. F.H. Kalfleisch Chemical Works occupied a portion of the Site starting around 1907. Between 1951 and 1990, the Site hosted lacquer spraying operations. The Site assumed various configurations with portions of the site being used for different purpose between 1954 through 1994. The Site became vacant and undeveloped since 1994. Geology: The Site is located in the Atlantic Coastal Plain Physiographic Province. Bedrock beneath the Site consists of Pre-Cambrian Age crystalline metamorphic and igneous rock. No bedrock outcrops exist at the Site. Depth to bedrock at the Site is unknown, but is likely greater than 200 feet below ground surface (bgs). Surficial materials have been mapped as Pleistocene Age deposits of the Upper Glacial Aquifer, Gardiners Clay and Jameco Formation. Soils mantling the Site have been identified as Urban Fill. Urban fill consists of construction debris, rock, and ash. Based on information obtained from environmental borings, the Site is underlain by approximately 7 feet of urban fill. Glacial deposits underlie the urban fill and consist predominately of varying percentages of silt, sand and gravel. Hydrogeology: Shallow ground water is present in the fill material and/or the glacial deposits present beneath the Site. Depth to ground water is approximately 9 feet to 15 feet bgs. The predominant ground water table flow is north-northwest. The deep ground water flow is to the north.
Env Problem: Nature and Extent of Contamination: Prior to Remediation: Soil - Concentrations of regulated compounds that exceed RSCOs were observed at varying degrees in subsurface soil samples collected across the Site and along the off-Site perimeter. VOC concentrations greater than TAGM #4046 RSCOs are present predominately in the areas identified as Hotspot #1 and Hotspot #2. The extent of SVOCs detected at concentrations that exceed the individual TAGM #4046 RSCOs in subsurface soils is widespread across the Site and off-Site locations and predominately located in the urban fill deposits. Groundwater - VOCs were detected at concentrations that exceed TOGS in five of ten ground water samples collected from the shallow overburden aquifer, and each of the three sample collected from the deep portion of the overburden aquifer. Hydraulically upgradient monitoring well MW-9 did not exhibit VOC detections above TOGS. On the Site s northern

353 MCKIBBIN STREET (Continued) **S106704102**

property boundary, MW-6 and MW-7 represents hydraulically downgradient monitoring wells, and VOCs were not detected above TOGS in ground water samples collected from these downgradient wells. The ground water sample collected from monitoring well MW-12 contained the greatest number of VOCs detected above TOGS and the highest concentrations of VOCs. The location of MW-12 is near and hydraulically cross gradient of Hotspot #1 where shallow subsurface soil samples exhibited TCE concentrations three orders of magnitude above TAGM #4046 RSCOs. Trimethylbenzene detected at concentrations above the TOGS values of 5 ug/l is limited to shallow ground water collected from Monitoring Wells MW-3 and MW-5. The location of Monitoring Well MW-5 is near the boundary of Hotspot #2. Soil Gas - Soil gas samples were collected at temporary sample locations SG-1 through SG-4 and permanent sample locations SV-1 through SV-4 to characterize soil gas within the boundary of the Site and along the perimeter of the Site and to evaluate potential effects of soil gas on indoor air. Table 5 presents the soil gas analytical results. All soil gas samples analyzed exhibit detectible concentrations of VOCs. The soil gas samples exhibiting the highest concentration of chlorinated hydrocarbons were collected from Soil-gas Probe SV-4. Soil-gas Probe SV-4 is located hydraulically cross gradient of the Site and groundwater samples and subsurface soil samples collected from Monitoring Well MW-9 (located adjacent to SV-4) exhibited no VOCs at concentrations above screening criteria. Therefore, it is unlikely that the concentrations of chlorinated hydrocarbons detected in soil gas samples collected from SV-4 are the result of volatilization of VOCs from a local on-Site groundwater source. Subsurface soil above the water table in Hotspot # 2 and/or off-Site impacts are potential sources of chlorinated hydrocarbons in off-Site soil gas. Post-Remediation: Remediation at the site is complete. Prior to remediation, the primary contaminants of concern were volatile and semi-volatile organic compounds in soil, trichloroethene and trimethylbenzene in groundwater and chlorinated VOCs in soil vapor.

Health Problem: People are not drinking contaminated groundwater because the area is served by a public water supply not affected by the site. Since some contaminated soils remain at the site below concrete or clean backfill, people are not expected to come into contact with contaminated soils unless they dig below surface materials. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Actions have been taken on-site to address the potential for soil vapor intrusion to occur. Environmental sampling indicates that off-site soil vapor intrusion is a potential exposure pathway and actions have been recommended to address exposure concerns.

Dump: False
Structure: False
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: 40:42:23.8 / 73:56:3.1
Dell: False

353 MCKIBBIN STREET (Continued) **S106704102**

Record Add: 2004-11-12 08:31:00
Record Upd: 2015-02-11 11:53:00
Updated By: RJCOZZY
Own Op: Owner
Sub Type: 06
Owner Name: Luke Lichota
Owner Company: Bogart Plaza LLC
Owner Address: 589 Johnson Avenue
Owner Addr2: Not reported
Owner City,St,Zip: Brooklyn, NY 11237
Owner Country: United States of America
Own Op: Document Repository
Sub Type: NNN
Owner Name: Not reported
Owner Company: Brooklyn Public Library
Owner Address: Bushwick Branch
Owner Addr2: 340 Bushwick Avenue
Owner City,St,Zip: Brooklyn, NY 11206
Owner Country: United States of America
Own Op: Applicant/Requestor
Sub Type: P03
Owner Name: Luke Lichota
Owner Company: Bogart Plaza LLC
Owner Address: 589 Johnson Avenue
Owner Addr2: Not reported
Owner City,St,Zip: Brooklyn, NY 11237
Owner Country: United States of America
HW Code: C224102
Waste Type: ACETONE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: MERCURY
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: METHYLENE CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: TOLUENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: BENZO(B)FLUORANTHENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: XYLENE (MIXED)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2 TCA
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: COPPER

353 MCKIBBIN STREET (Continued) **S106704102**

Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: ZINC
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: BENZO(A)PYRENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: DIBENZ[A,H]ANTHRACENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: TRICHLOROETHENE (TCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2-TRICHLORETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2-TRICHLORETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2-TCA
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: ETHYLBENZENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: BENZ(A)ANTHRACENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: W2-1054-05-03
Cross Ref Type Code: 23
Cross Ref Type: Agreement/Consent Order Number
Record Added Date: 2009-05-07 15:32:00
Record Updated: 2009-05-07 15:32:00
Updated By: MOBARRIE
Crossref ID: 2011000430604
Cross Ref Type Code: 25
Cross Ref Type: County Recording Identifier
Record Added Date: 2011-12-20 13:54:00
Record Updated: 2011-12-20 13:54:00
Updated By: MXYAU

Name: 353 MCKIBBIN STREET
Address: 353 MCKIBBIN STREET
City,State,Zip: BROOKLYN, NY 11206
Site Code: 333585
Control Name: IC/EC Plan
HW Code: C224102

353 MCKIBBIN STREET (Continued) **S106704102**

Control Code: 34
Control Type: INST
Dt record added: 12/21/2011
Dt rec updated: 03/26/2019
Updated By: SNBOLLER
Site Code: 333585
Site Description: Location: The Site is situated on an approximately one-acre parcel bounded by Boerum Street and commercial properties to the north; by Bogart Street and commercial properties to the east; by McKibbin Street and a New York City Park and residential property to the south; and by a concrete facility adjacent and to the west. It is identified as Block 3083 and Lots 16 and 30 on the Kings County Tax Map. Current Uses/Zoning: The Site, which is currently vacant, is located in an industrial area of Kings County (Brooklyn) and is zoned MI-2 (Manufacturing District). The surrounding parcels are primarily industrial and manufacturing, with some residential properties nearby. Historical Uses: The Site was undeveloped land prior to the early 1900 s. F.H. Kalfleisch Chemical Works occupied a portion of the Site starting around 1907. Between 1951 and 1990, the Site hosted lacquer spraying operations. The Site assumed various configurations with portions of the site being used for different purpose between 1954 through 1994. The Site became vacant and undeveloped since 1994. Geology: The Site is located in the Atlantic Coastal Plain Physiographic Province. Bedrock beneath the Site consists of Pre-Cambrian Age crystalline metamorphic and igneous rock. No bedrock outcrops exist at the Site. Depth to bedrock at the Site is unknown, but is likely greater than 200 feet below ground surface (bgs). Surficial materials have been mapped as Pleistocene Age deposits of the Upper Glacial Aquifer, Gardiners Clay and Jameco Formation. Soils mantling the Site have been identified as Urban Fill. Urban fill consists of construction debris, rock, and ash. Based on information obtained from environmental borings, the Site is underlain by approximately 7 feet of urban fill. Glacial deposits underlie the urban fill and consist predominately of varying percentages of silt, sand and gravel. Hydrogeology: Shallow ground water is present in the fill material and/or the glacial deposits present beneath the Site. Depth to ground water is approximately 9 feet to 15 feet bgs. The predominant ground water table flow is north-northwest. The deep ground water flow is to the north.
Env Problem: Nature and Extent of Contamination: Prior to Remediation: Soil - Concentrations of regulated compounds that exceed RSCOs were observed at varying degrees in subsurface soil samples collected across the Site and along the off-Site perimeter. VOC concentrations greater than TAGM #4046 RSCOs are present predominately in the areas identified as Hotspot #1 and Hotspot #2. The extent of SVOCs detected at concentrations that exceed the individual TAGM #4046 RSCOs in subsurface soils is widespread across the Site and off-Site locations and predominately located in the urban fill deposits. Groundwater - VOCs were detected at concentrations that exceed TOGS in five of ten ground water samples collected from the shallow overburden aquifer, and each of the three sample collected from the deep portion of the overburden aquifer. Hydraulically upgradient monitoring well MW-9 did not exhibit VOC detections above TOGS. On the Site s northern property boundary, MW-6 and MW-7 represents hydraulically downgradient monitoring wells, and VOCs were not detected above TOGS in ground water samples collected from these downgradient wells. The ground water sample collected from monitoring well MW-12 contained

353 MCKIBBIN STREET (Continued) **S106704102**

the greatest number of VOCs detected above TOGS and the highest concentrations of VOCs. The location of MW-12 is near and hydraulically cross gradient of Hotspot #1 where shallow subsurface soil samples exhibited TCE concentrations three orders of magnitude above TAGM #4046 RSCOs. Trimethylbenzene detected at concentrations above the TOGS values of 5 ug/l is limited to shallow ground water collected from Monitoring Wells MW-3 and MW-5. The location of Monitoring Well MW-5 is near the boundary of Hotspot #2. Soil Gas - Soil gas samples were collected at temporary sample locations SG-1 through SG-4 and permanent sample locations SV-1 through SV-4 to characterize soil gas within the boundary of the Site and along the perimeter of the Site and to evaluate potential effects of soil gas on indoor air. Table 5 presents the soil gas analytical results. All soil gas samples analyzed exhibit detectible concentrations of VOCs. The soil gas samples exhibiting the highest concentration of chlorinated hydrocarbons were collected from Soil-gas Probe SV-4. Soil-gas Probe SV-4 is located hydraulically cross gradient of the Site and groundwater samples and subsurface soil samples collected from Monitoring Well MW-9 (located adjacent to SV-4) exhibited no VOCs at concentrations above screening criteria. Therefore, it is unlikely that the concentrations of chlorinated hydrocarbons detected in soil gas samples collected from SV-4 are the result of volatilization of VOCs from a local on-Site groundwater source. Subsurface soil above the water table in Hotspot # 2 and/or off-Site impacts are potential sources of chlorinated hydrocarbons in off-Site soil gas. Post-Remediation: Remediation at the site is complete. Prior to remediation, the primary contaminants of concern were volatile and semi-volatile organic compounds in soil, trichloroethene and trimethylbenzene in groundwater and chlorinated VOCs in soil vapor.

Health Problem: People are not drinking contaminated groundwater because the area is served by a public water supply not affected by the site. Since some contaminated soils remain at the site below concrete or clean backfill, people are not expected to come into contact with contaminated soils unless they dig below surface materials. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Actions have been taken on-site to address the potential for soil vapor intrusion to occur. Environmental sampling indicates that off-site soil vapor intrusion is a potential exposure pathway and actions have been recommended to address exposure concerns.

Dump: False
Structure: False
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: 40:42:23.8 / 73:56:3.1
Dell: False
Record Add: 2004-11-12 08:31:00
Record Upd: 2015-02-11 11:53:00
Updated By: RJCOZZY
Own Op: Owner

353 MCKIBBIN STREET (Continued) **S106704102**

Sub Type: 06
Owner Name: Luke Lichota
Owner Company: Bogart Plaza LLC
Owner Address: 589 Johnson Avenue
Owner Addr2: Not reported
Owner City,St,Zip: Brooklyn, NY 11237
Owner Country: United States of America
Own Op: Document Repository
Sub Type: NNN
Owner Name: Not reported
Owner Company: Brooklyn Public Library
Owner Address: Bushwick Branch
Owner Addr2: 340 Bushwick Avenue
Owner City,St,Zip: Brooklyn, NY 11206
Owner Country: United States of America
Own Op: Applicant/Requestor
Sub Type: P03
Owner Name: Luke Lichota
Owner Company: Bogart Plaza LLC
Owner Address: 589 Johnson Avenue
Owner Addr2: Not reported
Owner City,St,Zip: Brooklyn, NY 11237
Owner Country: United States of America
HW Code: C224102
Waste Type: ACETONE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: MERCURY
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: METHYLENE CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: TOLUENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: BENZO(B)FLUORANTHENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: XYLENE (MIXED)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2 TCA
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: COPPER
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: ZINC

353 MCKIBBIN STREET (Continued) **S106704102**

Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: BENZO(A)PYRENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: DIBENZ[A,H]ANTHRACENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: TRICHLOROETHENE (TCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2-TRICHLORETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2-TRICHLORETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: 1,1,2-TCA
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: ETHYLBENZENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224102
Waste Type: BENZ(A)ANTHRACENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: W2-1054-05-03
Cross Ref Type Code: 23
Cross Ref Type: Agreement/Consent Order Number
Record Added Date: 2009-05-07 15:32:00
Record Updated: 2009-05-07 15:32:00
Updated By: MOBARRIE
Crossref ID: 2011000430604
Cross Ref Type Code: 25
Cross Ref Type: County Recording Identifier
Record Added Date: 2011-12-20 13:54:00
Record Updated: 2011-12-20 13:54:00
Updated By: MXYAU

BROWNFIELDS:
Name: 353 MCKIBBIN STREET - OFF-SITE
Address: 353 MCKIBBIN STREET
City,State,Zip: BROOKLYN, NY 11206
Program: BCP
Site Code: 446405
Acres: Not reported
HW Code: C224102A
SWIS: 2401
Town: New York City

353 MCKIBBIN STREET (Continued) **S106704102**

Record Added Date: 03/15/2011
Record Updated Date: 02/08/2016
Update By: SXDEWES
Site Description: Location: The 353 McKibbin Street Off-Site (site) area is located in Brooklyn, Kings County. This site is related to the 353 McKibbin on-site property parcels (Site Number C224102) which are being addressed separately under the NYSDEC Brownfield s Cleanup Program (BCP). The area of concern subject to this work is considered off-site from the BCP property and reflects the investigation of contamination that migrated from that BCP site. Off-site sidewalks and road right-of-way areas were investigated. This work is being carried as a result of the BCP site being found to represent a significant threat to public health and/or the environment due to the migration to off-site areas. Current Uses/Zoning: The BCP site and off-site investigation area are located in an industrial section of Kings County (Brooklyn) and are zoned M1-2 (Manufacturing District). The surrounding parcels are primarily industrial and manufacturing, with some commercial and residential properties nearby and within the investigation area Historic Uses: The BCP project property was undeveloped land prior to the early 1900 s. F.H. Kalfleisch Chemical Works occupied a portion of the site starting around 1907. Between 1951 and 1990, the site hosted lacquer spraying operations. The BCP site property s use changed several times between 1954 and 1994 with portions of the property being used for different purposes. The site has been vacant/undeveloped since 1994. Geology and Hydrology: Based on information obtained from environmental borings, the site is underlain by approximately 7 feet of urban fill. Glacial deposits underlie the urban fill and consist predominately of varying percentages of silt, sand and gravel. Depth to bedrock at the Site is unknown, but is likely greater than 200 feet below ground surface (bgs). Shallow ground water is present in the fill material and/or the glacial deposits present beneath the Site. Depth to ground water is approximately 9 feet to 15 feet bgs. The predominant ground water table flow is north-northwest. The deep ground water flow is to the north.
Env Problem: Nature and Extent of Contamination: Based upon investigation activities conducted to date, the primary contaminants of concern in the off-site areas included chlorinated volatile organic compounds (CVOCs) and in particular trichloroethene (TCE). Soil - No CVOCs exceeding NYSDEC unrestricted Soil Cleanup Objectives (SCOs) were detected in off-site soil samples. Groundwater - Ten monitoring wells were sampled during the off-site investigation. Groundwater samples from four monitoring wells exceeded NYSDEC groundwater standards. All four wells are located on Boerum St. which borders the site to the north. The CVOCs exceeding standards were TCE at up to 16 ppb, and related compounds cis-1,2- dichloroethene (DCE) and tetrachloroethene (PCE), both with a maximum concentration of 22 ppb. The groundwater standard for each of these three compounds is 5 ppb. No further downgradient groundwater sampling was conducted. Soil Vapor CVOCs were detected in 9 of 11 off-site soil vapor locations. The highest concentrations, up to 2200 ug/m3 of TCE, are off the northeast corner of the site. Another location nearby had a concentration of 900 ug/m3 of TCE and 700 ug/m3 of PCE. PCE was also detected at 77 ug/m3 on Ingraham St., approximately 200 feet east of the site. TCE and PCE samples at other locations tested were generally 10 ug/m3 or less. Multiple offers of sub-slab vapor and indoor air sampling were made or attempted via mail, telephone, and staff visits to the

353 MCKIBBIN STREET (Continued) **S106704102**

	owners/occupants of 92 Bogart Street and the nearest known residential properties, three houses located approximately 300 east of the site on Ingraham Street. No responses were received.
Health Problem:	People are not drinking contaminated groundwater because the area is served by a public water supply not affected by the site. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Environmental sampling indicates that soil vapor intrusion is a concern for off-site buildings; however, nearby property owners have declined the agencies sampling offers.
Dump:	Not reported
Structure:	Not reported
Lagoon:	Not reported
Landfill:	Not reported
Pond:	Not reported
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	Not reported
Dell:	Not reported
Record Add:	Not reported
Record Upd:	Not reported
Updated By:	Not reported
Own Op:	Document Repository
Sub Type:	E
Owner Name:	Bushwick Branch
Owner Company:	Brooklyn Public Library
Owner Address:	340 Bushwick Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11206
Owner Country:	United States of America
HW Code:	Not reported
Waste Type:	Not reported
Waste Quantity:	Not reported
Waste Code:	Not reported
Crossref ID:	Not reported
Cross Ref Type Code:	Not reported
Cross Ref Type:	Not reported
Record Added Date:	Not reported
Record Updated:	Not reported
Updated By:	Not reported
Name:	353 MCKIBBIN STREET
Address:	353 MCKIBBIN STREET
City,State,Zip:	BROOKLYN, NY 11206
Program:	BCP
Site Code:	333585
Acres:	1.07
HW Code:	C224102
SWIS:	2401
Town:	New York City
Record Added Date:	11/12/2004
Record Updated Date:	08/07/2018
Update By:	JHOCONNE
Site Description:	Location: The Site is situated on an approximately one-acre parcel

353 MCKIBBIN STREET (Continued) **S106704102**

bounded by Boerum Street and commercial properties to the north; by Bogart Street and commercial properties to the east; by McKibbin Street and a New York City Park and residential property to the south; and by a concrete facility adjacent and to the west. It is identified as Block 3083 and Lots 16 and 30 on the Kings County Tax Map. Current Uses/Zoning: The Site, which is currently vacant, is located in an industrial area of Kings County (Brooklyn) and is zoned MI-2 (Manufacturing District). The surrounding parcels are primarily industrial and manufacturing, with some residential properties nearby. Historical Uses: The Site was undeveloped land prior to the early 1900 s. F.H. Kalfleisch Chemical Works occupied a portion of the Site starting around 1907. Between 1951 and 1990, the Site hosted lacquer spraying operations. The Site assumed various configurations with portions of the site being used for different purpose between 1954 through 1994. The Site became vacant and undeveloped since 1994. Geology: The Site is located in the Atlantic Coastal Plain Physiographic Province. Bedrock beneath the Site consists of Pre-Cambrian Age crystalline metamorphic and igneous rock. No bedrock outcrops exist at the Site. Depth to bedrock at the Site is unknown, but is likely greater than 200 feet below ground surface (bgs). Surficial materials have been mapped as Pleistocene Age deposits of the Upper Glacial Aquifer, Gardiners Clay and Jameco Formation. Soils mantling the Site have been identified as Urban Fill. Urban fill consists of construction debris, rock, and ash. Based on information obtained from environmental borings, the Site is underlain by approximately 7 feet of urban fill. Glacial deposits underlie the urban fill and consist predominately of varying percentages of silt, sand and gravel. Hydrogeology: Shallow ground water is present in the fill material and/or the glacial deposits present beneath the Site. Depth to ground water is approximately 9 feet to 15 feet bgs. The predominant ground water table flow is north-northwest. The deep ground water flow is to the north.

Env Problem:

Nature and Extent of Contamination: Prior to Remediation: Soil - Concentrations of regulated compounds that exceed RSCOs were observed at varying degrees in subsurface soil samples collected across the Site and along the off-Site perimeter. VOC concentrations greater than TAGM #4046 RSCOs are present predominately in the areas identified as Hotspot #1 and Hotspot #2. The extent of SVOCs detected at concentrations that exceed the individual TAGM #4046 RSCOs in subsurface soils is widespread across the Site and off-Site locations and predominately located in the urban fill deposits. Groundwater - VOCs were detected at concentrations that exceed TOGS in five of ten ground water samples collected from the shallow overburden aquifer, and each of the three sample collected from the deep portion of the overburden aquifer. Hydraulically upgradient monitoring well MW-9 did not exhibit VOC detections above TOGS. On the Site s northern property boundary, MW-6 and MW-7 represents hydraulically downgradient monitoring wells, and VOCs were not detected above TOGS in ground water samples collected from these downgradient wells. The ground water sample collected from monitoring well MW-12 contained the greatest number of VOCs detected above TOGS and the highest concentrations of VOCs. The location of MW-12 is near and hydraulically cross gradient of Hotspot #1 where shallow subsurface soil samples exhibited TCE concentrations three orders of magnitude above TAGM #4046 RSCOs. Trimethylbenzene detected at concentrations above the TOGS values of 5 ug/l is limited to shallow ground water collected from Monitoring Wells MW-3 and MW-5. The location of

353 MCKIBBIN STREET (Continued) **S106704102**

Monitoring Well MW-5 is near the boundary of Hotspot #2. Soil Gas - Soil gas samples were collected at temporary sample locations SG-1 through SG-4 and permanent sample locations SV-1 through SV-4 to characterize soil gas within the boundary of the Site and along the perimeter of the Site and to evaluate potential effects of soil gas on indoor air. Table 5 presents the soil gas analytical results. All soil gas samples analyzed exhibit detectible concentrations of VOCs. The soil gas samples exhibiting the highest concentration of chlorinated hydrocarbons were collected from Soil-gas Probe SV-4. Soil-gas Probe SV-4 is located hydraulically cross gradient of the Site and groundwater samples and subsurface soil samples collected from Monitoring Well MW-9 (located adjacent to SV-4) exhibited no VOCs at concentrations above screening criteria. Therefore, it is unlikely that the concentrations of chlorinated hydrocarbons detected in soil gas samples collected from SV-4 are the result of volatilization of VOCs from a local on-Site groundwater source. Subsurface soil above the water table in Hotspot # 2 and/or off-Site impacts are potential sources of chlorinated hydrocarbons in off-Site soil gas. Post-Remediation: Remediation at the site is complete. Prior to remediation, the primary contaminants of concern were volatile and semi-volatile organic compounds in soil, trichloroethene and trimethylbenzene in groundwater and chlorinated VOCs in soil vapor.

Health Problem: People are not drinking contaminated groundwater because the area is served by a public water supply not affected by the site. Since some contaminated soils remain at the site below concrete or clean backfill, people are not expected to come into contact with contaminated soils unless they dig below surface materials. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Actions have been taken on-site to address the potential for soil vapor intrusion to occur. Environmental sampling indicates that off-site soil vapor intrusion is a potential exposure pathway and actions have been recommended to address exposure concerns.

Dump: False
Structure: False
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: 40:42:23.8 / 73:56:3.1
Dell: False
Record Add: 2004-11-12 08:31:00
Record Upd: 2015-02-11 11:53:00
Updated By: RJCOZZY
Own Op: Owner
Sub Type: 06
Owner Name: Luke Lichota
Owner Company: Bogart Plaza LLC
Owner Address: 589 Johnson Avenue
Owner Addr2: Not reported
Owner City,St,Zip: Brooklyn, NY 11237
Owner Country: United States of America

353 MCKIBBIN STREET (Continued) **S106704102**

Own Op:	Document Repository
Sub Type:	NNN
Owner Name:	Not reported
Owner Company:	Brooklyn Public Library
Owner Address:	Bushwick Branch
Owner Addr2:	340 Bushwick Avenue
Owner City,St,Zip:	Brooklyn, NY 11206
Owner Country:	United States of America
Own Op:	Applicant/Requestor
Sub Type:	P03
Owner Name:	Luke Lichota
Owner Company:	Bogart Plaza LLC
Owner Address:	589 Johnson Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11237
Owner Country:	United States of America
HW Code:	C224102
Waste Type:	ACETONE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	MERCURY
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	METHYLENE CHLORIDE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	TOLUENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	BENZO(B)FLUORANTHENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	XYLENE (MIXED)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	1,1,2 TCA
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	COPPER
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	ZINC
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	BENZO(A)PYRENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102

353 MCKIBBIN STREET (Continued) **S106704102**

Waste Type:	DIBENZ[A,H]ANTHRACENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	TRICHLOROETHENE (TCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	1,1,2-TRICHLORETHYLENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	1,1,2-TRICHLORETHYLENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	1,1,2-TCA
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	ETHYLBENZENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224102
Waste Type:	BENZ(A)ANTHRACENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
Crossref ID:	W2-1054-05-03
Cross Ref Type Code:	23
Cross Ref Type:	Agreement/Consent Order Number
Record Added Date:	2009-05-07 15:32:00
Record Updated:	2009-05-07 15:32:00
Updated By:	MOBARRIE
Crossref ID:	2011000430604
Cross Ref Type Code:	25
Cross Ref Type:	County Recording Identifier
Record Added Date:	2011-12-20 13:54:00
Record Updated:	2011-12-20 13:54:00
Updated By:	MXYAU

U207 **CON EDISON** **NJ MANIFEST** **S120673254**
SSE **157 GEORGE ST OPP OF** **N/A**
1/8-1/4 **BROOKLYN, NY 11234**
0.222 mi.
1170 ft. **Site 7 of 9 in cluster U**

Relative: **Higher**

Actual: **29 ft.**

NJ MANIFEST:

EPA Id:	NYP004799755
Mail Address:	IRVING PLACE, 15TH FL NE
Mail City/State/Zip:	NEW YORK, NY 10003
Facility Phone:	Not reported
Emergency Phone:	Not reported
Contact:	THERESA BURKARD
Comments:	Not reported
SIC Code:	Not reported
County:	NY047
Municipal:	Not reported
Previous EPA Id:	Not reported

CON EDISON (Continued) **S120673254**

Gen Flag:	Not reported
Trans Flag:	Not reported
TSDF Flag:	Not reported
Name Change:	Not reported
Date Change:	Not reported

Manifest:

Manifest Number:	002624671GBF
EPA ID:	NYP004799755
Date Shipped:	6/26/2015
TSDF EPA ID:	NJD991291105
Transporter EPA ID:	NJD003812047
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	Not reported
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	Not reported
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	NEW YORK, NY 10003
Reason Load Was Rejected:	Not reported

U208 **CON EDISON** **NY MANIFEST** **S118257273**
SSE **157 GEORGE ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11234**
0.222 mi.
1170 ft. **Site 8 of 9 in cluster U**

Relative:
Higher

Actual:
29 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004799755
Facility Status:	Not reported
Location Address 1:	157 GEORGE ST OPP OF
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11234
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004799755
Mailing Name:	CON EDISON
Mailing Contact:	DENNIS HUACON
Mailing Address 1:	4 IRVING PL 15TH FL
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	2124603770

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2015
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	06/26/2015
Trans1 Recv Date:	06/26/2015
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	06/26/2015
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004799755
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002624671GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported

CON EDISON (Continued) **S118257273**

Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	400
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

U209 **CON EDISON** **RCRA NonGen / NLR** **1019325160**
SSE **157 GEORGE ST OPP OF** **NYP004799755**
1/8-1/4 **BROOKLYN, NY 11234**
0.222 mi.
1170 ft. **Site 9 of 9 in cluster U**

Relative: **Higher**

Actual: **29 ft.**

RCRA NonGen / NLR:

Date form received by agency:	02/05/2016
Facility name:	CON EDISON
Site name:	CON EDISON - MANHOLE 72374
Facility address:	157 GEORGE ST OPP OF BROOKLYN, NY 11234
EPA ID:	NYP004799755
Mailing address:	IRVING PLACE, 15TH FL NE NEW YORK, NY 10003
Contact:	THERESA BURKARD
Contact address:	IRVING PLACE, 15TH FL NE NEW YORK, NY 10003
Contact country:	US
Contact telephone:	212-460-2262
Contact email:	BURKARDT@CONED.COM
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	CONSOLIDATED EDISON COMPANY OF NY, INC.
Owner/operator address:	IRVING PLACE NEW YORK, NY 10003
Owner/operator country:	US
Owner/operator telephone:	Not reported

CON EDISON (Continued) **1019325160**

Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 06/26/2015
Owner/Op end date: Not reported

Owner/operator name: CONSOLIDATED EDISON COMPANY OF NY, INC.
Owner/operator address: IRVING PLACE
NEW YORK, NY 10003
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 06/26/2015
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 06/26/2015
Site name: CON EDISON
Classification: Not a generator, verified

Date form received by agency: 06/26/2015
Site name: CON EDISON
Classification: Small Quantity Generator

Hazardous Waste Summary:

. Waste code: D008
. Waste name: LEAD

Biennial Reports:

Last Biennial Reporting Year: 2017

CON EDISON (Continued) **1019325160**

Annual Waste Handled:
Waste code: D008
Waste name: LEAD
Amount (Lbs): 3320

Violation Status: No violations found

AA210 **ADM REALTY CORP. LLC** **NY UST** **U004045870**
WSW **318 BOERUM STREET** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.225 mi.
1189 ft. **Site 3 of 11 in cluster AA**

Relative:
Lower

Actual:
17 ft.

UST:
Name: ADM REALTY CORP. LLC
Address: 318 BOERUM STREET
City,State,Zip: BROOKLYN, NY 11206
Id/Status: 2-609103 / Unregulated/Closed
Program Type: PBS
Region: STATE
DEC Region: 2
Expiration Date: N/A
UTM X: 589952.96815
UTM Y: 4506749.89297
Site Type: Trucking/Transportation/Fleet Operation

Affiliation Records:
Site Id: 30949
Affiliation Type: Facility Owner
Company Name: ANTHONY MASTRONARDI
Contact Type: Not reported
Contact Name: Not reported
Address1: 318 BOERUM ST.
Address2: Not reported
City: BROOKLYN
State: NY
Zip Code: 11206
Country Code: 001
Phone: (516) 790-1256
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 30949
Affiliation Type: Mail Contact
Company Name: ANTHONY MASTRONARDI
Contact Type: Not reported
Contact Name: Not reported
Address1: 318 BOERUM STREET
Address2: Not reported
City: BROOKLYN
State: NY
Zip Code: 11206
Country Code: 001
Phone: (516) 790-1256
EMail: Not reported
Fax Number: Not reported

ADM REALTY CORP. LLC (Continued) **U004045870**

Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	30949
Affiliation Type:	Facility Operator
Company Name:	ADM REALTY CORP. LLC
Contact Type:	Not reported
Contact Name:	TONY MASTRONARDI
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(516) 790-1256
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	30949
Affiliation Type:	Emergency Contact
Company Name:	ANTHONY MASTRONARDI
Contact Type:	Not reported
Contact Name:	TONY MASTRONARDI
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(516) 790-1256
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	1
Tank ID:	66441
Tank Status:	Closed - Removed
Material Name:	Closed - Removed
Capacity Gallons:	10000
Install Date:	Not reported
Date Tank Closed:	07/16/2008
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Tightness Test Method:	-
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	LXZIELIN

ADM REALTY CORP. LLC (Continued) **U004045870**

Last Modified: 06/23/2017

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
L09 - Piping Leak Detection - Exempt Suction Piping
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating

AA211 **UNITED TRANSIT MIX INC** **NY LTANKS S105999327**
WSW **318 BOERUM ST** **NY SPDES N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.225 mi.
1189 ft. **Site 4 of 11 in cluster AA**

Relative: **Lower**

Actual: **17 ft.**

LTANKS:

Name:	SPILL NUMBER 0303441
Address:	318 BOERUM ST
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0303441 / 2004-04-23
Facility ID:	0303441
Site ID:	142932
Spill Date:	2003-07-02
Spill Cause:	Tank Failure
Spill Source:	Commercial/Industrial
Spill Class:	B3
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	CESAWYER
Referred To:	Not reported
Reported to Dept:	2003-07-02
CID:	257
Water Affected:	Not reported
Spill Notifier:	Other
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	2003-07-02
Spill Record Last Update:	2004-04-23
Spiller Name:	Not reported
Spiller Company:	Not reported
Spiller Address:	318 BOERUM ST
Spiller County:	001
Spiller Contact:	ANTHONY PARRA
Spiller Phone:	(718) 388-7287
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	121944
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was SAWYER Zhao made a site visit and found contaminated soil Sangesland sent out a contaminated soil letter to: ADM Realty Corp. 18 Oxford Rd

UNITED TRANSIT MIX INC (Continued) **S105999327**

East Rockaway, NY 11518 Attn: Anthony Mastronardi 8/28/03 1100 Hrs - Sawyer - Met Patricia Badding of Environmental Management services (908)604-2291, Tony Mastonardi the property owner and ATS Environmental the driller at the site to take samples. There were 5 samples taken from the south and west sides of the tank. 9/17/03 1111 Hrs - Sawyer - I received the partial results showing slightly elevated levels of some benzos and chrysene in soil borings 4 and 5. 11/01/03 - Sawyer - Received report of findings by Patty of Environmental Management, Inc. This report contained disposal documentation and PBS registration. I was told by another inspector that some fill of NYC has elevated semi volatiles and this should not be a problem. Closed.h "

Remarks: "caller says there is no permits and that oil is in the soil while digging is going on and nothing being done about clean up"

All Materials:

Site ID:	142932
Operable Unit ID:	870547
Operable Unit:	01
Material ID:	504308
Material Code:	0066A
Material Name:	unknown petroleum
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

SPDES:

Permit Number:	NYR00D872
State-Region:	02
Expiration Date:	09/30/2017
Current Major Minor Status:	Minor
Primary Facility SIC Code:	3273
State Water Body Name:	OWLS HEAD STP - UPPER BAY
Limit Set Status Flag:	Active
Total Actual Average Flow(MGD):	Not reported
Total App Design Flow(MGD):	Not reported
UDF1:	Not reported
Lat/Long:	+40.706 / -73.934
DMR Cognizant Official:	Not reported
UDF2:	Not reported
UDF3:	Not reported
FIPS County Code:	NY047
Non-Gov Permit Affiliation Type Desc:	DMR Mailing Address
Non-Gov Permit Org Formal Name:	UNITED TRANSIT MIX INC
Non-Gov Permit Street Address:	UNITED TRANSIT MIX INC
Non-Gov Permit Supplemental Location:	318 BOERUM ST
Non-Gov Permit City:	BROOKLYN
Non-Gov Permit State Code:	NY
Non-Gov Permit Zip Code:	11237
Non-Gov Facility Affiliation Type Desc:	Owner
Non-Gov Facility Org Formal Name:	UNITED TRANSIT MIX INC

UNITED TRANSIT MIX INC (Continued) **S105999327**

Non-Gov Facility Street Address:	UNITED TRANSIT MIX INC
Non-Gov Facility Supplemental Location:	318 BOERUM ST
Non-Gov Facility City:	BROOKLYN
Non-Gov Facility State Code:	NY
Non-Gov Facility Zip Code:	11237
State Water Body:	Not reported
UDF2:	Not reported
UDF3:	Not reported
FIPS County Code:	NY047
Non-Gov Permit Affiliation Type Desc:	Permittee
Non-Gov Permit Org Formal Name:	UNITED TRANSIT MIX INC
Non-Gov Permit Street Address:	318 BOERUM ST
Non-Gov Permit Supplemental Location:	Not reported
Non-Gov Permit City:	BROOKLYN
Non-Gov Permit State Code:	NY
Non-Gov Permit Zip Code:	11237
Non-Gov Facility Affiliation Type Desc:	Owner
Non-Gov Facility Org Formal Name:	UNITED TRANSIT MIX INC
Non-Gov Facility Street Address:	UNITED TRANSIT MIX INC
Non-Gov Facility Supplemental Location:	318 BOERUM ST
Non-Gov Facility City:	BROOKLYN
Non-Gov Facility State Code:	NY
Non-Gov Facility Zip Code:	11237
State Water Body:	Not reported
UDF2:	Not reported
UDF3:	Not reported
FIPS County Code:	NY047
Non-Gov Permit Affiliation Type Desc:	Not reported
Non-Gov Permit Org Formal Name:	Not reported
Non-Gov Permit Street Address:	Not reported
Non-Gov Permit Supplemental Location:	Not reported
Non-Gov Permit City:	Not reported
Non-Gov Permit State Code:	Not reported
Non-Gov Permit Zip Code:	Not reported
Non-Gov Facility Affiliation Type Desc:	Owner
Non-Gov Facility Org Formal Name:	UNITED TRANSIT MIX INC
Non-Gov Facility Street Address:	UNITED TRANSIT MIX INC
Non-Gov Facility Supplemental Location:	318 BOERUM ST
Non-Gov Facility City:	BROOKLYN
Non-Gov Facility State Code:	NY
Non-Gov Facility Zip Code:	11237
State Water Body:	Not reported

AA212 **UNITED TRANSIT MIX INC** **NY AST** **A100386221**
WSW **318 BOERUM STREET** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.225 mi.
1189 ft. **Site 5 of 11 in cluster AA**

Relative: AST:
Lower

Name:	UNITED TRANSIT MIX INC
Address:	318 BOERUM STREET
City,State,Zip:	BROOKLYN, NY 11206
Region:	STATE
DEC Region:	2

Actual:
17 ft.

UNITED TRANSIT MIX INC (Continued) **A100386221**

Site Status: Unregulated/Closed
Facility Id: 2-612184
Program Type: PBS
UTM X: 589929.98936
UTM Y: 4506743.51148
Expiration Date: N/A
Site Type: Other

Affiliation Records:

Site Id: 492044
Affiliation Type: Facility Owner
Company Name: ADM REALTY LLC
Contact Type: PRESIDENT
Contact Name: MASTERONARDI
Address1: 318 BOERUM STREET
Address2: Not reported
City: BROOKLYN
State: NY
Zip Code: 11206
Country Code: 001
Phone: (718) 416-3400
EMail: Not reported
Fax Number: Not reported
Modified By: DAFRANCI
Date Last Modified: 2017-10-27

Site Id: 492044
Affiliation Type: Mail Contact
Company Name: UNITED TRANSIT MIX INC.
Contact Type: Not reported
Contact Name: DANIEL MASTERONARDI
Address1: PO BOX 370647
Address2: Not reported
City: BROOKLYN
State: NY
Zip Code: 11237
Country Code: 001
Phone: (718) 416-3400
EMail: DANNY@UNITEDTRANSITMIX.COM
Fax Number: Not reported
Modified By: DAFRANCI
Date Last Modified: 2017-10-27

Site Id: 492044
Affiliation Type: Facility Operator
Company Name: UNITED TRANSIT MIX INC
Contact Type: Not reported
Contact Name: DANIEL MASTERONARDI
Address1: Not reported
Address2: Not reported
City: Not reported
State: NN
Zip Code: Not reported
Country Code: 001
Phone: (718) 416-3400
EMail: Not reported
Fax Number: Not reported
Modified By: MSBAPTIS

UNITED TRANSIT MIX INC (Continued) **A100386221**

Date Last Modified: 2014-02-27

Site Id: 492044
Affiliation Type: Emergency Contact
Company Name: ADM REALTY LLC
Contact Type: Not reported
Contact Name: MASTERONARDI
Address1: Not reported
Address2: Not reported
City: Not reported
State: NN
Zip Code: Not reported
Country Code: 001
Phone: (718) 416-3400
EMail: Not reported
Fax Number: Not reported
Modified By: MSBAPTIS
Date Last Modified: 2014-02-27

Tank Info:

Tank Number: F-003A
Tank Id: 251221

Equipment Records:

G00 - Tank Secondary Containment - None
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
D00 - Pipe Type - No Piping
L00 - Piping Leak Detection - None
I04 - Overfill - Product Level Gauge (A/G)
J00 - Dispenser - None
E00 - Piping Secondary Containment - None
H00 - Tank Leak Detection - None
A00 - Tank Internal Protection - None
K02 - Spill Prevention - Transfer Station Containment

Tank Location: Aboveground - on saddles, legs, racks, etc.... Tank bottom is elevated above grade or tank pad, allowing visual inspection.
Tank Type: Steel/Carbon Steel/Iron
Tank Status: Closed - Removed
Pipe Model: Not reported
Install Date: 11/13/2012
Capacity Gallons: 3000
Tightness Test Method: -
Date Test: Not reported
Next Test Date: Not reported
Date Tank Closed: 05/22/2017
Register: True
Modified By: DAFRANCI
Last Modified: 10/27/2017
Material Name: diesel

Tank Number: H-001A
Tank Id: 251219

UNITED TRANSIT MIX INC (Continued) **A100386221**

Equipment Records:
B00 - Tank External Protection - None
F00 - Pipe External Protection - None
E00 - Piping Secondary Containment - None
H00 - Tank Leak Detection - None
J02 - Dispenser - Suction Dispenser
L00 - Piping Leak Detection - None
C01 - Pipe Location - Aboveground
I05 - Overfill - Vent Whistle
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
G10 - Tank Secondary Containment - Impervious Underlayment
K00 - Spill Prevention - None

Tank Location: Aboveground - contact with impervious barrier... Tank bottom rests on impervious barrier, allowing visual indication of leaks.
Tank Type: Steel/Carbon Steel/Iron
Tank Status: In Service
Pipe Model: Not reported
Install Date: 10/11/2005
Capacity Gallons: 275
Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Date Tank Closed: Not reported
Register: True
Modified By: MSBAPTIS
Last Modified: 04/14/2017
Material Name: #2 fuel oil (on-site consumption)

Tank Number: H-002B
Tank Id: 251220

Equipment Records:
I05 - Overfill - Vent Whistle
B00 - Tank External Protection - None
F00 - Pipe External Protection - None
E00 - Piping Secondary Containment - None
H00 - Tank Leak Detection - None
L00 - Piping Leak Detection - None
J02 - Dispenser - Suction Dispenser
C01 - Pipe Location - Aboveground
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
G10 - Tank Secondary Containment - Impervious Underlayment
K00 - Spill Prevention - None

Tank Location: Aboveground - contact with impervious barrier... Tank bottom rests on impervious barrier, allowing visual indication of leaks.
Tank Type: Steel/Carbon Steel/Iron
Tank Status: In Service
Pipe Model: Not reported
Install Date: 10/11/2005
Capacity Gallons: 275
Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Date Tank Closed: Not reported

UNITED TRANSIT MIX INC (Continued) **A100386221**

Register: True
Modified By: MSBAPTIS
Last Modified: 04/14/2017
Material Name: #2 fuel oil (on-site consumption)

AA213 **ALVIN J. BART & SONS, INC** **NY UST** **U003712146**
West **333 JOHNSON AVENUE** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.228 mi.
1202 ft. **Site 6 of 11 in cluster AA**

Relative: **Lower**
Actual: **18 ft.**

UST:
Name: ALVIN J. BART & SONS, INC
Address: 333 JOHNSON AVENUE
City,State,Zip: BROOKLYN, NY 11206
Id/Status: 2-604337 / Active
Program Type: PBS
Region: STATE
DEC Region: 2
Expiration Date: 04/30/2020
UTM X: 589941.49813
UTM Y: 4506827.11595
Site Type: Manufacturing (Other than Chemical)/Processing

Affiliation Records:
Site Id: 26212
Affiliation Type: Mail Contact
Company Name: NORMANDY REAL ESTATE PARTNERS
Contact Type: Not reported
Contact Name: CHRIS MASOTTO
Address1: 1370 AVENUE OF THE AMERICAS
Address2: Not reported
City: NEW YORK
State: NY
Zip Code: 10019
Country Code: 001
Phone: (212) 489-0622
EMail: CMASOTTO@NORMANDYREALTY.COM
Fax Number: Not reported
Modified By: MRBARROW
Date Last Modified: 2017-08-04

Site Id: 26212
Affiliation Type: Facility Operator
Company Name: ALVIN J. BART & SONS, INC
Contact Type: Not reported
Contact Name: CHRIS MASOTTO
Address1: Not reported
Address2: Not reported
City: Not reported
State: NN
Zip Code: Not reported
Country Code: 001
Phone: Not reported
EMail: Not reported
Fax Number: Not reported
Modified By: MRBARROW
Date Last Modified: 2017-08-04

ALVIN J. BART & SONS, INC (Continued) **U003712146**

Site Id:	26212
Affiliation Type:	Emergency Contact
Company Name:	333 JOHNSON PROPERTY HOLDINGS, LLC
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	999
Phone:	Not reported
EMail:	Not reported
Fax Number:	Not reported
Modified By:	MRBARROW
Date Last Modified:	2017-08-04

Site Id:	26212
Affiliation Type:	Facility Owner
Company Name:	333 JOHNSON PROPERTY HOLDINGS, LLC
Contact Type:	AUTHORIZED SIGNATORY
Contact Name:	MICHAEL LOUGHLIN
Address1:	C/O NORMANDY REAL ESTATE PARTNERS. 53 MAPLE AVE.
Address2:	Not reported
City:	MORRISTOWN
State:	NJ
Zip Code:	07960
Country Code:	001
Phone:	Not reported
EMail:	Not reported
Fax Number:	Not reported
Modified By:	MRBARROW
Date Last Modified:	2017-08-04

Tank Info:

Tank Number:	001
Tank ID:	57405
Tank Status:	In Service
Material Name:	In Service
Capacity Gallons:	5000
Install Date:	12/01/1968
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Tightness Test Method:	21
Date Test:	08/21/2018
Next Test Date:	08/21/2019
Pipe Model:	Not reported
Modified By:	TLYE
Last Modified:	08/27/2018

Equipment Records:

ALVIN J. BART & SONS, INC (Continued) **U003712146**

C03 - Pipe Location - Aboveground/Underground Combination
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
B00 - Tank External Protection - None
F00 - Pipe External Protection - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
L09 - Piping Leak Detection - Exempt Suction Piping
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Number:	002
Tank ID:	57406
Tank Status:	In Service
Material Name:	In Service
Capacity Gallons:	5000
Install Date:	12/01/1968
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)
Tightness Test Method:	14
Date Test:	11/25/2009
Next Test Date:	10/11/2016
Pipe Model:	Not reported
Modified By:	MRBARROW
Last Modified:	02/01/2018

Equipment Records:

G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
C03 - Pipe Location - Aboveground/Underground Combination
L09 - Piping Leak Detection - Exempt Suction Piping
H00 - Tank Leak Detection - None
I00 - Overfill - None
F00 - Pipe External Protection - None
B99 - Tank External Protection - Other
D01 - Pipe Type - Steel/Carbon Steel/Iron
A00 - Tank Internal Protection - None

AA214 **BERLINER & MARX, INC. BLDG** **NY AST** **U003395702**
West **330 JOHNSON AVENUE** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.229 mi.
1209 ft. **Site 7 of 11 in cluster AA**

Relative: **Lower**

Actual: **18 ft.**

AST:

Name:	BERLINER & MARX, INC. BLDG
Address:	330 JOHNSON AVENUE
City,State,Zip:	BROOKLYN, NY 11206
Region:	STATE
DEC Region:	2
Site Status:	Unregulated/Closed
Facility Id:	2-600651

BERLINER & MARX, INC. BLDG (Continued) **U003395702**

Program Type:	PBS
UTM X:	589984.34262
UTM Y:	4506784.97196
Expiration Date:	N/A
Site Type:	Other

Affiliation Records:

Site Id:	22631
Affiliation Type:	Facility Owner
Company Name:	BERLINER & MARX,INC
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	104 SUNFIELD AVENUE
Address2:	Not reported
City:	EDISON
State:	NJ
Zip Code:	08837
Country Code:	001
Phone:	(908) 417-0360
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	22631
Affiliation Type:	Mail Contact
Company Name:	BERLINER & MARX,INC
Contact Type:	Not reported
Contact Name:	MR. RICHARD HAYDEN
Address1:	104 SUNFIELD AVENUE
Address2:	Not reported
City:	EDISON
State:	NJ
Zip Code:	08837
Country Code:	001
Phone:	(908) 417-0360
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	22631
Affiliation Type:	Facility Operator
Company Name:	BERLINER & MARX, INC. BLDG
Contact Type:	Not reported
Contact Name:	J. POWEL
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(908) 782-7128
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

BERLINER & MARX, INC. BLDG (Continued) **U003395702**

Site Id:	22631
Affiliation Type:	Emergency Contact
Company Name:	BERLINER & MARX,INC
Contact Type:	Not reported
Contact Name:	J. POWEL
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(908) 782-7128
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	001
Tank Id:	43203
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Equipment Records:

	B00 - Tank External Protection - None
	F00 - Pipe External Protection - None
	G00 - Tank Secondary Containment - None
	J02 - Dispenser - Suction Dispenser
	C01 - Pipe Location - Aboveground
	H00 - Tank Leak Detection - None
	I00 - Overfill - None
	L09 - Piping Leak Detection - Exempt Suction Piping
	A00 - Tank Internal Protection - None
	D01 - Pipe Type - Steel/Carbon Steel/Iron
Tank Location:	Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Closed - In Place
Pipe Model:	Not reported
Install Date:	06/01/1965
Capacity Gallons:	2000
Tightness Test Method:	-
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	01/01/1993
Register:	True
Modified By:	LXZIELIN
Last Modified:	04/14/2017
Material Name:	#2 fuel oil (on-site consumption)

Tank Number:	002
Tank Id:	43204
Material Code:	0009
Common Name of Substance:	Gasoline

BERLINER & MARX, INC. BLDG (Continued) **U003395702**

Equipment Records:
B00 - Tank External Protection - None
F00 - Pipe External Protection - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
C01 - Pipe Location - Aboveground
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Location:	Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Closed - In Place
Pipe Model:	Not reported
Install Date:	Not reported
Capacity Gallons:	550
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	12/01/1991
Register:	True
Modified By:	TRANSLAT
Last Modified:	04/14/2017
Material Name:	gasoline
Tank Number:	003
Tank Id:	43205
Material Code:	0009
Common Name of Substance:	Gasoline

Equipment Records:
C01 - Pipe Location - Aboveground
H00 - Tank Leak Detection - None
I00 - Overfill - None
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
B00 - Tank External Protection - None
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Location:	Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Closed - In Place
Pipe Model:	Not reported
Install Date:	Not reported
Capacity Gallons:	550
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	12/01/1991
Register:	True
Modified By:	TRANSLAT
Last Modified:	04/14/2017

BERLINER & MARX, INC. BLDG (Continued) **U003395702**

Material Name: gasoline

Tank Number: 004
Tank Id: 43206
Material Code: 0001
Common Name of Substance: #2 Fuel Oil (On-Site Consumption)

Equipment Records:
H00 - Tank Leak Detection - None
I00 - Overfill - None
B00 - Tank External Protection - None
F00 - Pipe External Protection - None
C01 - Pipe Location - Aboveground
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Location: Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type: Steel/Carbon Steel/Iron
Tank Status: Closed - In Place
Pipe Model: Not reported
Install Date: Not reported
Capacity Gallons: 550
Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Date Tank Closed: 12/01/1991
Register: True
Modified By: TRANSLAT
Last Modified: 04/14/2017
Material Name: #2 fuel oil (on-site consumption)

Y215 **NYC DEP HAZ MAT** **NY MOSF** **S102143390**
NNW **200 MORGAN AVENUE** **NY LIENS** **N/A**
1/8-1/4 **BROOKLYN, NY 11201** **NY Spills**
0.229 mi. **NY MANIFEST**
1211 ft. **Site 6 of 14 in cluster Y**

Relative: **Lower**
Actual: **10 ft.**

MOSF:
Name: MORGAN OIL TERMINALS CORP.
Address: 200 MORGAN AVENUE
City,State,Zip: BROOKLYN, NY 11237
Facility ID: 2-1500
Program Type: MOSF
Tank Status: Inactive
Expiration Date: Not reported
Dec Region: 2
UTMX: 590073.27268
UTMY: 4507217.06314

LIENS:
Region: 2
Spill No: 92-09135
Tax Map Id: 2942-101, 157, 160, 207, 220
Lien Request Received: 03/22/1994

NYC DEP HAZ MAT (Continued) **S102143390**

Request Sent To APA Or Vendor:	12/05/1994
Draft Lien Received From Vendor:	05/31/1995
Approved Lien To Administrator:	Not reported
Signed By Administrator:	Not reported
Received From Administrator:	Not reported
Sent For Filing:	Not reported
Resent For Filing:	Not reported
Proof Of Service Received:	Not reported
Sent To OAG:	06/05/1995
Amount:	$71,828.17
Release Required:	Not reported
Sent To Administrator:	Not reported
Signed By Adminstrator:	Not reported
Received From Adminsitrator:	Not reported
Release Sent To OAG:	Not reported
Complete:	True
Release:	False
Withdrawn:	False

Region:	2
Spill No:	92-09135
Tax Map Id:	2942-101, 157, 160, 207, 220
Lien Request Received:	06/17/1996
Request Sent To APA Or Vendor:	07/18/1996
Draft Lien Received From Vendor:	11/19/1996
Approved Lien To Administrator:	Not reported
Signed By Administrator:	Not reported
Received From Administrator:	Not reported
Sent For Filing:	Not reported
Resent For Filing:	Not reported
Proof Of Service Received:	Not reported
Sent To OAG:	11/25/1996
Amount:	$561,620.28
Release Required:	Not reported
Sent To Administrator:	Not reported
Signed By Adminstrator:	Not reported
Received From Adminsitrator:	Not reported
Release Sent To OAG:	Not reported
Complete:	True
Release:	False
Withdrawn:	False

SPILLS:

Name:	IN THE CHANNEL
Address:	200 MORGAN AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	1202045 / 2012-05-31
Facility ID:	1202045
Facility Type:	ER
DER Facility ID:	419184
Site ID:	464793
DEC Region:	2
Spill Cause:	Unknown
Spill Class:	C4
SWIS:	2401
Spill Date:	2012-05-30
Investigator:	HRPATEL

NYC DEP HAZ MAT (Continued) **S102143390**

Referred To:	Not reported
Reported to Dept:	2012-05-31
CID:	Not reported
Water Affected:	ENGLISH KILLS
Spill Source:	Unknown
Spill Notifier:	Other
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2012-05-31
Spill Record Last Update:	2012-08-07
Spiller Name:	BRIAN CISKOWITZ
Spiller Company:	UNKNOWN
Spiller Address:	200 MORGAN AVE
Spiller Company:	999
Contact Name:	BRIAN CISKOWITZ
DEC Memo:	"05/31/12-Hiralkumar Patel. 9:30 AM:- visited site. no oil or sheen observed. after discussing with DEC Austin, case closed."
Remarks:	""

All Materials:

Site ID:	464793
Operable Unit ID:	1214830
Operable Unit:	01
Material ID:	2212900
Material Code:	9999
Material Name:	other - brown material
Case No.:	Not reported
Material FA:	Other
Quantity:	Not reported
Units:	Not reported
Recovered:	Not reported
Oxygenate:	Not reported

Name:	MORGAN OIL CORP
Address:	200 MORGAN AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9105949 / 1991-09-19
Facility ID:	9105949
Facility Type:	ER
DER Facility ID:	57235
Site ID:	251343
DEC Region:	2
Spill Cause:	Abandoned Drums
Spill Class:	B3
SWIS:	2401
Spill Date:	1991-09-03
Investigator:	SJMILLER
Referred To:	Not reported
Reported to Dept:	1991-09-03
CID:	Not reported
Water Affected:	NEWTOWN CREEK
Spill Source:	Major Facility (MOSF) > 400,000 gal
Spill Notifier:	Other

NYC DEP HAZ MAT (Continued) **S102143390**

Cleanup Ceased:	1991-09-19
Cleanup Meets Std:	True
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	1991-09-03
Spill Record Last Update:	2004-04-07
Spiller Name:	Not reported
Spiller Company:	MORGAN OIL CORP
Spiller Address:	Not reported
Spiller Company:	001
Contact Name:	Not reported
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was MILLER 10/10/95: This is additional information about material spilled from the translation of the old spill file: SHEEN, GLOBS."
Remarks:	"APPEARS TO BE COMING FROM A 55 GAL ABANDONED DRUM IN CREEK. OR MAY BE DUE TO A BULKHEAD (LOW TIDE)"

All Materials:

Site ID:	251343
Operable Unit ID:	956456
Operable Unit:	01
Material ID:	421709
Material Code:	0003A
Material Name:	#6 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

Name:	200 MORGAN AVE
Address:	200 MORGAN AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9112693 / 1992-03-13
Facility ID:	9112693
Facility Type:	ER
DER Facility ID:	57235
Site ID:	251344
DEC Region:	2
Spill Cause:	Unknown
Spill Class:	Not reported
SWIS:	2401
Spill Date:	1992-03-12
Investigator:	MCTIBBE
Referred To:	Not reported
Reported to Dept:	1992-03-12
CID:	Not reported
Water Affected:	Not reported
Spill Source:	Tank Truck
Spill Notifier:	Responsible Party
Cleanup Ceased:	1992-03-13
Cleanup Meets Std:	True
Last Inspection:	Not reported
Recommended Penalty:	False

NYC DEP HAZ MAT (Continued) **S102143390**

UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	1992-03-20
Spill Record Last Update:	2003-09-23
Spiller Name:	Not reported
Spiller Company:	Not reported
Spiller Address:	Not reported
Spiller Company:	001
Contact Name:	Not reported
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was TIBBE "
Remarks:	"FD ON SCENE. SPEEDY-DRY APPLIED"

All Materials:

Site ID:	251344
Operable Unit ID:	963025
Operable Unit:	01
Material ID:	414255
Material Code:	0003A
Material Name:	#6 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	50.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

Name:	200 MORGAN AVE.
Address:	200 MORGAN AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9208755 / 1998-02-05
Facility ID:	9208755
Facility Type:	ER
DER Facility ID:	57235
Site ID:	305060
DEC Region:	2
Spill Cause:	Equipment Failure
Spill Class:	C4
SWIS:	2401
Spill Date:	1992-10-29
Investigator:	KSTANG
Referred To:	Not reported
Reported to Dept:	1992-10-29
CID:	Not reported
Water Affected:	Not reported
Spill Source:	Major Facility (MOSF) > 400,000 gal
Spill Notifier:	Responsible Party
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	1992-10-30
Spill Record Last Update:	1998-02-10
Spiller Name:	Not reported
Spiller Company:	Not reported

NYC DEP HAZ MAT (Continued) **S102143390**

Spiller Address: Not reported
Spiller Company: 001
Contact Name: Not reported
DEC Memo: "Prior to Sept, 2004 data translation this spill Lead_DEC Field was TANG "
Remarks: "DURING TANK CLEANING OPERATION HOSE COUPLING FAILED -SLUDGE LEAKED TO SOIL AREA EXCAV AND DRUM CONTAM SOIL WILL DISPOSE NRC 142527 CALLED CITI-FUEL HAS CLEANED UP SPILL/SOME CONTAM SOIL NEED TO BE CL"

All Materials:
Site ID: 305060
Operable Unit ID: 972281
Operable Unit: 01
Material ID: 405835
Material Code: 0003A
Material Name: #6 fuel oil
Case No.: Not reported
Material FA: Petroleum
Quantity: 50.00
Units: G
Recovered: .00
Oxygenate: Not reported

Name: MORGAN OIL CORP
Address: 200 MORGAN AVENUE
City,State,Zip: BROOKLYN, NY
Spill Number/Closed Date: 8808176 / 1995-08-07
Facility ID: 8808176
Facility Type: ER
DER Facility ID: 57235
Site ID: 59301
DEC Region: 2
Spill Cause: Deliberate
Spill Class: A3
SWIS: 2401
Spill Date: 1989-01-10
Investigator: SIGONA
Referred To: Not reported
Reported to Dept: 1989-01-13
CID: Not reported
Water Affected: Not reported
Spill Source: Major Facility (MOSF) > 400,000 gal
Spill Notifier: Citizen
Cleanup Ceased: 1995-08-07
Cleanup Meets Std: False
Last Inspection: Not reported
Recommended Penalty: False
UST Trust: False
Remediation Phase: 0
Date Entered In Computer: 1989-01-19
Spill Record Last Update: 2004-04-07
Spiller Name: Not reported
Spiller Company: MORGAN OIL COMPANY
Spiller Address: MORGAN AVENUE
Spiller Company: 001
Contact Name: Not reported
DEC Memo: ""

NYC DEP HAZ MAT (Continued) **S102143390**

Remarks: "OIL DUMPED INTO CREEK WHICH EMPTIES INTO EAST RIVER, USUALLY TAKES PLACE DURING THE NIGHT."

All Materials:

Site ID:	59301
Operable Unit ID:	924580
Operable Unit:	01
Material ID:	452941
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	100.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

Name:	MORGAN OIL TERMINAL
Address:	200 MORGAN AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9209135 / Not Reported
Facility ID:	9209135
Facility Type:	ER
DER Facility ID:	57235
Site ID:	59302
DEC Region:	2
Spill Cause:	Equipment Failure
Spill Class:	A1
SWIS:	2401
Spill Date:	1992-11-06
Investigator:	HRPATEL
Referred To:	Not reported
Reported to Dept:	1992-11-06
CID:	Not reported
Water Affected:	ENGLISH KILLS
Spill Source:	Major Facility (MOSF) > 400,000 gal
Spill Notifier:	Federal Government
Cleanup Ceased:	1995-02-28
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	1
Date Entered In Computer:	1992-11-10
Spill Record Last Update:	2019-05-08
Spiller Name:	Not reported
Spiller Company:	CITIFUEL INC.
Spiller Address:	Not reported
Spiller Company:	001
Contact Name:	Not reported
DEC Memo:	"after discussing with DEC Austin, case transferred to DEC Patel. 04/20/12-Hiralkumar Patel. DEC remarks from 11/06/1992 to 04/19/12 are stored separately in e-docs. DEC Vought forwarded email from DEC Ketani who received email from Bill Hughes from GeoQuest, Inc. dated 02/07/12. Bill mentioned that scaffolding company has left the site and left mess behind. they are currently cleaning up the site. Bill Hughes GeoQuest, Inc. Ph. (860) 243-1757 Ext. 103 (860) 402-9592 (C)

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email: williamhughes01@gmail.com 1:00 PM:- left message for Bill at GeoQuest. 2:00 PM:- visited site with DEC Vought. site contains lots of junk left behind by scaffolding company. no environmental work in progress. found multiple wells (some destroyed and some in bad condition) on and around the property. Vought showed a large aboveground tank in concrete vault along south side of the property. some rainbow and silver sheen (could be mixed of biological and petroleum) observed on water in creek along north of the site. 04/27/12-Hiralkumar Patel. 10:16 AM:- received message from Bill. 11:43 AM:- spoke with Bill. he mentioned that due to access issue with the previous tenant (scaffolding company) for couple of years and large piles of junk left behind after tenant left, no environmental work is in progress at the site. once all the scaffolding junk removed, they are planning to conduct additional soil/gw investigation for additional data. asked him to send summary of work done till now and future plan. also asked him to submit property owner's contact information. 5/8/12-Vought-Vought and Patel held teleconference with NYSOAG Judith Karpen and State will only release lien upon cleanup of site to satisfaction of NYSDEC. Karpen noted that new owner was English Kills and former owner was Corpus Christi and that Corpus Christi declared bankruptcy and as a result State will receive minor settlement amount in lieu of total monies spent. Karpen noted that Corpus Christi may have secured eight million dollar loan for cleanup (as per former OAG Buss) but not sure if monies are being used for cleanup and also not sure whether Corpus Christi or English Kills is supervising cleanup. Karpen will begin file research upon completion of file review by DEC Patel and subsequent call to NYSOAG Karpen. Spill transferred to DEC Patel as per RSE. 05/18/12-Hiralkumar Patel. completed review of available documents and found following: 1) 10/12/2006: Robert Feller from Bond, Schoeneck & King, PLLC sent fax including a singed copy of Agreement for Discharge of Environmental Liens. RCC & York Associates, Inc. signed the agreement. RCC agreed on following terms: - payment of $ 25,000 upon execution of this agreement - upon completion of cleanup of environmental contamination to the satisfaction of NYS DEC, RCC or its assigns, heirs, or successors of interest, shall pay $ 100,000 - upon receipt of the final payment, DEC shall issue a release of its said environmental liens against the said property 2) 05/27/2009: DEC Ketani referred case to legal as no response to the STIP letter (dated 03/18/09). 05/23/12-Hiralkumar Patel. 2:40 PM:- received email from Bill including summary of work done by GeoQuest and disposal manifests for soil removed during removal of eastern tanks (400,000 gal and 200,000 gal). GeoQuest is planning to remove southern tanks (total five tanks). once the tank complex has been removed and extent of the sub-surface structure is known, a proposed plan of action for determining the extent of the subsurface contamination will be submitted. Bill will visit the site on 05/30/12. 05/24/12-Hiralkumar Patel. alternate address: 192-200 Morgan Ave MOSF #: 2-1500. MOSF registration showing tanks still in-service. registration expired on 03/31/1991. other spill #: 8808176, 9105949, 9112693, 9208755 and 9211657 spill # 8808176 was reported on 01/13/1989 as 100 gal #2 oil dumped into creek. case closed on 08/07/1995. no documents on e-docs. spill # 9105949 was reported on 09/03/1991 as #6 oil found in creek which might be coming from a 55 gal abandoned drum or from bulkhead. case closed 09/19/1991. spill # 9112693 was reported on 03/12/1992 as 50 gal #6 oil spilled. case closed on 03/13/1992. spill # 9208755 was reported

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on 10/29/1992 as 50 gal #6 oil sludge spilled during tank cleaning operation. spill cleaned up by Citi Fuel. case closed on 02/05/1998. spill # 9211657 was reported on 12/23/1992 by DEC Mitchell due to contamination found in wells as part of PIN job. 05/25/12-Hiarlkumar Patel. 12:43 PM:- spoke with DEC legal regarding case initiation and confirmed no legal action from region 2 office as owner was doing work. 05/30/12-Hiralkumar Patel. 1:30 PM:- visited site. met Bill. found tank removal operation at the site. crew already removed more than 70% of the tank #1 (which is closest to the Morgan Ave - 647,000 gal tank). found about 12 inches thick concrete pad under the tank metal. water found on the side of the tank pad and oil found on water. no petroleum odors noticed. Bill mentioned that tank removal operation begun probably at the beginning of the month. informed him that the department has not received any work plans or notification to MOSF regarding removal of the tanks. after discussing with DEC Austin, asked Bill to stop tank removal work immediately and informed him that work should only be resumed after getting approval from the Department. Bill spoke with property owner and requested a meeting in DEC office. informed Bill that meeting can be scheduled once required work plan/documents submitted to the Department. during visit, met with Jacques Guillet (914-309-4317), contractor who is removing tank metals. informed him about no more work without the department's approval. 2:30 PM:- spoke with Ms. Karpen. she found the Agreement for Discharge of Environmental Liens (dated 10/12/2006) in her file. she will review available documents to see if any consent order or STIP signed for cleanup work. informed her about a meeting requested by RP. she mentioned that she needs to review the entire file and the work plan/documents, that will be submitted by RP, before any meeting with RP. she requested copy of work plan/documents, once submitted. 05/31/12-Hiralkumar Patel. discussed with DEC Austin and DEC Vought. Austin required submission of following documents: - work plan for tanks removal including community air monitoring plan and health and safety plan - submission of MOSF application for tanks closure - copy of NYC DOB's work permit for tanks removal - documentation about notification to FDNY 1:52 PM:- received email from Bill. he mentioned that the site owner has a prospective tenant who would rent part of the space (starting in two weeks), but currently, access to the area being rented is blocked by physical obstacles on the ground. Bill asked if they can move stockpiled soil to other part of the site and remove already cut-up steel off-site. discussed with DEC Austin. Austin approved to move soil and metal to other part of the site, but no off-site disposal without approval of the work plan. 2:25 PM:- spoke with Bill and informed him that the department approves moving of stockpiled soil and cut-up steel to other part of the site, but does not approve off-site disposal of any material until all required documents submitted and approved. asked him to send property owner's contact info. asked Bill about well monitoring. Bill mentioned that wells were lastly checked in 2009 before scaffolding removed. after removing scaffolding, most of the wells are covered under dirt/metal and are not accessible. asked Bill about DOB work permit. he believes that permit is not needed for tank removal. asked him to check with NYC DOB regarding required work permit. 06/01/12-Hiralkumar Patel. 2:01 PM:- received email from Bill including property owner's contact info. English Kills Ventures LLC c/o Asher Zwebner, Trustee 5014 16th Avenue, Suite 110 Brooklyn, NY 11219 6:15 PM:- sent email to Bill and asked to provide owner's phone number and email address. 06/05/12-Hiralkumar Patel. 11:08 AM:- received email from Bill. he

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mentioned that property owner asked to send documents to their attorney. Robert H. Feller, Esq. **property owner's attorney** Bond, Schoeneck & King, PLLC. 111 Washington Avenue Albany, NY 12210-2211 Ph. (518) 533-3222 Fax (518) 533-3299 email: rfeller@bsk.com 1:44 PM:- received email from Bill. due to open tank excavation pit, he requested to backfill it using on-site stockpiled soil. 2:33 PM:- forwarded Bill's email to DEC Austin for review. 6/6/12-Vought-DEC Patel received email from GeoQuest (Bill Hughes Ph:860-243-1757 Cell:860-402-5292) that When you closed down the site on Wednesday (5-30-12) you may not have realized that a dangerous condition resulted - an open pit. Granted, the work area is theoretically closed to any and all persons and/or vehicles, but we all know that stuff happens. In addition, the open pit is subject to flooding which could result in a multitude of unforeseeable problems including exacerbating the danger of this site condition.We propose the following solution: 1) Continue the removal of the steel bottom of the tank (at the very least) and store the steel on-site. The next level of action would be to also remove the steel back wall (south wall), remaining steel west wall (only about 30% still remains), and remove the remainder of the north wall (storing all removed steel on-site, of course). 2) Back-fill the open pit with the on-site soil as you and I discussed. The on-site soil is fill removed from the tank top and walls which exhibits no sign of any contamination. The backfilling of this area would eliminate a very dangerous situation. 3) Consider allowing the stored steel to be removed from the site. It could be used to pay for the rental equipment. Steel is steel- it is not a source of contamination. 4) Consider the power of inertia- the longer a project remains stalled, the harder it is to get it moving again. Regards. DEC Patel forwarded email to RSE with request for advisement and RSE forwarded mail to DEC Vought asking to look into matter. Vought called and spoke to Geoquest who noted that tanks bottoms were approximately 5-6'below grade on concrete and close to groundwater. Geoquest also noted that the concrete under the tanks was at groundwater level. Vought after concurring with DEC Farrar called back Geoquest and noted that backfilled soils must meet STARS Memo #1 parameters. Vought also called and spoke to NYCOEM McIntyre who noted that site is not in a NYC Program and as such there are to date no institutional or engineering controls for site but that if applicants are interested in alternate SCOs associated with a different program then they should call NYCOER Chawla. Vought spoke to DEC Patel who noted that when he was onsite last week he also noted to contractor that wells will need to be installed at the tank locations through the concrete. Vought to meet Hughes on site at 1pm today and required that: 1)samples be collected from the soil pile analyzied for Full List 8260/8270 (due to history of chlorinated solvents) 2)note that wells will be required in the future in the backfilled areas 3)Submission of analyticals to DEC for review prior to use as backfill. Vought received callback from Hughes who noted that site was zoned M-1(manufacturing). Vought performed site visit and received call from Hughes who noted that his car broke down in Brooklyn and he will not be able to make it to site but will arrange to have sampling company come to site and collect sam[ple. Vought repeated that sample must be collected for 8260/8270 Full List and compared to STARS Memo#1 values. Vought observed approximately 2O' high by 70' long pile of soil up against large MOSF tank but noted no petroleum odors or staining in pile. Vought also observed standing water in open tank pit and water was connected to soil as west wall

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of UST removed down to tank bottom. No sheen or product in water in tank pit. Bottom of tank pit composed of concrete pad and steel(of which is scheduled to be removed). Vought met English Kills (Arthur Schwartz Ph:732-309-2063) onsite and discussed tank removal and future use of site (which may be parking lot for buses) as well as need for installation of wells at tank location through concrete pad as per DEC Patel. Vought also observed approximately 6' width of soil between steel tank and outer support wall with no staining as well. Note soil pile covering many monitoring wells. Rush turnaround time will be requested for soil samples as well. Vought sent email update to Kumar. 6/7/12-Vought-Received message from Hughes and returned call and left message to return call with confirmation of sample collection. Vought received callback from Hughes who was enroute to site to perform soil sampling of proposed soils for backfill (EPA 8260/8270 Full List) due to former presence of chlorinated solvents as well as petroleum in tank. Results to be compared to STARS Alternative Guidance values and examined for possible Haz Waste contaminants as well. Results should be received and Hughes will follow up with Vought on Friday. 06/12/12-Hiralkumar Patel. 11:58 AM:- received email from Bill including sample results. three samples were collected. some SVOCs found in samples. found maximum 460 ppb of Naphthalene in one sample. Bill requested approval to backfill the excavation. DEC Austin and DEC Vought inspected site. based on observations during the site inspection, Austin mentioned that the department does not approve backfilling of the tank excavation. he asked for a meeting in DEC office, with property owner. 2:36 PM:- spoke with Bill and informed him about the discussion with DEC Austin. asked him to set up meeting with property owner. 4:25 PM:- sent email to Bill. informed him that the department does not approve backfilling of the excavation. informed him that the department requests a meeting with property owner. asked him to provide timing for the meeting. email copied to DEC Vought, DEC Austin, Judy Karpen, Jay Soltis (jsoltis@geoquestinc.com) and Marc Casslar (mcasslar@geoquestinc.com). 06/14/12-Hiralkumar Patel. 11:51 AM:- received email from Bill. he mentioned that him, Marc Casslar (GeoQuest) and Robert Feller (owner's attorney) will meet at 10 AM on 06/20/12, in DEC office. spoke with DEC Austin. he requested presence of property owner. he mentioned that if owner brings his attorney, then DEC attorney will be present in the meeting and it will be an enforcment issue. 2:32 PM:- spoke with Bill and informed him about discussion with DEC Austin. Bill asked to reply by email. 06/18/12-Hiralkumar Patel. discussed with DEC Vouth, DEC Austin and Judith Karpen. Ms. Karpen is still reviewing legal documents. as the legal review is pending, Austin mentioned that the meeting on 06/20/12 will be to discuss technical issues only. 3:31 PM:- sent email to Bill including meeting agenda. informed him that this meeting will be for technical discussion only. email copied to DEC Austin, DEC Vought, Judy Karpen, Jay Soltis and Marc Casslar. 06/20/12-Hiralkumar Patel. 10:00 AM:- discussed with DEC Austin, DEC Vought, Bill, Marc Casslar, Robert Feller and Ryan Karben during meeting in DEC office and agreed upon following: - notification to NYC DOB and FDNY (if applicable) - submission of MOSF application for tanks removal - monitoring of bulkhead during low tide for possible oil seepage into the creek and installation of boom, if product seepage noted - submission of tank removal plan, including health and safety plan and CAMP, by the end of 07/16/12 - subsurface soil and groundwater investigation, at and around the tanks location during

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discussion, Bill mentioned that removal of remaining tanks would take another 6-8 months and subsurface investigation will be peformed after that. informed RP that the department requires delineation under the tank pads, via installation of wells through the pads. also, the department may require replacement of wells, if existing wells are destroyed or clogged. during discussion, Austin approved to use on-site stockpiled soil to backfill the tank excavation and RP agreed that depends on future site use, backfilled soil may be removed during future development. asked RP to submit MOSF application for tanks removal. Ryan Scott Karben, Esq. **owner's representative** Law Office of Ryan Scott Karben 11 Tara Drive Pomona, NY 10970 Ph. (914) 536-4402 email: ryan@ryankarben.com 1:01 PM:- spoke with Judy. she mentioned that due to statue of limitation, she can not enforce for money spent more than 6 years ago. also, there is no dicussion about spill remediation in the Agreement for Discharge of Environmental Liens signed by RCC & York Associates, Inc. in 2006. she also mentioned that bankruptcy court has found environmental liens be not valid. 06/29/12-Hiralkumar Patel. 3:50 PM:- spoke with Bill and informed him that a STIP agreement will be mailed today. 4:06 PM:- sent STIP letter to Mr. Feller. informed him that the signed STIP and a tank removal plan (including schedule) must be submitted by the end of 07/27/12. letter emailed to Mr. Feller, DEC Austin, DEC Urda, Ms. Karpen, Bill, Mr. Casslar and Mr. Karben. 07/05/12-Hiralkumar Patel. 12:14 PM:- received email from Bill including MOSF notification, tank removal plan and health & safety plan (including CAMP). 1:02 PM:- sent email to Bill. informed him that a signed stipulation must be submitted to the Department prior to review of any work plans. email copied to DEC Austin, DEC Urda, Ms. Karpen, Mr. Felller, Mr. Casslar and Mr. Karben. 07/12/12-Hiralkumar Patel. received email from Mr. Casslar (at 6:11 PM on 07/11/12) including revised STIP and CAP. Mr. Casslar noted following nine reasons for changes in STIP and CAP: - the spill occurred in 1992, more than 20 years ago - the oil terminal has been closed for almost 20 years - all of the tanks were emptied, cleaned, and inspected more than 18 years ago - active remediation of groundwater was conducted for about 8 years - NYSDEC concluded almost 8 years ago that no further benefit could be achieved from active groundwater remediation - all of the work was conducted under the supervision of the NYSDEC - no new spills have occurred since the facility was closed - the site has been used and occupied at various times in the last 20 years and there is no indication that a risk to human health or safety exists; and - throughout time the importance of removing the tanks has been continuously discussed 07/18/12-Hiralkumar Patel. discussed with DEC Austin, DEC Vought, DEC Urda and Ms. Karpen. Ms. Karpen will discuss with Patrick Hallaway in AG's office to discuss about third party claim to the spill fund by the property owner. discussed submitted revised CAP and changed as needed. Urda will revised the CAP after gets update from Ms. Karpen. 07/31/12-Hiralkumar Patel. visited site. found water in tank excavation area. some sheen observed on water. 3:23 PM:- received email from Ms. Karpen inquiring if English Kills had a Phase I done prior to purchasing the property. 08/01/12-Hiralkumar Patel. 4:43 PM:- sent email to Ms. Karpen. informed her that the department does not have any Phase I report in file and doesn't know if English Kills ever conducted Phase I investigation. 08/03/12-Hiralkumar Patel. received call from DEC Urda. he will arrange a conference call with AG's office and spill fund. 08/07/12-Hiralkumar Patel. yesterday

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(08/06/12), DEC Austin, DEC Vought, DEC Urda, DEC Ben Conlon, Ms. Karpen (AG's office), Bonnie Riggi (AG's office), Luzette Baker (spill fund) and Patrick Halloway (spill fund) discussed the case and decided to send a consent order. spoke with DEC Urda. he has asked DEC Leszek to review available MOSF documents and waiting for his response before drafting response to the revised STIP sent by RP. 3:48 PM:- spoke with DEC Ian Beilby who inquired about spill # 1202045, which was reported by BCP contractor as they noticed some sheen in water near the site. informed Ian that no sheen observed during the site visit on 05/31/12 and based on site observation, case 1202045 is closed. during conversation, Ian mentioned that they have meeting with EPA on 08/09/12 regarding Newtown Creek cleanup project and will discuss about possible impact to the creek from the Morgan Terminal. asked Ian to update after meeting. 08/13/12-Hiralkumar Patel. 3:33 PM:- received call from DEC Beilby. he mentioned that EPA and respondent's consultant (Anchor QEA) are considering sending a letter (104E request) to English Kills Ventures LLC requiring to submit all investigation/compliance documents for review. 08/14/12-Hiralkumar Patel. 2:47 PM:- received email from DEC Beilby. he will send CD of available documents to AnchorQEA. 08/14/12-Ian Beilby CD with edoc files sent to AnchorQEA for review and possible 104e request. 08/16/12-Hiralkumar Patel. 12:38 PM:- received email from DEC Michele Albert including copy of cover letter that was sent to Anchor QEA (with document CD). 09/06/12-Hiralkumar Patel. reviewed tank removal plan, submitted previously on 07/05/12. abstract of tank removal plan: - fill material removed from the top and sides of the tank will be assigned to one of two piles - if soil appears normal with no dark stains or odor it will be placed onto a clean pile - if soil has dark stains or odor or if it registers on a PID meter it will be placed onto a dirty pile and be stored on and under plastic for sampling, laboratory analysis and eventually off-site disposal - when half of the bottom plate has been removed, the excavation resulting from the tank removal will be partially backfilled to allow the excavator to move into the tnak area to reach the remainder of the bottom plate and the tank back wall - upon completion of the removal of each tank section, the excavation for that tank section will be backfilled and compacted to grade - use of previously excavated clean fill from the on-site clean pile is done with the understanding that in the future, this fill may have to be sampled and/or remediated the tank removal plan does not discuss about endpoint sampling. 10/23/12-Hiralkumar Patel. received email from DEC Urda (at 10:39 AM on 10/17/12) including copy of email from Mr. Feller. Mr. Feller sent signed copy of the consent order. as per the Corrective Action Plan of the Consent Order, the Department must be notified two days prior to backfilling of any part of the excavation and the Department may require collection of endpoint soil and groundwater samples. waiting for copy of fully executed Consent Order. 11/13/12-Hiralkumar Patel. 11:46 AM:- received email from DEC Urda including fully-executed order. 11/29/12-Hiralkumar Patel. 4:07 PM:- spoke with Bill. they started work about 2-3 days ago. 12/05/12-Hiralkumar Patel. 2:55 PM:- visited site. crew was working in tank pit, cutting angle brackets to the south wall of tank. no structural supports were observed to the south wall. also noted that the tank pit was partially backfilled, without prior notification to the department as required in signed consent order. 3:25 PM:- left message for Bill and asked him to ensure worker's safety. 3:50 PM:- sent email to Bill regarding operation at the site. asked him to

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ensure safe operation. email copied to DEC Urda and Mr. Feller. 12/06/12-Hiralkumar Patel. 11:08 AM:- received email from Bill. he has spoke with Jacques and was informed that there is still a piece of the bottom plate attached to the south wall as well as the eastern end wall and the angle brackets are for tank stiffness, and are not for structural integrity. 2:16 PM:- spoke with Bill regarding partial backfilling of excavation without prior notice to the department. he mentioned that the excavation was partially backfilled so a backhoe can be used for further work. he mentioned that soil in tank excavation pit will be tested as part of investigation after tank removal and removed, if found contaminated. 12/10/12-Hiralkumar Patel. received email from Bill (at 4:18 PM on 12/09/12). he mentioned that when remedial investigation work plan is submitted, the soil in the area occupied by the tanks will be addressed along with the soils on the remainder of the property. 01/22/13-Hiralkumar Patel. 9:00 AM:- visited site. first section of the tank is removed completely and area has been backfilled to grade. no crew was on-site. 03/20/13-Hiralkumar Patel. 10:45 AM:- visited site. crew was removing the tank. the site is divided in two sections: section towards Morgan Ave is occupied by buses and section towards the water is occupied by construction equipments. 05/04/13-Hiralkumar Patel. another spill reported at the site (spill #: 1301162) by FDNY as fire occurred in tank pit during tank removal. 1:30 PM:- visited site. FDNY had left. met with Jacques Guillet, site supervisor. he mentioned that due to very hot weather, some of the left over oil got vaporized and flash fire occurred. FDNY extinguished the fire and stopped work until they get fitness certificate. FDNY issued violation order (# A181083). Mr. Guillet mentioned that work will resume only after necessary documents submitted to FDNY. inspected tank pit. only eastern section of last tank left. found burned steel in tank pit. no odors noted. as per Mr. Guillet, no one was injured. 05/06/13-Hiralkumar Patel. 9:17 AM:- DEC Urda forwarded email from Mr. Feller (dated 05/02/13). Mr. Feller mentioned that tank removal report will be submitted by 05/31/13, as approved by DEC. 05/24/13-Hiralkumar Patel. 11:03 AM:- received call from Bill. he inquired about document from previous contractors regarding cleaning of tanks. 11:10 AM:- sent email to Bill including copy of report from Winston Contracting dated 02/25/1995. 05/31/13-Hiralkumar Patel. 10:42 AM:- received email from Bill including tank removal report. abstract: - two tanks (# 6 and 7) in eastern tank complex - five tanks (# 1 through 5) in southern tank complex - tanks were fabricated on the site from individual steel plates with welded seams - tank structures were supported with internal steel angle brackets welded into a rigid pattern - soil was placed on the exterior of the tanks to create bunders , and appeared to consist of the same fill-type materials underlying the property - both the eastern (with two tanks # 6 and 7) and southern (with five tanks # 1 through 5) tank complexes were constructed approx. 4 ft bg - on-site soil, including bunkering material, was utilized to backfill the excavations - during the remvoal of the tank bottom plates, small quantities of free product were occasionally observed on groundwater - when encountered, the oil was collected using oil absorbent material - total of 835.84 tons of soil, from removal of eastern tanks, transported in Mar. 2012 - total of 1,696.63 tons of soil, from removal of southern tanks, transported in Aug. 2012 2:18 PM:- tank removal report forwarded to Ms. Karpen. 2:22 PM:- sent email to Bill and asked to submit remedial investigation work plan and tank

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registration forms as per item # 5 and 6 of the correction action plan of the signed consent order. email copied to DEC Urda, Ms. Karpen, Mr. Casslar, Mr. Feller and Mr. Karben. 05/31/13-Hiralkumar Patel. 2:57 PM:- received email from Bill. he inquired if tank removal report is accepted. he mentioned that investigation work plan will be submitted within 30 days of acceptance of the tank removal report. he also mentioned that required tank registration forms will be submitted upon approval of the remedial investigation work plan. 06/04/13-Hiralkumar Patel. discussed with DEC Leszek regarding submission of MOSF/PBS forms. he mentioned that required tank registration forms should be submitted now to correct the tank status. 06/05/13-Hiralkumar Patel. 3:02 PM:- sent email to Bill. informed him that the tank removal report is accepted. informed him that as per the signed consent order, a remedial investigation work plan is due within 30 days of submission of the tank removal report. asked him to submit the work plan on or before June 30, 2013. also asked him to submit required tank registration forms now instead of waiting for work plan approval. email copied to DEC Urda, Ms. Karpen, Mr. Casslar, Mr. Feller and Mr. Karben. 06/20/13-Hiralkumar Patel. 11:41 AM:- received email from Bill including PBS/MOSF applications. 06/25/13-Hiralkumar Patel. discussed with DEC Leszek about PBS/MOSF forms. he mentioned that hard copy must be submitted with original signature. 12:56 PM:- sent email to Bill and asked him to submit hard copy of required PBS/MOSF forms with original signature. 06/28/13-Hiralkumar Patel. received signed hard copy of PBS/MOSF forms. gave forms to DEC Leszek for review and processing. 07/01/13-Hiralkumar Patel. received email from Marc Casslar from GeoQuest including Remedial Investigation Work Plan. abstract: - total of 12 soil borings wil be advanced to the base concrete slab of the former southern tank complex - for the eastern tank complex, a total of 8 soil borings will be advanced to the base concrete slab - 2 of the borings in each complex will be advanced through the slab to a total depth of 12 ft bg - soil with the highest PID readings or the most visual or olfactory contamination will be collected for lab analysis - soil samples will be analyzed for DRO, VOCs by 8260B and PAHs by 8270 - five (5) additional borings will be developed as 1 inch monitoring wells, with 5 ft of screen and sufficient riser, in the vicinity of the former tanks - work can commence within 90 to 120 days after the acceptance of this work plan - report should be completed within 180 days after commencement work the proposed work plan is not acceptable for following reasons: - it proposes to begin work within 90 to 120 days after the acceptance of the work plan. the department requires that investigation work must begin within 45 days of work plan approval - it propose to submit report within 180 days after commencement of work. the department requires that Remedial Investigation Report must be submitted within 120 days of work plan - a scaled site map must be submitted including all previous boring/well locations and location of proposed borings/wells - it proposes installation of 1 inch well with 5 ft screen. work plan does not specify minimum depth of proposed wells. the proposed wells must be at least 2 inch in diameter and must be installed to minimum depth of 12 ft bg with 10 ft of screen - all existing monitoring wells must be gauged and sampled 10:26 AM:- spoke with Marc at GeoQuest. asked him to submit revised work plan with following changes: - investigation work must begin within 45 days of department’s approval (instead of within 90 to 120 days) - Remedial Investigation Report must be submitted within 120 days of department’s approval (instead

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of 180 days after commencement of work) - revised scaled site map including all previous boring/well locations, alongwith location of proposed borings/wells - wells must be at least 2 inch in diameter and must be installed to minimum depth of 12 ft bg with 10 ft of screen - gauging/sampling of all existing monitoring wells Marc mentioned that site access may be issue for field work. informed him that the site is being used as parking lot, occupied by buses which can be moved for field work. Marc mentioned that Bill is out of office till next week and will submit revised work plan upon his arrival. 3:40 PM:- received message from Sam Levin, attorney for property owner. Sam Levin Ph. (347) 564-3597 07/02/13-Hiralkumar Patel. 1:16 PM:- spoke with Mr. Levin. he inquired about insurance carrier of previous property owners. informed him that no such information seen in file. suggested him to review available files. he will talk to Bill. 07/19/13-Hiralkumar Patel. 4:12 PM:- received email from Bill including work plan, with changes in work schedule only. but no changes about well diameter or depth. 08/02/13-Hiralkumar Patel. Bill proposed to install total 20 soil borings to the base concrete slab in former two tank fields, but soil above concrete bases are basically on-site backfill soil which was removed from around the tanks during tank removal. as such there is no need to sample this soil again. instead deeper and larger diameter monitoring wells are needed at the source area. 1:26 PM:- spoke with Bill. informed him that the department requires minimum 4-inch wells at former tank locations, to a minimum depth of 12 ft bg with 10 ft of screen. asked him to submit revised work plan. Bill asked to send email with comments on work plan. 08/06/13-Hiralkumar Patel. discussed with DEC Vought. as stated in signed consent order, complete delineation (on- and off-site) is required. 11:12 AM:- spoke with Bill. informed him that the department requires complete delineation of contamination, which includes impact to off-site also. asked him to submit revised work plan including off-site delineation. strongly suggested him to locate previous monitoring wells and sample existing wells prior to finalizing the work plan. Bill asked for written note about the requirements. 1:52 PM:- sent email to Bill. informed him that as per the signed consent order, the department requires complete delineation of contamination. asked him to submit a revised RIWP, by the end of 09/13/13, including on- and off-site delineation. suggested him to locate and sample existing wells prior to finalizing the RIWP. email copied to DEC Urda, Mr. Feller, Jay Soltis (jsoltis@geoquestinc.com) and ekvllc@gmail.com. 08/20/13-Hiralkumar Patel. 4:35 PM:- received message from Bill. 08/21/13-Hiralkumar Patel. 12:42 PM:- left message for Bill. 08/22/13-Hiralkumar Patel. 11:29 AM:- received message from Bill. 08/26/13-Hiralkumar Patel. 12:52 PM:- spoke with Bill. he inquired about reason for 4 inch well. informed him that 4 inch wells are preferred in case product recovery or other remediation needed. he mentioned that as there was not much oil found on concrete pad during tanks removal, property owner wants to install 2 inch well. informed him that its ok to install 2 inch well now, but the department may require to install larger diameter well based on investigation results. he agreed to it. Bill will submit work plan by first week of Sept. 2013. 09/13/13-Hiralkumar Patel. 2:05 PM:- received email from DEC Beilby. he mentioned that EPA will visit site on 09/18/13 to determine whether there are any likely on-site point source discharges to Newtown Creek. 10/03/13-Hiralkumar Patel. 12:19 PM:- received email from DEC Beilby. Anchor QEA indicated that the morgan

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oil terminal would not likely be targeted for sampling because of a lack of discharge. 10/29/13-Hiralkumar Patel. received email from Bill (at 2:02 PM on 10/28/13) including a revised work plan. Bill proposes to install total of twenty (20) soil borings to the base concrete slab of the former tank complexes. two borings will be advanced to 12 ft bg. three (3) 2-inch wells will be installed to 15 ft depth, with 10 ft of screen. Bill also proposes to sample seven (7) existing wells. the submitted work plan does not include information about number of wells available at the site and it only proposes to investigate soils and groundwater in the footprint and vicinity of the former tank complexes. 11/14/13-Hiralkumar Patel. 2:55 PM:- spoke with Bill. discussed about existing wells and complete delineation. Bill mentioned that they found total 12 wells. out of 12 wells, product found in 5 of the existing wells. asked Bill to submit a revised work plan including site map with location of all existing wells and information about product in existing wells. informed him that further delineation may be requuired, based on investigation results. 3:17 PM:- sent email to Bill and asked to submit a revised work plan. 11/26/13-Hiralkumar Patel. received email from Bill (at 4:14 PM on 11/20/13) including work plan with revised site map including location of wells where free product found. 12/20/13-Hiralkumar Patel. 11:30 AM:- sent letter to property owner approving work plan, pending inclusion of immediate gauging of wells to determine product thickness, installation of absorbent socks in impacted wells and weekly monitoring/removal of product from wells. asked owner to submit monthly records of well gauging/product removal activities and investigation report by the end of 06/30/2014. letter emailed to Bill, DEC Urda and Mr. Feller. 01/08/14-Hiralkumar Patel. DEC Peter Malaty (Fish, Wildlife and Marine Resources) visited site earlier today to inspect bulkhead at the site. during inspection, he noted spill of unknown amount of motor fuel onto the soil, from one of the parked bus at the site. he sent pictures taken during the site visit. 11:28 AM:- left message for Bill and informed him about unreported spill, from a bus, at the site. asked him to call back with bus company's information. informed him that the department requires reporting of this spill incident and cleanup of spilled material. 11:36 AM:- sent email to Bill including pictures received from DEC Peter. informed Bill that the department requires reporting of this spill incident and immediate cleanup. also asked him to provide bus company's information. 01/10/14-Hiralkumar Patel. 12:28 PM:- received call from Bill. discussed about unreported spill under the parked bus. he will ask bus owner/operator to report the spill. Bill mentioned that spill was cleaned up. spoke with Bill about installation of absorbent socks in well and removing product. he mentioned that no work has been done yet and they believe that installing absorbent socks in wells would not do any benefit. asked Bill to submit written reply to the requirement of well gauging/product removal as listed in letter dated 12/20/13. 03/10/14-Hiralkumar Patel. 10:43 AM:- received email from Bill including addendum to remedial investigation work plan dated 10/18/13. Bill proposed to install an appropriate absorbent sock , as soon as practical, into each of the contaminated wells and weekly checking and repalcement of these socks. specific work schedule is missing in the addendum. 04/23/14-Hiralkumar Patel. 1:33 PM:- left message for Bill. 06/02/14-Hiralkumar Patel. 4:48 PM:- received email from Bill including a letter including summary of interim remedial measures. on 05/14/14, GeoQuest gauged wells previously reported to

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contain LNAPL (MW-14, MW-15, MW-28A, MW-34 and MW-40) and installed absorbent socks. they visited site again on 05/21/14 and replaced the absorbent socks. found product in all five wells during both visits. product thickness (in ft): ---------05/14/14-----05/21/14 MW-14------0.90---------0.72 MW-15-----0.001--------0.001 MW-28A----0.001--------0.001 MW-34------6.20---------0.01 MW-40------1.50---------0.45 absorbent sock weight difference (in oz) on 05/21/14: ---------weight diff. MW-14------25.8 MW-15-------3.0 MW-28A------1.1 MW-34------11.0 MW-40------47.7 06/23/14-Hiralkumar Patel. 3:44 PM:- received email from Bill including a letter including summary of interim remedial measures. on 06/11/14, GeoQuest gauged wells with the installed absorbent socks. a previously obstructed well (MW-12) has been available and installed absorbent sock in it. previously reported to contain LNAPL (MW-14, MW-15, MW-28A, MW-34 and MW-40) and installed absorbent socks. they visited site again on 05/21/14 and replaced the absorbent socks. found product in all five wells during both visits. product thickness (in ft): ---------06/11/14 MW-12------0.001 MW-14------0.001 MW-15------0.001 MW-34------0.001 MW-40------0.001 absorbent sock weight difference (in oz) on 06/11/14: ---------weight diff. MW-14------35.6 MW-15-------5.1 MW-28A------2.0 MW-34-------4.2 MW-40------42.5 10/28/14-Hiralkumar Patel. 11:24 AM:- received email from Bill including remedial investigation report. abstract: - on 06/09/14, installed 20 soil borings in the area under and around the former bulk storage tanks - twelve (12) soil borings (B-1 through B-12) were advanced to a depth of 5 ft within the footprint of the former southern tank complex, six (6) soil borings (E-1 through E-6) were advanced to a depth of five ft within the footprint of the former eastern tank complex, and two borings (B-13 and B-14) were advanced to a depth of 15 ft bg along the north side of the southern tank complex - ten soil samples were submitted for lab analysis - on 06/10/14, three (3) 2-inch monitoring wells, with ten (10) ft of screen, were installed to a depth of fifteen (15) ft bg - total of ten monitoring wells were sampled for analysis: seven existing wells (FN-19, FN-20, FN-22, FN-28A, FN-31, FN-35 and FN-39) and three new wells (GQ-41, GQ-42 and GQ-43) - boring logs shows the predominant material encountered in the footprint of each tank complex was: brown, dark brown or black sand with silt or sand, silt, and clay, with a variety of crushed materials: asphalt, brick, pieces of concrete, stone, coal, plus ceraimc, glass, metal, wood and paper - groundwater was encountered at 3.5 ft bg in boring B-13 and B-14 - direction of groundwater flow across the site 'would be expected' to be predominantly west to east and from south to north ---------- - the exception is on the southern side of the former Southern tank complex where it is believed that the 17 ft high bunkering wall filled with permeable fill, has influenced the local flow direction, forcing a reported southeasterly flow direction ---------- - very minor VOCs detection noted in few samples - SVOCs were detected in all soil samples (backfill material found in soil borings) - using absorbent socks in wells with product, a total of 1.5 gal of product has been removed to-date - there are at least two USTs still on-site including a 3,000 to 5,000 gal UST in a vault in the northwest corner of the site and a 1,000 gal heating oil tank on the south side of the terminal buiding - recommends removal of remaining tanks and continuation of interim-remedial measures (product recovery using absorbent socks in wells with product) the report is missing site map with location of existing tanks and well

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FN-28A. 11/04/14-Hiralkumar Patel. 8:57 AM:- sent email to Bill. asked him to submit site map with location of existing tanks and well FN-28A. also asked him to submit records of interim remedial measures as per the department's letter dated 12/20/13 (copy attached in email). email copied to Aaron Abraham (aarbenabe@yahoo.com), Marc Casslar (mcasslar@geoquestinc.com), Jay Soltis (jsoltis@geoquestinc.com) and lepmanagement89@gmail.com. 11/06/14-Hiralkumar Patel. 2:14 PM:- received email from Bill including site map with location of existing tanks and well FN-28A. Bill mentioned that location of FN-28/FN-28A is uncertain. according to well location maps available to GeoQuest, there should be two wells close together off of the eastern end of the office buildiing, labeled FN-28 and FN-28A, but when GeoQuest did the well usability survey in September 2013 they could only locate one well. Bill will refer this well from now on as FN-28A. 11/10/14-Hrialkumar Patel. 9:15 AM:- received email from Bill including well monitoring data table, which was previously submitted in June. 10:22 AM:- sent email to Bill and asked him to submit interim remedial measure record from June to Nov. email copied to lepmanagement89@gmail.com, Mr. Abraham, Mr. Casslar, Mr. Soltis. 12/24/14-Hiralkumar Patel. 12:08 PM:- received email from Bill: My apologies, there have been no sock exchanges since our last report. We initiated the Interim Remedial Measures (IRM) and made our first report, but, while the initial levels were high, the levels dropped quickly to near zero floating product and we wanted to wait a bit to see if the levels would rebound and by how much. We just completed another round and it appears that the levels, for the most part, have remained low except for one well- FN-40, which still shows some floating product. We were unable to access FN-34 for this round of sampling. absorbent sock weight difference (in oz) on 11/11/14: ---------weight diff. MW-12-------7.5 MW-14------38.5 MW-15------29.0 MW-28A------8.8 MW-40------54.8 01/21/15-Hiralkumar Patel. 8:57 AM:- left message for Bill inquiring update about recommended tank removal. 01/28/15-Hiralkumar Patel. 3:03 PM:- received call from Bill. asked him about status on recommended tank removal. he mentioned that they are waiting for approval from DEC on investigation report. he also mentioned that owner is planning to use the site as it is and there is no redevelopment plan at this time. 07/10/15-Hiralkumar Patel. received email from Paul McGaha (at 6:02 PM on 06/22/15) from McGaha Consulting including well gauging record. Mr. McGaha was recently contracted to assist with project. he inspected site on 06/12/15 and gauged seven existing wells (MW-12, MW-14, MW-15, MW-28A, MW-34, MW-39 and MW-40). 2.35 ft of floating product was noted in well MW-15. absorbent socks with weight difference were found in wells MW-12, MW-28A and MW-40. Paul McGaha McGaha Consulting, Inc. Ph. (908) 285-1207 Fax (888) 680-2762 email: paul.mcgaha@mcgahaconsulting.com Mr. McGaha mentioned that responsible parties will be initiating a remedial action at the property upon approval of the remedial investigation report (dated Sep. 2014 and submitted on 10/28/14). in that report, GeoQuest recommended removal of two USTs and continuation of interim remedial measure program. 09/02/15-Hiralkumar Patel. 1:39 PM:- spoke with Mr. McGaha. informed him that property owner has failed to comply with a requirement of weekly well gauging and monthly submission of well gauging report. Mr. McGaha recommended use of a more active remedial method instead of absorbent socks. asked him to submit a written plan for review. 2:38 PM:- sent email to Mr. McGaha and asked to submit

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written plan for alternative remedial method. email copied to LEP Management (lepmanagement89@gmail.com). 12/11/15-Hiralkumar Patel. a new spill report (# 1509305) received from a member of Newton Creek Alliance. spill report was filed due to oil slick and heavy sheen noted in creek adjacent to the subject site. 3:35 PM:- spoke with Mr. McGaha. he mentioned that this afternoon, he was informed about sheen along side of the property but doesn't think it came from the site. they will install absorbent booms in the creek. 4:10 PM:- inspected site. no sheen noted on water in the creek. 4:36 PM:- spoke with Mr. McGaha. informed him about observations during the site visit. he mentioned that booms will be installed this weekend. 12/14/15-Hiralkumar Patel. 7:52 AM:- left message for Mr. McGaha. 11:15 AM:- received email from Mr. McGaha including some pics. he mentioned that booms were deployed early Saturday morning. residual sheen was present on the water, therefore, the booms were allowed to cross the waterway closer to the boats docked in the inlet, and pulled back to their current position to collect the floating material causing the sheen. a security camera has been focused on the area to monitor the conditions. Mr. McGaha submitted pics from security camera. pics taken on 12/12/15 at 9:13 am, 10:27 am, 11:45 am, 12:02 pm, 1:03 pm, 2:10 pm, 3:15 pm, and 4:35 pm. Paul mentioned that the condition will continue to be monitored and the boom will not be removed until the condition is no longer present. pics show sheen on water. 11:23 AM:- received email from Mr. McGaha including interim remedial measure report. abstract: - report included well gauging data since May 2014 - since May 2014, wells FN-12, FN-14, FN-15, FN-28A and FN-40 were gauged on 05/14/14, 05/21/14, 06/11/14, 12/11/14, 06/12/15 and 09/21/15 - well FN-39 was also gauged during 06/12/15 and 09/21/15 events - absorbent socks have been used to collect LNAPL in wells exhibiting floating product - based on available data, groundwater elevations fluctuate between 1.32 ft above mean sea level at FN-12 in Dec. 2014 to 8.88 ft above mean sea level at FN-34 in May 2014 - total of 3.38 gal of oil have been collected using the absorbent socks since May 2014 - weight of oil was converted to gallons using the specific gravity of #6 fuel oil - site has acquired equipment capable of pumping LNAPL from the groundwater table during liquid product recovery events - based on product recovery amount, Morgan Terminal requests that the frequency of petroleum pumping and absorbent sock removal and replacement be modified to biweekly events. Morgan Terminal also requests that the reporting frequency and submission of Interim Remedial Measures Progress Reports be modified to quarterly reporting product thickness (in ft) in wells:
----------FN-12-----FN-14-----FN-15-----FN-28A-----FN-34-----FN-4
0
05/14/14----------0.90----------6.20------1.
50
05/21/14----------0.72----------0.
45
12/11/14--------1.32------0.02------2.50-------7.00----------0.
40 06/12/15----------2.35
09/21/15--------4.60------0.10------0.20-------0.04------0.23------0.
06 12/15/15-Hiralkumar Patel. received email from Willis (at 4:28 PM on 12/14/15) from Newtown Creek Alliance including pics of the creek showing sheen. Willis went to the site and met property owner and manager. Willis mentioned that property owner, Arthur, made strong claims that no product was migrating off his property and likely

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someone spilled a quart of oil into the water. 8:30 AM:- after discussing with DEC Austin last night, visited site this morning during high tide. minor non-recoverable sheen noted on water in the creek. based on observations during the site visit, it looks like the site has been divided into following four sections: - eastern end of the property (the former eastern tank complex) has been separated from the rest of the site using chain-linked fence. there are sheds on the eastern most part of the site, along the water so could not inspect waterbody from the land - the former southern tank complex area is now occupied by a lumber yard - the remaining area of the site between the creek and the former tank complex (southern tank complex) is used as a parking lot occupied by a private bus company - the northwest corner of the site (former maintenance building), immediately west of the end of the creek, is used as parking lot also noted repaved parking lot around the former maintenance building and a wooden deck along the bulkhead, on east of the former maintenance building. as per available site maps, few monitoring wells were installed around the former maintenance building, including well FN-46 which is along the bulkhead and closest to the point where sheen noted on creek recently. during site visit, there were some vehicles parked on-site and could not see any of the formerly installed monitoring wells around former maintenance building in remaining open area. 9:36 AM:- spoke with Mr. McGaha inquiring about well gauging data. he mentioned that property owner has hired someone who gauge and remove product from the monitoring wells and Paul has prepared report based on data received from property owner. asked Mr. McGaha to send email confirming this activity and including contact information for the person who is gauging wells and removing product. also asked him to schedule gauging of all monitoring wells in presence of DEC personnel. informed him that this may require moving parked vehicles. 2:02 PM:- sent email to Mr. McGaha and asked him to submit - an email (or a letter) confirming his involvement in the project (active field duties vs report preparation/submission based on information collected/submitted by others) - contact name and number for the person/contractor who is gauging on-site wells and recovering product - photographs from the security camera at every hour beginning at 5 PM on 12/12/2015 email copied to DEC Austin, DEC DeMeo, DEC Urda, LEP Management (lepmanagement89@gmail.com) and Arthur Schwartz (aschwartzesq@optonline.net). reviewed NYC ACRIS record and noted that the site has been sold to new property owner in Mar. 2014. Greenpoint Bushwick LLC. **current property owner** 675 3rd Avenue, 8th Floor New York, NY 10017 2:55 PM:- sent email to Mr. McGaha and asked to submit property owner/manager's contact information. email copied to LEP Management and Arthur Schwartz. 3:02 PM:- spoke with Aaron Cohen, property's leasing manager. he is aware of the issue in the creek. he mentioned that property owner (represented by Robert Feller) is planning to conduct further investigation in this matter. he also mentioned that a local contractor (Newtown Williamsburg) was gauging the wells and recovering product. asked Mr. Cohen to schedule a field work for well gauging and product recovery, in presence of DEC personnel. he agreed to it and will ask Mr. McGaha/well gauging technician to schedule this work, in this week. Mr. Cohen mentioned that project managers from DEC Permit unit were on-site recently regarding bulkhead permit issue. Aaron Cohen **property's leasing manager** LEP Management Ph. (347) 901-9045 email: lepmanagement89@gmail.com 3:36 PM:- received email from Mr. McGaha. he mentioned that McGaha Consulting, Inc. has

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provided consulting services for the property including a site visit to demonstrate the operation of the interface meter and well gauging procedures to the previous on-site technician responsible for collection of well gauging data and just last week a second visit to demonstrate the operation of the interface meter and well gauging procedures to the site's new on-site technician. Mr. McGaha has made recommendations for the improvement of well gauging techniques and have prepared a proposal to deliver a mobile pumping system to remove free product from the wells containing free product using a double diaphragm pump. Mr. McGaha was also requested to prepare a standard Interim Remedial Measures Report submission containing well gauging data that is collected and provided by the property's on-site technician, which was recently provided by email. Mr. McGaha mentioned that the on-site technician responsible for well gauging is Mr. Issac Gut. Isaac Gut **on-site technician for well gauging** Ph. (914) 319-1104 (347) 771-7927 email: gut.isaac@gmail.com 3:38 PM:- received email from Mr. McGaha including photographs from on-site security camera. 3:55 PM:- spoke with Sandra Reyes-Guerra (Regional Environmental Permit). she and Justin Falls (DEC Habitat Protection) were on-site as part of bulkhead repair permit application. Sandra doesn't recall noticing any sheen on water. 12/16/15-Hiralkumar Patel. received email from Mr. McGaha (at 9:58 PM on 12/15/15) confirming field work on 12/18/15. 8:00 AM:- visited site. inspected western end of the creek, along the bulkhead east of the former maintenance building. noted some sheen on water. 8:51 AM:- sent email to Mr. McGaha. informed him about a wooden deck in the area of monitoring well FN-46 which is along the bulkhead and closest to the point where sheen noted in creek recently. asked him to have this deck lifted, if possible, for access during field work on 12/18/15. informed him that a new well may be needed in this area, if accessing existing well is not possible. 12/17/15-Hiralkumar Patel. 8:00 AM:- visited site. found sheen on water near the bulkhead at the end of the creek. re-inspected area around the former maintenance building. found formerly installed monitoring well FN-34. some part of the parking lot has been repaved. reviewed NYC ACRIS record and google maps and noted following: - the former Morgan Terminal site occupied lots 101, 207, 220, 160 and 157 on block 2942 - the creek is divided in two sections: north and south and both sections are part of private property - the northern half section of the creek is part of lot # 105 - the southern half section of the creek is subdivided. the eastern portion of the subdivided creek is actually lot # 157 and the western portion of the subdivided creek is part of lot # 101 - all five morgan terminal lots (101, 207, 220, 160 and 157) were owned by Corpus Christi Resources, LLC. from 10/2007 to 12/2008 - all five morgan terminal lots were owned by English Kills Ventures, LLC. from 12/2008 to 04/2014 - in Apr. 2014, former morgan terminal lots were sold to different entities: * lot 101 to Greenpoint Bushwick LLC. * lot 207 to Bushwick Star Management LLC. * lot 157 to 192 Morgan Realty LLC. * lots 220 and 160 to Morgan Williamburg LLC. owners for all five lots have same address: 675 3rd Avenue, 8th Floor New York, NY 10017 12/18/15-Hiralkumar Patel. 11:30 AM:- visited site. met Steve (McGaha Consulting) and Isaac (owner's representative) and gauged wells FN-12, FN-14, FN-15A, FN-22, FN-28A, FN-34, FN-39 and FN-40. inspected creek and noted some sheen on water. - well FN-34 is located in northwest corner of the site, west of the former maintenance building. no product found on top of the water, but heavy tar like material noted on side of the well casing and at the bottom

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of the well. - well FN-28A is located east of the two-story building. no product noted in this well - wells FN-12, FN-14, FN-15A, FN-22, FN-39 and FN-40 are located in alley (access to 190 Morgan Ave) on south side of the former southern tank complex. - well FN-39 is located on south side of the alley. no product noted in this well - well FN-15A is located north side of the alley (adjacent to former tank complex wall). free phase petroleum product noted in the well. due to product viscosity, water interface was not used to measure thickness. a product sample was collected for fingerprint analysis. - well FN-12 is located on north side of the alley (adjacent to former tank complex wall and east of well FN-15). no product noted in this well. - well FN-40 is located on south side of alley (south of well FN-12). 0.4 ft of product noted in this well, and noted diesel like odors. - well FN-14 is located in middle of alley (southeast of well FN-12 and closest accessible well to 190 Morgan Ave). free phase product noted in the well. due to clogged bottom, could not measure product thickness. product sample collected for fingerprint analysis. diesel like odors noted in the well - well FN-22 is located far south end of the open lot on south side of the property. no product noted in this well 1:46 PM:- spoke with Mr. Cohen and informed him about finding product in wells. asked him to analyze product samples. due to diesel like odors in wells located in the alley, went to site 190 Morgan Ave which is a bus repair facility. met with on-site operator who refused to provide name and number. he provided business email (jbrserviceinc@gmail.com) and allowed access to the repair area for inspection. noted a waste oil tank along south wall of the facility. I left site after this. Steve was going to check two more wells: FN-16 (east of FN-15 and adjacent to former tank complex wall) and FN-19 (at curb on southwest side of the site and at the entrance of the alley) 12/21/15-Hiralkumar Patel. 9:27 AM:- spoke with Mr. McGaha and discussed observations during the site visit. asked him to submit a summary of field activity on 12/18/15. 9:35 AM:- spoke with Mr. Cohen. based on field observations, asked him to immediately remove product from the impacted monitoring wells and conduct weekly well gauging/product recovery, for at least a month. Mr. Cohen inquired about approval of remedial action report submitted in Oct. 2014. informed him that the report recommended removal of two on-site tank systems. after reviewing the report, the department had discussed tank removal activity with consultant at that time and waiting for result of tank removal activities. 12/23/15-Hiralkumar Patel. 8:18 AM:- left message for Mr. McGaha inquiring about status on product removal from impacted wells at the site. 8:20 AM:- left message for Mr. Cohen inquiring about status on product removal from impacted wells at the site. 8:25 AM:- sent email to Mr. Cohen and Mr. McGaha. asked them to submit document confirming removal of free phase product from impacted monitoring wells. 11:10 AM:- spoke with Mr. McGaha. he is going to the site today to deliver the pump system for product removal. he believes that product from the impacted wells will be removed today. asked him to send email, once product removed from the wells. 12/24/15-Hiralkumar Patel. 9:38 AM:- sent email to Mr. Cohen and Mr. McGaha inquiring about document confirming removal of free phase product from the impacted wells. 11:00 AM:- received email from Isaac. he mentioned that today they will be pump wells with product and gauge accessible wells. 11:02 AM:- sent email to Isaac. asked him to provide information about amount of oil recovered from each well and to re-gauge existing wells. email copied to Mr. Cohen and Mr. McGaha. 2:00 PM:- received email from Isaac. he

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mentioned that they are having trouble with the pump. 12/28/15-Hiralkumar Patel. received email from Isaac (at 6:28 PM on 12/24/15). he gauged eight wells and found product in one well. he is unable to pump out oil due to pump issue. received another email from Isaac (at 6:51 PM on 12/24/15) including gauging data for eight wells. almost 2 ft product found in well FN-15A. 12/29/15-Hiralkumar Patel. 8:52 AM:- sent email to Isaac inquiring update on removal of free phase product from impacted monitoring wells at the site. email copied to Mr. Cohen and Mr. McGaha. 12/30/15-Hiralkumar Patel. 10:50 AM:- left message for Mr. Cohen inquiring update on product removal from impacted monitoring wells. 10:53 AM:- left message for Mr. McGaha. 11:03 AM:- received email from Isaac stating that pump does not work. 11:10 AM:- sent email to Isaac. informed him that if the pump does not work, then alternate method must be used. also informed him that the Department requires immediate removal of free phase petroleum product from the impacted monitoring wells at the site and document confirming such activity must be submitted to the Department no later than COB December 31, 2015. email copied to Mr. Cohen and Mr. McGaha. 01/04/16-Hiralkumar Patel. received email from Isaac (at 7:50 PM on 12/31/15). they gauged wells today and found 2 ft of product in well FN-15A. he mentioned that product was removed from the impacted well. they have not found product in other wells. they are working on uncovering more wells. 1:20 PM:- sent email to Isaac and asked to provide schedule for this week's well gauging activities so site visit can be made. email copied to Mr. McGaha and Mr. Cohen. 01/05/16-Hiralkumar Patel. received email from Isaac (at 4:40 PM on 01/04/16). he will be on-site on 01/08/16 to gauge the wells. 01/08/16-Hiralkumar Patel. 9:15 AM:- visited site and met Patrick, person working for property management. while at the site, witnessed gauging of two monitoring wells: FN-14 and FN-15A. thin layer of product noted in well MW-14 and approx. 1 ft of product noted in well MW-15A. asked Patrick to remove product from the wells. he will continue gauging other wells. inspected creek and found no sheen on water. 10:59 AM:- spoke with Isaac and asked him to continue weekly well gauging and product removal until further notice. 1:03 PM:- sent email to Mr. McGaha and asked to submit report for fingerprint analysis. email copied to Mr. Cohen. 2:29 PM:- received email from Isaac including well gauging summary. product found in well FN-15A only. 2:59 PM:- received email from Mr. McGaha. he has not received fingerprint results yet. 01/15/16-Hiralkumar Patel. received email from Isaac (at 6:38 PM on 01/14/16) including well gauging data. out of seven monitoring wells gauged, product found (approx. 1 ft) in well FN-15A only. 01/19/16-Hiralkumar Patel. 12:25 PM:- received email from Mr. McGaha including result of fingerprint analysis for two product samples collected on 01/12/16. Mr. McGaha stated results present the findings of undermined . I have requested the laboratory provide any additional details available regarding the carbon chain length etc. reviewed fingerprint sample results. as per lab report, two product sample (White Top & Black Top) were collected on 01/12/16. also as per comments in the lab report: petroleum hydrocarbon chromatogram most closely resembles diesel fuel / fuel #2. the sample was quantitated against C9-C alkane hydrocarbon standard. 01/20/16-Hiralkumar Patel. 10:36 AM:- spoke with Mr. McGaha regarding product sample collection for fingerprint analysis. he mentioned that result of product samples collected on 12/18/16 were inconclusive, so they collected another set of samples on 01/12/16. informed Mr. McGaha that as per gauging data from Isaac, product

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found in only one well FN-15A during gauging on 12/24/15, 12/31/15, 01/08/16 and 01/14/16. asked him to submit result of fingerprint analysis for product samples collected on 12/18/15 and information about from where the two product samples were collected on 01/12/16. reviewed chain-of-custody submitted with fingerprint analysis report and it was noted that the sample was collected from NJ. also, there is no indication anywhere in the report that these product samples were collected from 200 Morgan Ave. 10:51 AM:- spoke with Mr. McGaha again and informed him about sampling location (NJ) noted in chain-of-custody. at this time, he mentioned that sampling report he submitted yesterday is actually for samples collected on 12/18/16. he thinks lab filled up the chain-of-custody when samples were dropped there. asked him to send letter report including sample result and explaining issues with chain-of-custody. 11:05 AM:- left message for Mr. Cohen. 2:00 PM:- received email from Mr. McGaha explaining information noted on chain-of-custody. Regarding the fingerprint samples collected on 12/18/2015. The results of these samples were submitted on January 19, 2016. Today you pointed out errors on the chain of custody related to these samples. The information on the chain of custody is wrong. Steve collected the samples on 12/18/2015, when you were on-site, and dropped the samples to our office location that evening. Steve told me the labels for the samples were filled out, but he did not have a chain of custody. I requested another individual to get the samples to the laboratory. It is at this point that the sample was mishandled and errors were introduced into the process. After our phone call I took a closer look at the chain of custody and attempted to determining what happened to the samples. Just before but also after our second phone call, I learned that the samples were not dropped off to the laboratory until after the Christmas and New Year holidays. When they were dropped off, they were dropped to our sales representative for Phoenix Laboratories for delivery to Phoenix Laboratory. The laboratory sales representative completed the chain of custody so that the samples could be processed. The information for the chain of custody was provided by the individual who was requested to get the samples to the laboratory. Unfortunately, for fear of reprimand for not delivering the samples on time, that individual did not consult Steve or I for the correct details for the chain of custody. When inquiring about the time-frame to receive the results I was presented with an excuse for the delay which. The samples were obviously mishandled. I take full responsibility for this situation. I chose an under-qualified person to complete what I considered to be a simple task, and get the samples to the laboratory. The chain of custody was completed poorly, at best, and is the only reason for this communication. The transport of the samples to the laboratory had nothing to do with the responsible party for Morgan Terminal. The samples from Morgan Terminal were analyzed by a NY State certified laboratory. The fingerprint analysis samples delivered to Phoenix were the only fingerprint analysis samples we have collected since 12/18/2015. I apologize for the situation and I will again offer to re-sample the product for fingerprint analysis to eliminate issues related to the sample handling and chain of custody errors caused during sample delivery to the laboratory. 01/25/16-Hiralkumar Patel. 1:01 PM:- sent email to Mr. McGaha. informed him that the department has not received a report for field work conducted on 12/18/15. asked him to submit report, including details about product sample and analysis and results of subsequent well gauging/product recovery activities.

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email copied to Mr. Cohen and Arthur Schwartz (aschwartzesq@optonline.net). 01/26/16-Hiralkumar Patel. received email from Mr. McGaha (at 10:47 PM at 01/25/16) including an interim remedial measures progress report. abstract: - a magnetometer survey was performed to locate all monitoring wells at the property that have been covered or for which the current location is currently not visible or known. the report is missing date and result of this survey ---------- - wells FN-12, FN-14, FN-15, FN-22, FN-28A, FN-34 and FN-39 (and also FN-40 which is not listed in text part of the report) were gauged on 12/18/16 - sample of LNAPL was collected from FN-14 and FN-15 - groundwater elevations fluctuate between 1.32 ft above mean sea level at FN-12 in Dec. 2014 to 8.88 ft above mean sea level at FN-34 in May 2014 - morgan terminal has removed 1.029 gal of oil during the reporting period between 12/14/15 and 01/15/16 - owner requested to modify well gauging/product recovery schedule from weekly to bi-weekly the submitted report is considered incomplete due to: - missing results of magnetometer survey - site map including location of formerly removed tanks and all the wells installed in past whether it is visible or not at this point 1:46 PM:- sent email to Mr. McGaha and asked him to submit revised report including following: 1. result of magnetometer survey performed (to locate all monitoring wells at the property that have been covered or for which the current location is currently not visible or known) at the site, including date of the survey. 2. a scaled site map including current site use, existing structures, tank systems and monitoring wells. ask him to mark working condition of each available monitoring well. also informed Mr. McGaha that the Department does not agree with the proposed Remedial Action Schedule submitted in the report and requires continuation of weekly well gauging/product removal. asked him to submit a revised report no later than COB February 05, 2016. email copied to Mr. Cohen. 02/03/16-Hiralkumar Patel. 10:13 AM:- sent email to Mr. McGaha and asked him to include results of weekly well gauging for the week of Jan. 18, Jan. 25 and Feb. 1st, in the revised report (due on 02/05/16). email copied to Mr. Cohen. 02/09/16-Hiralkumar Patel. 1:31 PM:- spoke with Mr. McGaha and inquired him about report. he just received some missing information about well monitoring/gauging last week and the report will be submitted by tomorrow morning. 02/10/16-Hiralkumar Patel. 2:06 PM:- received email from Mr. McGaha including amended interim remedial measures progress report. the amended report includes date (12/16/15) and result of magnetometer survey, description of existing site use and location of on-site structures, and results of well gauging conducted on 02/05/16. on-site wells were not gauged on 01/22/16 and 01/29/16 as site was covered with snow. during well gauging on 02/05/16, 2.4 ft of product found in well FN-15. 02/16/16-Hiralkumar Patel. received email from Mr. McGaha (at 5:27 PM on 02/12/16) including well gauging data for week of Feb. 8th. total of ten wells (FN-12, FN-14, FN-19, FN-22, FN-28, FN-34, FN-39, FN-40, GW-42 and GQ-43) were gauged. record does not include result for well FN-15. record includes numbers, but does not include information about what this numbers represent to. also there is no result for well FN-15. 9:16 AM:- sent email to Mr. McGaha inquiring about result for well FN-15. also inquired about numbers listed in last week's well gauging data. email copied to Mr. Cohen, Cameron Hendrick (deweyhendrick@yahoo.com) and Arthur Schwartz (aschwartzesq@optonline.net). 11:58 AM:- sent letter to English Kills Ventures LLC requiring submission of revised RIR including: 1)

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continuation of weekly groundwater monitoring/product removal, 2) inspection/maintenance of boom in the creek and 3) further groundwater delineation via installation of monitoring wells along creek. asked property owner to submit revised RIR no later than 05/31/16. letter emailed to Mr. McGaha, Mr. Feller and Mr. Cohen. letter copied to DEC Austin, DEC Vought, DEC DeMeo and DEC Urda. 03/24/16-Hiralkumar Patel. 12:04 PM:- received email from Mr. McGaha including a aerial map with proposed location of two monitoring wells. Mr. McGaha mentioned that they have added new absorbent boom in the waterway adjacent to the property to address the sheen on the water that has been/is being observed in the last several months. the new boom does not extend across the entire waterway, and does not capture material that may be entering the waterway from the outfall at the end of the waterway. the goal is to determine if the sheen originates from outfall or another location. they have also performed a dye trace of drains at the subject building to determine if the source of the sheen on the waterway could originate from piping below the property. a magnetometer was used to locate additional monitoring wells at the property. they have located 11 monitoring wells. additional effort has been scheduled to continue this effort. repair of the damaged wells is also being scheduled. the magnetometer also identified an anomaly near the small structure at the north side of the property. additional investigation of the anomaly is proposed including a small excavation above the anomaly. Mr. McGaha mentioned that weekly well gauging is continuing. 03/25/16-Hiralkumar Patel. 2:42 PM:- sent email to Mr. McGaha and asked him to submit a scaled site map including all existing wells and location of proposed monitoring wells. email copied to Arthur Schwartz and Mr. Cohen. 04/07/16-Hiralkumar Patel. received email from Mr. McGaha (at 10:17 PM on 04/06/16) including a site map with location of two proposed wells. he mentioned that the wells at the property will be repaired and re-surveyed for horizontal position and elevation following the installation of the two proposed wells. he also mentioned that the survey will allow for an improved scaled map, but they do not anticipate improving the maps until the survey is complete. 04/08/16-Hiralkumar Patel. 3:08 PM:- sent email to Mr. McGaha and informed him that proposed well locations look fine. 06/02/16-Hiralkumar Patel. received email from Mr. McGaha (at 12:55 PM on 06/01/16) including remedial investigation report. abstract: - remedial investigatory efforts performed at the site between Feb. 2016 and May 2016: weekly well gauging and LNAPL removal; monitoring well repair; magnetometer survey; dye trace - two (2) 2-inch monitoring wells (MC-1 and MC-2) were installed at the south and west side of bulkhead at the end of inlet, to a depth of 20 ft bg with 15 ft of screen - during the well installation the soil was screened using PID. PID readings were not detected above background levels - site is underlain by dark, very loose to medium compacted, fine to medium-grained sand with a trace pebbles, silt, brick and concrete - at 12 ft a peat layer consisting of very soft to medium compacted peat and/or organic silt with trace plant fibers and fine sand was encountered - soil samples were not collected during installation of wells MC-1 and MC-2 -------- - groundwater samples were collected from MC-1 and MC-2 - found CVOCs in groundwater sample from MC-2 - wells FN-12, FN-14, FN-15, FN-22, FN-28A, FN-34, FN-39, FN-40, FN-42, MC-1 and MC-2 were gauged weekly - during the reporting period, absorbent socks were used to collect LNAPL form wells - in addition to absorbent socks, a double diaphragm pump is used to collect LNAPL

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directly from wells containing LNAPL during regular product recovery events - based on all available data, groundwater elevations fluctuate between 1.32 ft above mean sea level at FW-12 in Dec. 2014 to 15 ft above mean sea level at FN-34 in May 2014 - presence of LNAPL is currently limited to an isolated area surrounding FN-14, FN-15 and FN-40 - manholes of the nine of the existing wells (FN-12, FN-14, FN-15, FN-22, FN-28, FN-34, FN-39, FN-40 and FN-42) were replaced - magnetometer survey was helpful in locating a total of 12 existing monitoring wells at the site (these wells were known for last couple of years) - magnetometer survey was hindered by the presence of steel storage container near the office building, therefore, the location of 550 gal heating oil tank could not be determined - the 3,000 gal diesel tank was not located at the property and it is presumed that the tank was previously removed - one anomaly indicative of a suspect UST was identified during the magnetometer survey. the anomaly was located 8 ft east from the south corner of the ancillary building at the north side of the property. the anomaly was approx. 4 ft wide and extended approx. 3 ft from the wall of the ancillary building. the asphalt paving was removed above the area of the anomaly and soil was excavated to a depth of 5 ft bg, however, no UST or evidence of petroleum were discovered in this location - in an effort to investigate potential sources related to the oil sheen identified on the English Kills, the drains at the bus area and the domestic drains within the building were tested with a non-hazardous dye. dye was not identified in the creek ---------- - during a period of low tide, the skeleton of what appears to be a boat was observed in the mud at the bottom of the inlet below the water - based on the initial site characterization soil samples collected by Fenley & Nicol in 1993 and the more recent soil samples collected by GeoQuest in 2014, the contaminants identified in soil are considered historic fill and not related to a specific discharge incident or area of concern ---------- groundwater analyticals: ----------MC-2 1,2-Dichlorobenzene----------40 1,3-Dichlorobenzene----------4 1,4-Dichlorobenzene----------10 Chlorobenzene----------8 cis-1,2-Dichloroethene-------11 Vinyl Chloride----------12 - during weekly gauging since Mar. 2016, product found in wells FN-14 (0.01 to 0.31 ft), FN-15 (0.01 to 0.49 ft) and FN-40 (0.13 to 0.60 ft) recommendations: - probing the mud with a tile probe is recommended to determine if an un-natural structural may be present in the mud below the creek - additional investigation for detection of chlorinated compounds in MC-2 - bi-weekly (instead of weekly) gauging of wells - further investigation for USTs using GPR Survey 06/13/16-Hiralkumar Patel. 2:08 PM:- left message for Mr. McGaha. asked him to submit missing boring/well logs for MC-1/MC-2 and Appendix A. also asked him to call back to discuss use of Proposed Conceptual Approach to Site Remediation dated 07/11/2005. 2:09 PM:- sent email to Mr. McGaha and asked to submit missing information in the report. email copied to Mr. Schwartz and Mr. Cohen. 06/16/16-Hiralkumar Patel. received email from Mr. McGaha (at 2:32 PM on 06/15/16). he mentioned that missing information will be submitted in few days. 08/31/16-Hiralkumar Patel. 11:16 AM:- sent email to Mr. McGaha and asked him to submit missing information immediately. email copied to Mr. Schwartz and Mr. Cohen. 12:03 PM:- received email from Mr. McGaha including boring logs for MC-1 and MC-2 and Remediation System Evaluation report prepared for EPA dated 06/04/2003. as per boring logs: - concrete fill and silty sand noted in both borings -

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both borings were installed to 20 ft bg - groundwater was found at 11 ft bg in MC-1 and 10 ft in MC-2 - gross contamination encountered at 12-13 ft bg - PID reading above 100 ppm recorded below 5 ft depth in MC-1 with maximum of 950 ppm recorded at the end of boring - PID readings noted below 5 ft depth in MC-2 with maximum of 150 ppm at the end of boring Mr. McGaha mentioned that to make the deadline for the submission of the recent report, he relied on verbal communication with Derik, the field technician on-site during the recent field work, regarding the description of soil at MC-1, MC-2, and the soil at the anomaly investigated. Mr. McGaha questioned Derik about gross contamination in MC-1, he described the area of moist and black with an obvious odor. Derick described the layer as having the texture of wood chips. Mr. McGaha stated that this observation did not translate into groundwater contamination, based on the analytical results of the groundwater sample at MC-1, however, the finding warrants further investigation. he intends to inspect the bulkhead on the water side at the same depth to determine if the gross contamination can be associated with the sheen observed on the water. this work will be performed during the investigation of the structure identified on the bottom of the waterway. 09/13/16-Hiralkumar Patel. 1:44 PM:- received message from Mr. McGaha. he mentioned that during well monitoring, they noted product in one of the two wells installed along bulkhead. they are planning to install a pneumatic skimmer to recover product. Mr. McGaha will submit a written work plan for review. 09/15/16-Hiralkumar Patel. 1:01 PM:- sent email to Mr. McGaha and asked him to submit a revised RIR (including discussion of elevated PID readings and field observations that were noted in the boring logs) and results of well monitoring/product recovery since May 2016, by the end of 09/30/16. email copied to Mr. Cohen and Mr. Schwartz. 09/20/16-Hiralkumar Patel. 1:07 PM:- received email from greenpoint11237@gmail.com (without any name) stating that the new well that we installed near the bulkhead recently which has been showing small amounts of oil, we are pumping the oil every day as per Mr. Mcgaha suggestion. Additionally, the two booms that were installed in the water will be changed soon. 09/23/16-Hiralkumar Patel. 2:21 PM:- received email from Mr. McGaha including interim remedial measure report. 09/28/16-Hiralkumar Patel. received email from Mr. McGaha (at 8:56 PM on 09/27/16) including link to amended RIR. 10/26/16-Hiralkumar Patel. DEC Falls came to discuss issues at the site. they received an application for bulkhead repair permit. informed DEC Falls about petroleum contaminated soil and groundwater at the site. 11/01/16-Hiralkumar Patel. 3:30 PM:- received email from Mr. McGaha including interim remedial measure report for Oct. 2016. 11/07/16-Hiralkumar Patel. abstract of amended RIR dated 09/30/16: - two wells (MC-1 and MC-2) were installed - concrete fill and silty sand noted in both borings - both borings were installed to 20 ft bg - groundwater was found at 11 ft bg in MC-1 and 10 ft in MC-2 - gross contamination encountered at 12-13 ft bg - PID reading above 100 ppm recorded below 5 ft depth in MC-1 with maximum of 950 ppm recorded at the end of boring - PID readings noted below 5 ft depth in MC-2 with maximum of 150 ppm at the end of boring - on 09/11/16, LNAPL was identified in well MC-1 - the fact that LNAPL was not immediately identified in MC-1, suggests that the LNAPL could originate closer to the bulkhead and/or north of MC-1, placing a potential source of LNAPL under the boiler house building. the boiler house building is downgradient of the 3,000 gal diesel potentially existing UST location - a magnetometer survey failed to identify the 3,000 gal UST

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- will conduct ground penetrating radar survey to locate 3,000 gal UST - if the ground penetrating radar survey does not locate the UST, a hole will be dug by hand to determine if the USTs are in the areas identified on historical maps - monitoring wells (FN-12, FN-14, FN-15, FN-22, FN-28A, FN-34, FN-39, FN-40, FN-42, MC-1 and MC-2) gauged weekly - absorbent socks and double diaphragm pump were used to collect LNAPL - groundwater flow tends to be in a northeast direction - proposes to excavate immediately adjacent to the bulkhead that parallels Morgan Ave to a depth of 14 ft bg to investigate presence of sheen on both side of bulkhead in area of MC-1. the size of the excavation will be limited to 14 ft bg inside the bulkhead, and is expected to be the width of a single backhoe bucket (2 ft) and 6-8 ft long to allow the arm of the excavator to reach the required depth - will remove any LANPL from the excavation and install a 4 inch diameter recovery sump - property owner proposes to use previously approved conceptual approach dated 07/11/2005 - during weekly gauging, found product in wells FN-15 and FN-40 - report notes that well FN-12 is in close proximity to a water line that has somehow been damaged and is leaking water. the water level is just below grade from 09/02/16 through 09/16/16. abstract of interim remedial measure report dated Oct. 2016: - gauged wells FN-12, FN-14, FN-15, FN-28A, FN-34, FN-39, FN-40, FN-42, MC-1 and MC-2 - total of 5.87 gal of oil have been collected using the absorbent socks since May 2014 - total of 3.91 gal of oil have been collected by pumping since Dec. 18, 2015 - will replace boom in creek - will install an active LNAPL skimmer near the bulkhead to the Newtown Creek inlet that parallels Morgan Ave (in area of well MC-1) - weekly gauging data from 09/16/16 through 10/28/16 shows presence of product in wells FN-15, FN-40 and MC-1 (0.38 ft on 09/23/16) discussed with DEC Austin and DEC Vought. based on result of historical investigation and recent groundwater monitoring, the department will request: - installation of additional monitoring wells (south of FN-40, east of FN-14, northeast of FN-14, couple of well on north side of former southern tank complex, at least two wells east of MC-2 along the bulkhead) to confirm containment of plume and for continuous monitoring/product removal - continuation of well monitoring/product removal (on monthly basis) and submission of quarterly reports until site development a meeting with property owner is needed to discuss future actions and submission of a RAWP. 3:06 PM:- spoke with DEC Falls regarding requirements for bulkhead permit application. he mentioned that missing information in the application can be discussed during meeting with property owner in office. Caroline Kwan Project Manager Special Projects Branch U.S. Environmental Protection Agency Ph. (212) 637-4275 email: kwan.caroline@epa.gov Supinderjit Kaur Remedial Project Manager EPA, Region 2, ERRD-SPB-MPS PH. (212) 637-4167 email: kaur.supinderjit@epa.gov 11/08/16-Hiralkumar Patel. 8:52 AM:- left message for (and sent email to) Mr. McGaha requesting a call back. email copied to Mr. Schwartz and Mr. Cohen. 11/10/16-Hiralkumar Patel. 1:34 PM:- received call from Mr. McGaha. informed him that to discuss further remediation activities at the site and actions related to bulkhead repair/replacement work, the department likes to meet property owner, environmental contractor/consultant and contractor for bulkhead work. Mr. McGaha will call back after discussing with property owner. 11/18/16-Hiralkumar Patel. 12:04 PM:- received email from Mr. McGaha confirming meeting on 12/14/16. 12/06/16-Hiralkumar Patel. spoke with Mr. McGaha. he confirmed that Mr. Schwartz, Allan and himself will

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meet DEC on 12/14/16. asked him about any consultant/engineer who will be handling bulkhead repair/replacement project. he will contact property owner. 12/14/16-Hiralkumar Patel. 1:00 PM:- met with Mr. Schwartz, Mr. McGaha, Allan Francis, DEC Vought, DEC Urda, DEC Chan, DEC Greco and DEC Falls. Mr. Schwartz mentioned that they are planning to replace rotted sections of bulkhead above water line and planning to work during low tide. DEC permit unit has asked for detailed plan on bulkhead repair work, including containment procedure and counter measures on-hand. asked Mr. Schwartz to inform DEC prior to beginning of bulkhead work and report immediately of any petroleum discharge issue during bulkhead work. to remediate remaining petroleum contaminated areas at the site, Mr. McGaha proposed following: - a test pit trench perpendicular to bulkhead in the area of well MC-1 - placement of larger diameter recovery well in proposed trench in area of MC-1 with installation of skimmer at beginning and possible use of pump & treat technique later on - a pump test prior to beginning pump & treat operation in area of MC-1 to confirm radius of influence - in-situ remediation using oxidants in alley - a pilot test prior to application of oxidants in alley prior to in-situ remediation at the site, informed Mr. Schwartz and Mr. McGaha that the department requires additional monitoring wells to the north, east and south of existing wells MW-15, MW-14 and MW-40 to confirm plume containment and effectiveness of in-situ remediation. Mr. Schwartz mentioned that a re-zoning application has been submitted to city department for redevelopment of the site in a manufacturing building. asked Mr. Schwartz to submit copy of re-zoning application. Allan Francis **site manager** Ph. (347) 859-6925 email: allanfrancis73@gmail.com Arthur Schwartz, esq. PH. (732) 905-1008 email: arthur@aschwartzesq.com 2:59 PM:- sent email to Mr. McGaha requesting property owner’s mailing address. email copied to Mr. Francis, Mr. Schwartz and LEP Management. 12/16/16-Hiralkumar Patel. 1:47 PM:- received email from Mr. McGaha including mailing address for property owner. Novack Burnbaum Crystal LLP. 675 Third Avenue, 8th Floor New York, NY 10017 Attn.: Edward Burnbaum 3:30 PM:- sent letter to owners of lot # 101 (Greenpoint Bushwick LLC.) and 207 (Bushwick Star Management LLC.) including approval for amended RIR dated 09/30/16 and requiring submission of RAWP within 90 days of the date of this letter (as per the signed consent order). asked them to include following in RAWP, which was agreed upon during meeting: 1) details about installation of sentinel wells on lot 207, 2) sampling methodology during installation of sentinel wells, 3) test pit investigation at location of MC-1, 4) active remediation at location of MC-1 and 5) application of oxidants to treat groundwater contamination on lot 207. letter emailed to DEC Urda, DEC Greco, DEC Falls, DEC Chan, Mr. Schwartz, Mr. McGaha and LEP Management. 12/19/16-Hiralkumar Patel. 2:52 PM:- received email from Mr. Schwartz including a copy of letter to NYC Dept. of City Planning. as per the letter, a site redevelopment is proposed including one (1) 10-story building. one of the site plan shows garage in cellar. no other construction details are available. 12/23/16-Hiralkumar Patel. 2:21 PM:- received email from Mr. McGaha including interim remedial measure report for Nov. 2016. -wells FN-12, FN-14, FN-15, FN-19, FN-22, FN-28A, FN-34, FN-39, FN-40, FN-42, MC-1 and MC-2 were gauged - based on all available data, groundwater elevations fluctuate between 1.22 ft bg at FN-12 on 08/18/16 to 13.85 ft bg at MC-1 on 11/25/16 - total of 4.31 gal of oil have been collected by pumping since Dec, 2015 - weekly gauging data from 11/08/16 through 12/02/16

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shows presence of product in wells FN-15 (0.12 to 0.65 ft) and FN-40 (0.14 to 0.25 ft) 01/11/17-Hiralkumar Patel. received email from DEC legal including copy of full-executed modification to the consent order. 01/26/17-Hiralkumar Patel. received email from Mr. McGaha (at 6:40 PM on 01/25/17) including interim remedial measure report for Dec. 2016. -wells FN-12, FN-14, FN-15, FN-19, FN-22, FN-28A, FN-34, FN-39, FN-40, FN-42, MC-1 and MC-2 were gauged - based on all available data, groundwater elevations fluctuate between 1.22 ft bg at FN-12 on 08/18/16 to 13.85 ft bg at MC-1 on 11/25/16 - total of 4.40 gal of oil have been collected by pumping since Dec, 2015 - wells were gauged three times in Dec. 2016: 12/02/16, 12/06/16 and 12/22/16 - gauging data shows presence of product in wells FN-15 (0.22 to 0.33 ft) and FN-40 (0.18 to 0.24 ft) - proposes to submit a remedial action work plan by 03/13/17 02/06/17-Hiralkumar Patel. DEC Austin received an email (on 02/04/17) from Seth Friedland. he mentioned that his client is seeking to develop the site and they are having an exploratory meeting with OER on 02/08/17. Seth D. Friedland Friedland Law, LLC. PH. (212) 344-1400 Ext. 202 (917) 902-6386 Fax (212) 344-8735 Efax (646) 304-1916 email: sfriedland@friedland.law discussed with OAG Karpen and informed her about scheduled meeting between site developer and NYC OER. inquired her about status on environmental lien on property. 2/27/17-Vought-Conference call on 2/24/17 with RSE, Vought, and Patel. Friedland noted that the site developer he is working for is Arthur Schwartz, who is also the current property owner. Friedland noted that he and Schwartz went to OER to seek possible help on having NYC Dept of Planning rezone the site via a zoning application and were hoping that OER could facilitate the process. Friedland noted that they are considering redeveloping the property for commercial purposes and were intending to perform excavation for at least one underground level . Friedland noted that at time of conference call, his only authorized role was in the rezoning effort but that he may be also brought in as counsel for the environmental issues. Friedland also noted he know nothing of the bulkhead issues with DEC Permits and DEC to send him copy of last email chain. Friedland also noted that Magaha was currently working on RAP as previously discussed with DEC. Freidland also noted he knew of prior Consent Order on site and may possibly want to explore closure of the Consent Order so that Schwartz may enter the OER BCP Program. RSE and Vought replied that any possible closure of the Consent Order would have to go through DEC OGC. Friedland noted that they would proceed with developing the RAP until the possible zoning change is approved and that he would get back to DEC with more information. 2/27/17-Vought-Received email on 2/26/17 from Friedland with cc to RSE and DEC Patel that Randy, Jeff and Kumar, Glad we were able to catch up on Friday. In response to your questions and requests for further information about the project, and DEC s interest in the proposed development of this site, here is some further information about the proposed development project and the zoning changes that are going to be needed to see it through to fruition. Any assistance that DEC can provide of course would be very much appreciated. Here is a very quick summary of the our client s interaction so far with the Department of City Planning (DCP) on the critical zoning issues: First meeting with DCP on February 4, 2016: We need Zoning map amendment from M3-1 to M1-5 that would enable the redevelopment of the Premises with a ten (10) story, 495,370 square foot building. (A copy of the architect s renderings showing the proposed building is attached). Designed to align with

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the City s vision of the North Brooklyn IBZ. The proposal now contains one building (as opposed to two), which rises to ten (10) stories, and consists of 495,370 square feet of commercial floor area (office and retail building). (A copy of the most recent revised Proposed Plans from December 2016, is also attached hereto). Met with City Planning again, January 2017 (LAST MONTH): At that meeting, the following was discussed: 1)Need to Further Revise the plans to depict a more realistic proposal that will incorporate the following: a.Noise; b.Emissions; c.What floor plates could be used without the sky exposure plane; d.Parking whether we need all the proposed spaces and whether we should have the cellar parking when it is prone to flooding; e.Incorporating higher than the current 12 floor to ceiling heights; f.Pedestrian and vehicular (truck) access; g.Creek access; h.Flood resiliency; i.Types of businesses and how the newly constructed buildings will meet their needs; j.Ventilation - if there is going to be manufacturing use shared with commercial use; 2)Create an urban planning report to support the case for the density, which will include: a. Transportation; b. Neighboring uses; c.Waterfront esplanade 3.Marketing/real estate analysis that shows the proposed uses are needed in this neighborhood. Thanks again, and enjoy the remainder of your week-end. Regards . Vought added attached rendering and revised proposed plans to D2. Vought sent reply to Friedland with cc to RSE, Patel, OGC Urda, NYSOAG Karpen, DEC Greco and DEC Falls that Seth, It was good talking to you as well on Friday and thanks for the email below as well as the attached conceptual site plans. The plans show the development of an underground parking garage so this would certainly be optimum as it would likely allow for source removal down to and including the water table. The Department can assist in expediting the review of any proposed plans as well as participate in any meetings to facilitate approval of such plans. I will also inform both OGC and the NYSOAG of your possible request, as per our teleconference, to close the Consent Order, pending the rezoning of the site. I will also forward you the email chain with regards to the bulkhead and Permit issues we discussed on Friday. Thanks as well and keep us posted. Vought sent OGC Urda and NYSAOG Karpen spill notes above from Fridays call. Vought sent another email to Friedland that Seth, After checking my emails, I realized I have no external emails regarding the Bulkhead Permit request. Please contact Tamara Greco or Justin Falls, copied above, for more information regarding the permit request, if needed. Thanks, . Vought received reply from Friedland with cc to all that Thanks very much, Jeff. I sincerely appreciate it. 03/24/17-Hiralkumar Patel. 12:58 PM:- received email from Mr. McGaha including remedial action work plan. summary: - selected remedial alternatives involves isolating the historic fill over the entire footprint of the site with a cap in areas not already capped with asphalt or concrete and treating residual areas of petroleum contamination using in-situ chemical oxidation and multi-phase extraction for residual LNAPL, establishing an declaration of covenant and restrictions and environmental easement, along with site management plan and operation, maintenance and monitoring plan - capping of currently exposed soil will be performed using a demarcation layer, followed by subgrade material asphalt paving - in-situ chemical oxidation is proposed in the vicinity of monitoring wells FN-14, FN-15 and FN-40 - oxidant solutions would be injected into the soil and groundwater through 15 injection points constructed as temporary well points to a depth of approx. 4-5 ft bg, or 0-2 ft below the water table - three additional

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monitoring wells would be installed to monitor progress of oxidation remediation efforts in this area - multiphase extraction will be performed at the bulkhead with the Newtown Creek and near MC-1 to removal LNAPL and groundwater contamination - multiphase extraction will be operated until LNAPL is removed and groundwater contamination meets stable and acceptable concentrations - following completion of RAWP implementation, quarterly groundwater monitoring would be implemented to document effectiveness of the remedy - groundwater would be samples for one year (four monitoring events) ---------- - track 4 - industrial restricted use soil cleanup objectives are proposed ---------- the work plan does not include sampling methodology during installation of sentinel wells.
07/10/17-Hiralkumar Patel. 10:25 AM:- spoke with Mr. McGaha inquiring about current status on product recovery. he will submit report and interim work plan to address LNAPL contamination. 09/18/17-Hiralkumar Patel. received email from Mr. McGaha (at 11:55 AM on 09/12/17) including an interim remedial measure progress report (last report submitted on 01/25/17). report included results of gauging events conducted until 09/05/17. since 12/22/16, product noted in following wells: product thickness (in ft):
----------FN-14------FN-15------FN-40------MC-1
01/12/17----------0.12-------0.12
03/09/17----------0.28-------0.66
03/30/17----------0.42----------5.14
04/06/17----------0.68-------0.31------3.59
04/19/17----------0.36----------4.89
04/28/17----------0.29-------0.75------3.71
05/11/17----------0.62-------1.56------3.72
05/26/17----------0.46----------3.37
06/02/17----------0.81----------3.01
08/08/17--------0.20-------0.30----------1.10
08/15/17--------0.10-------0.20----------0.80
08/23/17--------0.10-------0.20----------0.40
08/29/17--------0.10-------0.10----------0.29
09/05/17--------0.20-------0.20----------0.40 Mr. McGaha is preparing proposal for operation of an alternative LNAPL remediation system. received email from DEC Ian Beilby. he received pics from NYC's consultant claiming NAPL seeping from bulkhead along the site. 09/20/17-Hiralkumar Patel. 1:15 PM:- visited site and met Arron Abraham (347-773-9633, aarbenabe@yahoo.com) from property management office. inspected creek inlet adjacent in northwest corner of the site (near well location MC-1). noted two layers of sausage booms covering southern half of bulkhead which is owned by former morgan terminal. minor sheen was noted within boom area. no signs of product were noted outside the booms. need to re-inspect area during low tide. 09/25/17-Hiralkumar Patel. received powerpoint presentation from DEC Ian Beilby. pics show seepage of free product from bulkhead towards northern section of inlet which is not covered by booms. 10:08 AM:- sent email to Mr. McGaha inquiring about plan for alternative LNAPL remediation system. email copied to LEP Management, Mr. Schwartz and Mr. Abraham. 09/27/17-Hiralkumar Patel. 9:30 AM:- visited site and met Mr. Abraham. noted heavy sheen between absorbent booms and bulkhead. some of the sheen had escaped boom area as one end of the boom was in air during low tide. spoke with Mr. McGaha. asked Mr. Abraham and Mr. McGaha to adjust booms to contain oil seepage. also asked Mr. McGaha about remediation plan. after reviewing pump option, he wants to use previously proposed remedial

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method: installation of sump between well MC-1 and bulkhead and pumping oil into oil/water separator and discharge water into sewer system after getting necessary permit. 10/03/17-Hiralkumar Patel. 11:51 AM:- received email from Mr. Abraham. he mentioned that a hard boom with sweeps will be installed in the creek. 10/04/17-Hiralkumar Patel. 10:25 AM:- left message for Mr. Abraham inquiring about installation of hard boom and sweeps, and update on site redevelopment plans. 11/04/17-Hiralkuamr Patel. 5:30 PM:- visited site while investigating a report of oil sheen (spill #: 1707515) in Newtown Creek. found free phase product between the bulkhead and boom in the creek. petroleum sheen were noted outside the boom area. a drainage pipe was visible in bulkhead wall due to low tide at the time of inspection. no signs of oil discharge from the drainage pipe. 11/09/17-Hiralkumar Patel. 12:16 PM:- left message for Mr. McGaha. 11/16/17-Hiralkumar Patel. received email from Wardah Azhar from CDM Smith (EPA consultant working on Newtown Creek superfund cleanup) inquiring about the site. Wardah Azhar CDM Smith Ph. (303) 383-2364 email: azharw@cdmsmith.com 11/28/17-Hiralkumar Patel. 11:16 AM:- received message from Mr. McGaha. he mentioned that remediation system for LNAPL has been installed. 12:02 PM:- spoke with Mr. McGaha. he mentioned that a remediation system has been installed and he likes to discuss it prior to turning it on. asked Mr. McGaha to submit details about the remediation system for review. 12/07/17-Hiralkumar Patel. 12:28 PM:- left message for Ms. Azhar. 12:37 PM:- received call from Ms. Azhar. she requested copy of documents/reports received since 2015. 12/11/17-Hiralkumar Patel. as instructed, reports requested by CDM were sent to DEC Austin. 06/07/18-Hiralkumar Patel. DEC Austin forwarded email from Newtown Creek Alliance including site pics of collapsed bulkhead. 8:11AM:- left message for Mr. McGaha. DEC Piper inspected the site and found no sheens emanating from the shoreline. discussed with DEC Stephen Watts in permits. Steve mentioned that they have sent a second incomplete notice on 12/28/16 for an application originally received on 07/20/15. they have not received any response after that. 07/11/18-Hiralkumar Patel. 10:59 AM:- spoke with Mr. McGaha and inquired him about details of remediation system as discussed in Nov. 2017. he mentioned that the system was installed and being managed/monitored by owner’s on-site representative. Mr. McGaha will submit remediation system details and summary of work performed since Sept. 2017, by end of the week. Mr. McGaha doesn’t know anything about bulkhead work. 07/13/18-Hiralkumar Patel. 1:19 PM:- sent email to Mr. McGaha and asked him to submit remediation system design details and summary of work performed since Sept. 2017. 1:33 PM:- received email from Mr. McGaha including an IRM progress report and design details of LNAPL recovery system installed at well location MC-1. the LNAPL recovery system has been running since Oct. 2017 and has collected approx. 140 gal of oil. according to on-site system attendant, since the LNAPL pumping system has been installed, a significant decrease has been observed on the sheen in the Newtown Creek. also as per site attendant, bulkhead was partially collapsed at the site. report also mentioned that a water leak occurred in the alley in Feb. 2018, causing water to rise to grade in wells FN-39 and FN-12, making it impossible to measure a depth to water at these wells. few weeks later, 04/10/18, wells FN-15a and FN-14 were also under water. the water line leak is reportedly going to be repaired in the near future. report included results of gauging events conducted until 07/03/18. since 09/05/16 (last IRM report), product

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was noted in following wells: product thickness (in ft):
----------FN-14------FN-15------FN-40
12/01/17----------0.18
05/29/18--------0.91-------0.82 06/05/18--------0.70-------1.10
06/12/18--------0.01-------0.69 06/19/18--------0.02-------0.09
06/26/18--------0.01-------1.10 07/03/18----------0.80
08/10/18-Hiralkumar Patel. spoke with DEC Falls. he inspected site on 06/21/18 after bulkhead collapsed. he noticed repair activity without proper permit and asked to stop work. when he re-inspected the site in early July, bulkhead work was completed. Justin issued a NOV on 07/17/18. recently, he received a permit application to legalize previously replaced bulkhead. 09/05/18-Hiralkumar Patel. 12:40 PM:- visited site. currently, the site is being used by a lumber company and almost entire site is full of lumber. on-site tenant mentioned that they moved to the site in Nov. 2017 and doesn't know anything about on-site well monitoring. inspected water channel along the side of the property. silver sheen was noted within/outside the boom at the end of the channel near well MC-1. found partially sunken boat (boom around it) in middle of the channel along the side of the property. no sheen was noted around the boat. inspected on-site building near well MC-1 (former maintenance building), but no oil recovery system was found within the building. inspected alley on south side of the site. multiple 5 gal oil pails and two 55 gal drums were found along the building wall. 5 gal pails were empty but open. one of the drum was closed, but the other drum contained oil to the top and was open. 1:12 pm:- left message for Mr. McGaha and informed him about pails/drums in alley. asked him to immediately secure oil drum and remove other containers. 1:59 PM:- received call from Mr. McGaha. he mentioned 5 gal pails and 55 gal oil drum were removed from the site when lumber company occupied the site. the closed drum contains boom/dirt removed during well monitoring activities. he also confirmed that site representative has closed the oil drum. oil drum and pails will be removed soon. asked Mr. McGaha to schedule a site inspection. 10/05/18-Hiralkumar Patel. 9:30 AM:- visited site and met Mr. McGaha and Arron Abraham. Mr. McGaha showed location of oil recovery tank which is near northeast corner of main building, between the building wall and south bulkhead at the end of water channel. a compressor for the oil recovery system is in basement of main building. total of 240 gal of oil has been recovered since beginning of oil recovery using double diaphragm pump. the 275 gal tank was pumped out last month. asked Mr. McGaha to submit details about time duration and amount recovered from well MC-1. inspected wells in alley on south side of the site where oil found in well FN-15 only. based on shallow depth of groundwater beneath the alley and detection of oil in only one well now, suggested Mr. McGaha/Mr. Abraham to expedite remediation via soil excavation, removal of free phase product and installation of a larger diameter well in the excavation to recover any remaining product. Mr. McGaha will discuss with property owner. Mr. McGaha also proposed to install an another well, north of well MC-1 to increase product recovery using two wells, instead of one. asked him to submit email with plan for additional well installation and remediation via excavation (if approved by property owner) in south alley. 02/07/19-Hiralkumar Patel. discussed with DEC general counsel regarding compliance of existing consent order and pending bulkhead violations. DEC legal will contact property owner to discuss possible way to expedite both petroleum remediation and correction of bulkhead violations.

NYC DEP HAZ MAT (Continued) **S102143390**

02/12/19-Hrialkuamr Patel. 9:28 AM:- sent email to Mr. McGaha requesting update regarding proposed installation of an additional well near MC-1 to expedite LNAPL recovery, and possible excavation in south alley to remove heavily contaminated material. email copied to lepmanagement89@gmail.com. 03/11/19-Hiralkumar Patel. received email from Mr. McGaha (at 7:49 PM on 03/10/19) including a RAWP. 04/19/19-Hiralkumar Patel. reviewed RAWP submitted on 03/10/19. the RAWP proposes: 1) isolating the historic fill over the entire footprint of the site with in areas not already capped with asphalt or concrete, 2) treating residual areas of contamination via excavation (approx. 25 ft by 35 ft to a depth of 5 ft bg) in alley. endpoint samples from sidewalls will be collected after excavation in alley. bottom samples will not be collected as excavation will be below the water table. a larger diameter (not specified in the RAWP) will be installed with excavation area for post remediation well gauging for a period of three months. 3) multi-phase extraction (including oil/water separator and discharge permit) for LNAPL near well MC-1 via installation of additional recovery wells. multiphase extraction will be operated until LNAPL is removed and groundwater contamination meets stable and acceptable concentrations 4) establishing an declaration of covenant and restrictions and environmental easement. one of the prohibition will be residential land usage without NYSDEC approval 5) submission of site management plan including groundwater sampling from existing wells. groundwater will be sampled for one year (four monitoring events) for VOCs, SVOCs and metals. the RAWP needs to be revised due to following: - the work plan does not include size of replacement well in the alley after excavation - the work plan proposes to analyze soil samples for EPH and SVOCs, and not VOCs/SVOCs - schedule milestone refers to weeks from remedial action start 10:16 AM:- spoke with Mr. McGaha and discussed the proposed RAWP dated Mar. 2019. he mentioned that a 6 inch well will be installed in excavation in alley. informed Mr. McGaha that a revised RAWP is needed including following: - well size in alley excavation - all soil/groundwater samples must be analyzed for VOCs/SVOCs/metals - schedule milestone should be weeks from the RAWP approval (not weeks from remedial action start) 05/08/19-Hiralkumar Patel. 10:45 AM:- sent email to Mr. McGaha and asked him to submit a re-revised RAWP including/correcting following: - size of replacement well that will be installed in the alley after excavation - analysis of all samples for VOCs and SVOCs - schedule milestones should be weeks from the RAWP approval instead of weeks from remediation action start - clarification on # of recovery wells that will be installed around the existing well MC-1 email copied to lepmanagement89@gmail.com, Arthur Schwartz (arthur@aschwartzesq.com) and Aaron Abraham (aarbenabe@yahoo.com). **unapproved RAWP Mar. 2019 on desktop.** **MOSF documents on e-docs are only part of larger file in box located in basement storage.** **RAWP on desktop. need to review.**"

Remarks: "CLEANUP BY DEC WINSTON CONTRACTING INC. SUPERVISED BY SIGONA (DEC)"

All Materials:

Site ID:	59302
Operable Unit ID:	972795
Operable Unit:	01
Material ID:	406198
Material Code:	0003A
Material Name:	#6 fuel oil
Case No.:	Not reported

NYC DEP HAZ MAT (Continued) **S102143390**

Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

Name:	MORGAN OIL CORP.
Address:	200 MORGAN AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9211657 / 2003-11-19
Facility ID:	9211657
Facility Type:	ER
DER Facility ID:	57235
Site ID:	59303
DEC Region:	2
Spill Cause:	Equipment Failure
Spill Class:	A1
SWIS:	2401
Spill Date:	1992-12-23
Investigator:	SIGONA
Referred To:	Not reported
Reported to Dept:	1992-12-23
CID:	Not reported
Water Affected:	ENGLISH KILL
Spill Source:	Major Facility (MOSF) > 400,000 gal
Spill Notifier:	DEC
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	True
Remediation Phase:	0
Date Entered In Computer:	1993-01-14
Spill Record Last Update:	2012-04-19
Spiller Name:	Not reported
Spiller Company:	MORGAN OIL CORP.
Spiller Address:	200 MORGAN AVENUE
Spiller Company:	001
Contact Name:	Not reported
DEC Memo:	"4/19/12-Vought-Project manager for PIN project at Morgan Terminal (Open spill 9209135). Located box in file room with notes and reports from DEC Sigona PBS Inspection and Case. This file added to PIN drawer as PBS data may be needed for further cost recovery by NYSOAG if applicable."
Remarks:	"19 WELLS PUT ON SITE 15 WELLS SHOWS CONTAMINATION/REMEDIAL INVESTIGATION REPORT PREPARED BY FENLY AND NICOL. SITE SHOWS FREE PRODUCT MIGRATING OFF-SITE. DEC TO CLEAN/INSPECT MOUNDED TANKS/LEAKS."
	Not reported

All Materials:

Site ID:	59303
Operable Unit ID:	976105
Operable Unit:	01
Material ID:	405044
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported

NYC DEP HAZ MAT (Continued) **S102143390**

Material FA: Petroleum
Quantity: .00
Units: G
Recovered: .00
Oxygenate: Not reported

NY MANIFEST:
Country: USA
EPA ID: NYP003662657
Facility Status: Not reported
Location Address 1: 200 MORGAN AVENUE
Code: BP
Location Address 2: Not reported
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: 11201
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYP003662657
Mailing Name: NYC DEP HAZ MAT
Mailing Contact: JOANNE NURSE
Mailing Address 1: 59 17 JUNCTION BLVD
Mailing Address 2: Not reported
Mailing City: FLUSHING
Mailing State: NY
Mailing Zip: 11373
Mailing Zip 4: Not reported
Mailing Country: USA
Mailing Phone: 7185954675

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

Y216 **MORGAN OIL TERMINALS CORP** **NY MOSF UST** **1000889835**
NNW **200 MORGAN AVE** **RCRA NonGen / NLR** **NYD074359472**
1/8-1/4 **BROOKLYN, NY 11237** **FINDS**
0.229 mi. **ECHO**
1211 ft. **Site 7 of 14 in cluster Y** **NY MANIFEST**

Relative: Lower
Actual: 10 ft.

MOSF UST:
Id/Status: 2-1500 / INACTIVE FACILITY
SWIS Code: 61
Facility Town: NEW YORK CITY
Contact Phone: (718) 366-5108
Emergency Contact: HENRY FOSTER
Emergency Telephone: (718) 857-6472
CBS Number: Not reported
SPDES Num: 0-032824
Total Tanks: 7
Total Capacity: 1925000
Avg Throughput: 0
License Stat: 3
Facility Type: STORAGE TERMINAL/PETROLEUM DISTRIBUTOR
Prod Xfer Options: AC

MORGAN OIL TERMINALS CORP (Continued) **1000889835**

Expiration Date:	03/31/1991
Applic Rcvd:	01/14/1991
Operator:	HENRY FOSTER
Owner Name:	MORGAN OIL TERMINALS CORP.
Owner Address:	200 MORGAN AVENUE
Owner City,St,Zip:	BROOKLYN, NY 11337-
Owner Telephone:	(718) 366-5108
Owner Type:	Corporate/Commercial
Owner Status:	1
Owner Mark:	First Owner
Mail To Name:	MORGAN OIL TERMINALS CORP.
Mail To Address:	C/O SHATZKIN & FURMAN, P.C.
Mail To Address 2:	60 CUTTER MILL RD., SUITE 206
Mail City,St,Zip:	GREAT NECK, NY 11021-
Mail To Contact:	SCOTT E. FURMAN
Mail To Telephone:	(516) 487-3703
Legal Agent Name:	SCOTT FURMAN
Legal Agent Address:	60 CUTTERMILL ROAD
Legal Agent City,St,Zip:	GREAT NECK, NY 11021-
Date Filed:	00/82
Latitude:	40|42|40
Longitude:	73|56|00

Tank ID:	1
Tank Location:	UNDERGROUND
Install Date:	00/00
Capacity (Gal):	645000
Product:	NOS 5 OR 6 FUEL OIL
Tank Status:	In Service
Tank Type:	Steel/carbon steel
Tank Internal:	None
Tank External:	None
Pipe Location:	Aboveground
Pipe Type:	STEEL/IRON
Pipe Internal:	None
Pipe External:	Painted/Asphalt Coating
Second Contain:	None
Leak Detection:	None
Overfill Protection:	High Level Alarm
Dispenser:	Suction
Test Date:	Not reported
Date Closed:	Not reported
Status of Data:	Complete
Inspected Date:	02/22/1994
Inspector Initials:	Not reported
Inspector Status:	Not reported
Pipe Flag:	False
License Issued:	03/28/1990
Vessel Id:	Not reported
Renew Flag:	True
Renew Date:	11/23/1993
Federal Id No:	Not reported
COI Date:	/ /

Tank ID:	2
Tank Location:	UNDERGROUND

MORGAN OIL TERMINALS CORP (Continued) **1000889835**

Install Date:	00/00
Capacity (Gal):	7000
Product:	NOS 1,2, OR 4 FUEL OIL
Tank Status:	In Service
Tank Type:	Steel/carbon steel
Tank Internal:	None
Tank External:	None
Pipe Location:	Aboveground
Pipe Type:	STEEL/IRON
Pipe Internal:	None
Pipe External:	Painted/Asphalt Coating
Second Contain:	None
Leak Detection:	None
Overfill Protection:	High Level Alarm
Dispenser:	Suction
Test Date:	Not reported
Date Closed:	Not reported
Status of Data:	Complete
Inspected Date:	02/22/1994
Inspector Initials:	Not reported
Inspector Status:	Not reported
Pipe Flag:	False
License Issued:	03/28/1990
Vessel Id:	Not reported
Renew Flag:	True
Renew Date:	11/23/1993
Federal Id No:	Not reported
COI Date:	/ /

Tank ID:	3
Tank Location:	UNDERGROUND
Install Date:	00/00
Capacity (Gal):	55000
Product:	NOS 1,2, OR 4 FUEL OIL
Tank Status:	In Service
Tank Type:	Steel/carbon steel
Tank Internal:	None
Tank External:	None
Pipe Location:	Aboveground
Pipe Type:	STEEL/IRON
Pipe Internal:	None
Pipe External:	Painted/Asphalt Coating
Second Contain:	None
Leak Detection:	None
Overfill Protection:	High Level Alarm
Dispenser:	Suction
Test Date:	Not reported
Date Closed:	Not reported
Status of Data:	Complete
Inspected Date:	02/22/1994
Inspector Initials:	Not reported
Inspector Status:	Not reported
Pipe Flag:	False
License Issued:	03/28/1990
Vessel Id:	Not reported
Renew Flag:	True

MORGAN OIL TERMINALS CORP (Continued) **1000889835**

Renew Date: 11/23/1993
Federal Id No: Not reported
COI Date: / /

Tank ID: 4
Tank Location: UNDERGROUND
Install Date: 00/00
Capacity (Gal): 67000
Product: NOS 1,2, OR 4 FUEL OIL
Tank Status: In Service
Tank Type: Steel/carbon steel
Tank Internal: None
Tank External: None
Pipe Location: Aboveground
Pipe Type: STEEL/IRON
Pipe Internal: None
Pipe External: Painted/Asphalt Coating
Second Contain: None
Leak Detection: None
Overfill Protection: High Level Alarm
Dispenser: Suction
Test Date: Not reported
Date Closed: Not reported
Status of Data: Complete
Inspected Date: 02/22/1994
Inspector Initials: Not reported
Inspector Status: Not reported
Pipe Flag: False
License Issued: 03/28/1990
Vessel Id: Not reported
Renew Flag: True
Renew Date: 11/23/1993
Federal Id No: Not reported
COI Date: / /

Tank ID: 5
Tank Location: UNDERGROUND
Install Date: 00/00
Capacity (Gal): 507000
Product: NOS 5 OR 6 FUEL OIL
Tank Status: In Service
Tank Type: Steel/carbon steel
Tank Internal: None
Tank External: None
Pipe Location: Aboveground
Pipe Type: STEEL/IRON
Pipe Internal: None
Pipe External: Painted/Asphalt Coating
Second Contain: None
Leak Detection: None
Overfill Protection: High Level Alarm
Dispenser: Suction
Test Date: Not reported
Date Closed: Not reported
Status of Data: Complete

MORGAN OIL TERMINALS CORP (Continued) **1000889835**

Inspected Date: 02/22/1994
Inspector Initials: Not reported
Inspector Status: Not reported
Pipe Flag: False
License Issued: 03/28/1990
Vessel Id: Not reported
Renew Flag: True
Renew Date: 11/23/1993
Federal Id No: Not reported
COI Date: / /

Tank ID: 6
Tank Location: UNDERGROUND
Install Date: 00/00
Capacity (Gal): 400000
Product: NOS 1,2, OR 4 FUEL OIL
Tank Status: In Service
Tank Type: Steel/carbon steel
Tank Internal: None
Tank External: None
Pipe Location: Aboveground
Pipe Type: STEEL/IRON
Pipe Internal: None
Pipe External: Painted/Asphalt Coating
Second Contain: None
Leak Detection: None
Overfill Protection: High Level Alarm
Dispenser: Suction
Test Date: Not reported
Date Closed: Not reported
Status of Data: Complete
Inspected Date: 02/22/1994
Inspector Initials: Not reported
Inspector Status: Not reported
Pipe Flag: False
License Issued: 03/28/1990
Vessel Id: Not reported
Renew Flag: True
Renew Date: 11/23/1993
Federal Id No: Not reported
COI Date: / /

Tank ID: 7
Tank Location: UNDERGROUND
Install Date: 00/00
Capacity (Gal): 244000
Product: NOS 1,2, OR 4 FUEL OIL
Tank Status: In Service
Tank Type: Steel/carbon steel
Tank Internal: None
Tank External: None
Pipe Location: Aboveground
Pipe Type: STEEL/IRON
Pipe Internal: None
Pipe External: Painted/Asphalt Coating

MORGAN OIL TERMINALS CORP (Continued) **1000889835**

Second Contain: None
Leak Detection: None
Overfill Protection: High Level Alarm
Dispenser: Suction
Test Date: Not reported
Date Closed: Not reported
Status of Data: Complete
Inspected Date: 02/22/1994
Inspector Initials: Not reported
Inspector Status: Not reported
Pipe Flag: False
License Issued: 03/28/1990
Vessel Id: Not reported
Renew Flag: True
Renew Date: 11/23/1993
Federal Id No: Not reported
COI Date: / /

RCRA NonGen / NLR:
Date form received by agency: 01/01/2007
Facility name: MORGAN OIL TERMINALS CORP
Facility address: 200 MORGAN AVE
BROOKLYN, NY 11237-1014
EPA ID: NYD074359472
Mailing address: 21ST ST NYSDEC
LONG ISLAND CITY, NY 11101
Contact: Not reported
Contact address: 21ST ST NYSDEC
LONG ISLAND CITY, NY 11101
Contact country: US
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: UNKNOWN
Owner/operator address: NOT REQUIRED
NOT REQUIRED, NY 99999
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: UNKNOWN
Owner/operator address: NOT REQUIRED
NOT REQUIRED, NY 99999
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported

MORGAN OIL TERMINALS CORP (Continued) **1000889835**

Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2006
Site name: MORGAN OIL TERMINALS CORP
Classification: Not a generator, verified

Date form received by agency: 07/08/1999
Site name: MORGAN OIL TERMINALS CORP
Classification: Not a generator, verified

Date form received by agency: 07/01/1996
Site name: NYSDEC - MORGAN TERMINAL SITE
Classification: Large Quantity Generator

Date form received by agency: 04/12/1994
Site name: MORGAN OIL TERMINALS CORP
Classification: Large Quantity Generator

Hazardous Waste Summary:

. Waste code: D000
. Waste name: Not Defined

Violation Status: No violations found

FINDS:

Registry ID: 110009468290

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport,

MORGAN OIL TERMINALS CORP (Continued) **1000889835**

and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000889835
Registry ID:	110009468290
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110009468290

NY MANIFEST:

Country:	USA
EPA ID:	NYD074359472
Facility Status:	Not reported
Location Address 1:	47-40 21ST STREET
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	LONG ISLAND CITY
Location State:	NY
Location Zip:	11101
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYD074359472
Mailing Name:	NYSDEC
Mailing Contact:	JOSEPH SCEPPA
Mailing Address 1:	47-40 21ST STREET
Mailing Address 2:	Not reported
Mailing City:	LONG ISLAND CITY
Mailing State:	NY
Mailing Zip:	11101
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	7184824933

NY MANIFEST:

Document ID:	CTF0379437
Manifest Status:	C
seq:	Not reported
Year:	1995
Trans1 State ID:	TAF8660NJ
Trans2 State ID:	Not reported
Generator Ship Date:	01/12/1995
Trans1 Recv Date:	01/12/1995
Trans2 Recv Date:	/ /
TSD Site Recv Date:	01/12/1995
Part A Recv Date:	01/24/1995
Part B Recv Date:	01/27/1995
Generator EPA ID:	NYD074359472
Trans1 EPA ID:	NJD054126164
Trans2 EPA ID:	Not reported
TSDF ID 1:	CTD021816889

MORGAN OIL TERMINALS CORP (Continued) **1000889835**

TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	D001 - NON-LISTED IGNITABLE WASTES
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	04700
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	001
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	B Incineration, heat recovery, burning.
Specific Gravity:	100

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

AF217 **HYGIENE INDUSTRIES DIV OF API** **RCRA NonGen / NLR** **1000446382**
ESE **1177 FLUSHING AVE** **FINDS** **NYD986912947**
1/8-1/4 **BROOKLYN, NY 11237** **ECHO**
0.230 mi. **NY MANIFEST**
1215 ft. **Site 1 of 4 in cluster AF**

Relative: **Higher**
Actual: **19 ft.**

RCRA NonGen / NLR:

Date form received by agency:	01/01/2007
Facility name:	HYGIENE INDUSTRIES DIV OF API
Facility address:	1177 FLUSHING AVE BROOKLYN, NY 11237-1717
EPA ID:	NYD986912947
Mailing address:	FIFTH AVE - API NEW YORK, NY 10016
Contact:	Not reported
Contact address:	FIFTH AVE - API NEW YORK, NY 10016
Contact country:	US
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	02
Land type:	Facility is not located on Indian land. Additional information is not known.
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	ASSOCIATED PRODUCTS INC

HYGIENE INDUSTRIES DIV OF API (Continued) **1000446382**

Owner/operator address: NOT REQUIRED
NOT REQUIRED, WY 99999
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: ASSOCIATED PRODUCTS INC
Owner/operator address: NOT REQUIRED
NOT REQUIRED, WY 99999
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2006
Site name: HYGIENE INDUSTRIES DIV OF API
Classification: Not a generator, verified

Date form received by agency: 07/08/1999
Site name: HYGIENE INDUSTRIES DIV OF API
Classification: Not a generator, verified

Date form received by agency: 09/14/1990
Site name: HYGIENE INDUSTRIES DIV OF API
Classification: Large Quantity Generator

HYGIENE INDUSTRIES DIV OF API (Continued) **1000446382**

Hazardous Waste Summary:

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: U213
. Waste name: FURAN, TETRAHYDRO-(I) (OR) TETRAHYDROFURAN (I)

Violation Status: No violations found

Evaluation Action Summary:
Evaluation date: 02/05/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

FINDS:

Registry ID: 110004452887

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000446382
Registry ID: 110004452887
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110004452887

NY MANIFEST:
Country: USA
EPA ID: NYD986912947
Facility Status: Not reported
Location Address 1: 1177 FLUSHING AVE
Code: BP
Location Address 2: Not reported
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: 11201
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYD986912947
Mailing Name: HYGIENE INDUSTRIES
Mailing Contact: RICHARD GUGGENHEIMER
Mailing Address 1: 1177 FLUSHING AVENUE

HYGIENE INDUSTRIES DIV OF API (Continued) **1000446382**

Mailing Address 2:	Not reported
Mailing City:	BROOKLYN
Mailing State:	NY
Mailing Zip:	11201
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	2126896300

NY MANIFEST:

Document ID:	NJA0986491
Manifest Status:	K
seq:	Not reported
Year:	1990
Trans1 State ID:	NJDEPS103
Trans2 State ID:	Not reported
Generator Ship Date:	11/05/1990
Trans1 Recv Date:	11/05/1990
Trans2 Recv Date:	/ /
TSD Site Recv Date:	11/05/1990
Part A Recv Date:	11/19/1990
Part B Recv Date:	12/06/1990
Generator EPA ID:	NYD986912947
Trans1 EPA ID:	NJD000813477
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD002454544
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	U213 - TETRAHYDROFURAN (L)
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	00440
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	008
Container Type:	DM - Metal drums, barrels
Handling Method:	R Material recovery of more than 75 percent of the total material.
Specific Gravity:	100
Waste Code:	D001 - NON-LISTED IGNITABLE WASTES
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	00660
Units:	G - Gallons (liquids only)* (8.3 pounds)

HYGIENE INDUSTRIES DIV OF API (Continued) **1000446382**

Number of Containers:	012
Container Type:	DM - Metal drums, barrels
Handling Method:	R Material recovery of more than 75 percent of the total material.
Specific Gravity:	100

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

AA218 **CON EDISON** **NY MANIFEST** **S117060027**
WSW **317 BOERUM ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.230 mi.
1215 ft. **Site 8 of 11 in cluster AA**

Relative:
Lower

Actual:
17 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004522322
Facility Status:	Not reported
Location Address 1:	317 BOERUM ST
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11206
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004522322
Mailing Name:	CON EDISON
Mailing Contact:	CON EDISON
Mailing Address 1:	4 IRVING PL
Mailing Address 2:	15TH ST
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10001
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	05/06/2014
Trans1 Recv Date:	05/06/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	05/06/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004522322
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105

CON EDISON (Continued) **S117060027**

TSDF ID 2:	Not reported
Manifest Tracking Number:	002418822GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	1200
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

AA219 **CON EDISON MANHOLE: 61582** **RCRA NonGen / NLR** **1017774421**
WSW **317 BOERUM ST** **NYP004522322**
1/8-1/4 **BROOKLYN, NY 11206**
0.230 mi.
1215 ft. **Site 9 of 11 in cluster AA**

Relative: RCRA NonGen / NLR:
Lower

Date form received by agency:	06/06/2014
Facility name:	CON EDISON MANHOLE: 61582
Facility address:	317 BOERUM ST
	BROOKLYN, NY 11206
EPA ID:	NYP004522322
Mailing address:	IRVING PL, 15TH FL NE
	NEW YORK, NY 10003
Contact:	THOMAS TEELING
Contact address:	Not reported
	Not reported
Contact country:	Not reported
Contact telephone:	212-460-3770
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator

Actual:
17 ft.

CON EDISON MANHOLE: 61582 (Continued) **1017774421**

Description: Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 05/06/2014
Site name: CON EDISON
Classification: Large Quantity Generator

Date form received by agency: 05/06/2014
Site name: CON EDISON
Classification: Not a generator, verified

Violation Status: No violations found

W220 ESE 1/8-1/4 0.231 mi. 1218 ft. **CON EDISON MANHOLE 55951** **RCRA NonGen / NLR 1010326502**
IRVING AVE & MELROSE ST **NY MANIFEST NYP004141511**
BROOKLYN, NY 11237

Site 3 of 3 in cluster W

Relative: Higher

Actual: 21 ft.

RCRA NonGen / NLR:
Date form received by agency: 08/30/2006
Facility name: CON EDISON MANHOLE 55951
Facility address: IRVING AVE & MELROSE ST
BROOKLYN, NY 11237
EPA ID: NYP004141511
Mailing address: 4 IRVING PL, RM 828
NEW YORK, NY 10003
Contact: ANDREW FIORE
Contact address: 4 IRVING PL, RM 828
NEW YORK, NY 10003
Contact country: US
Contact telephone: 212-580-8383
Contact email: Not reported
EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No

CON EDISON MANHOLE 55951 (Continued) **1010326502**

Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 08/29/2006
Site name: CON EDISON
Classification: Not a generator, verified

Date form received by agency: 08/28/2006
Site name: CON EDISON
Classification: Unverified

Violation Status: No violations found

NY MANIFEST:
Country: USA
EPA ID: NYP004141511
Facility Status: Not reported
Location Address 1: MH55951-IRVING AVE & FLUSHING
Code: BP
Location Address 2: Not reported
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: Not reported
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYP004141511
Mailing Name: CONSOLIDATED EDISON
Mailing Contact: FRANKLYN MURRAY
Mailing Address 1: 4 IRVING PL RM 828
Mailing Address 2: Not reported
Mailing City: NEW YORK
Mailing State: NY
Mailing Zip: 10003
Mailing Zip 4: Not reported
Mailing Country: USA
Mailing Phone: 2124602808

NY MANIFEST:
Document ID: NYE1305045
Manifest Status: Not reported
seq: 01
Year: 2006
Trans1 State ID: NYD006982359

CON EDISON MANHOLE 55951 (Continued) **1010326502**

Trans2 State ID:	Not reported
Generator Ship Date:	04/12/2006
Trans1 Recv Date:	04/12/2006
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	04/13/2006
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004141511
Trans1 EPA ID:	18887JU
Trans2 EPA ID:	Not reported
TSDF ID 1:	NYD077444263
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	B007 - OTHER MISCELLANEOUS PCB WASTES
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	00050
Units:	K - Kilograms (2.2 pounds)
Number of Containers:	001
Container Type:	DM - Metal drums, barrels
Handling Method:	L Landfill.
Specific Gravity:	01.00

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

AF221 **UNIVERSAL USED AUTO PARTS INC (BROOKLYN)** **NY SWF/LF** **S107488576**
ESE **1175 FLUSHING AVE** **NY Spills** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.233 mi.
1228 ft. **Site 2 of 4 in cluster AF**

Relative:
Higher

Actual:
19 ft.

SWF/LF:

Flag:	INACTIVE
Region Code:	2
Phone Number:	7183811000
Owner Name:	Universal Used Auto Parts Inc
Owner Type:	Private
Owner Address:	1175 Flushing Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11237
Owner Email:	unviersalscapprocessors@gmail.com
Owner Phone:	7183811000

UNIVERSAL USED AUTO PARTS INC (BROOKLYN) (Continued) **S107488576**

Contact Name: Louis Ruggiero
Contact Address: 1175 Flushing Avenue
Contact Addr2: Not reported
Contact City,St,Zip: Brooklyn, NY 11237
Contact Email: universalscrapprocessors@gmail.com
Contact Phone: 7183811000
Activity Desc: z Retired - Vehicle Dismantling Facility
Activity Number: [7094890]
Active: No
East Coordinate: 590817
North Coordinate: 4506665
Accuracy Code: Not reported
Regulatory Status: Not reported
Waste Type: Not reported
Authorization #: Not reported
Authorization Date: Not reported
Expiration Date: Not reported
Operator Name: Universal Used Auto Parts Inc
Operator Type: Private
Laste Date: Not reported

SPILLS:
Name: OLD GAS STATION -MTBE
Address: 1175 FLUSHING AVE
City,State,Zip: BROOKLYN, NY
Spill Number/Closed Date: 0510000 / Not Reported
Facility ID: 0510000
Facility Type: ER
DER Facility ID: 305928
Site ID: 355883
DEC Region: 2
Spill Cause: Unknown
Spill Class: C4
SWIS: 2401
Spill Date: 2005-11-21
Investigator: KMFORSTE
Referred To: RAP IMPLEMNTD; REPLACE/REPAIR WELLS OCT '1
Reported to Dept: 2005-11-21
CID: 407
Water Affected: Not reported
Spill Source: Gasoline Station or other PBS Facility
Spill Notifier: Other
Cleanup Ceased: Not reported
Cleanup Meets Std: False
Last Inspection: Not reported
Recommended Penalty: False
UST Trust: False
Remediation Phase: 4
Date Entered In Computer: 2005-11-21
Spill Record Last Update: 2018-03-30
Spiller Name: UNKNOWN
Spiller Company: OLD GAS SATION
Spiller Address: 1175 FLUSHING AVE
Spiller Company: 001
Contact Name: UNKNOWN
DEC Memo: "need to send CSL 01/13/06-Vought-Received call from Ted Yen (718-857-3100) and returned call and no answer on phone.

UNIVERSAL USED AUTO PARTS INC (BROOKLYN) (Continued) **S107488576**

02/24/06-Vought-Spoke with Ted Yen and tank closure report. 02/27/06-Hiralkumar Patel. Abstracts of Tank Closure Report: - Work performed: notification with NYSDEC for closure of tanks, excavation, cleaning/purging and removal of eleven (11) 550 gallon gasoline USTs - total of 239.78 tons of contaminated soil was removed from the site and transported to Soil Safe Inc. Bridgeport in Logan Township NJ. - soil and site assessments were conducted using PGM 30 PID. - based on visual and olfactory evidence, there was some contamination localized in the area located on the west perimeter of the tank grave near the fill pipes. (PID readings 80-150 ppm) - six end point soil samples (EP-1, EP-2, EP-3, EP-4, BS-1 & BS-2) taken from the four side walls and mid-grave east and mid-grave west. - groundwater flow is assumed to be in a westerly direction. - no groundwater intrusion in the pit. - groundwater contamination was identified from a Phase-II subsurface assessment previously conducted by Giorgio Envirnomental. - no private wells in the vicinity of tanks. - two groundwater wells were installed at depth of 22'-24' on two separate locations on the subject property. One monitoring well installed on the middle of the previous tank grave and second well was installed on northwest of the previous tank grave (east of office) Report Review Letter, with the requirement of water sample at middle of previous tank grave, sent out to James Ruggiero. faxed to Ted yen at don carlo. 03/28/06-Hiralkumar Patel. REceived fax from Don Carlo regarding groundwater sample result. but i have received only first four pages, and doesn't have lab results. Spoke with Danny and he told me that he going to drop report personally today. 04/04/06-Vought-Received and reviewed groundwater analyticals received from Don Carlo Environmental Services-3/27/06. Groundwater analyticals show 130ppb benzene(MW1), 1600ppb toluene(MW1), 1200ppb ethylbenzene(MW1), 4400ppb xylene(MW1) and 300ppb napthalene(MW1). Spill referred to DEC Austin for transfer due to groundwater contamination. 04/06/06-Vought-Spill transferred from DEC Vought to DEC Tang as per DEC Austin due to groundwater contamination and need for long term remediation. 4/12/06 - reviewed the case file. Will wait for the next round of groundwater sample before assigning the priority. - KST. 10/30/06 - Reassigned from Tang to Sun. (JS/MS) 1/3/07: Called Don Carlo (Ted Yen) and left message with secretary inquiring about latest round of ground water sampling at site. Expecting a return call. (JS/MS) 3/1/07: Followed up with Don Carlo- client has not yet paid them for the last round of groundwater sampling, once payment is received, sampling will be performed. (JS/MS) 7/28/07: Client has paid and on-site sampling is to be conducted on 7/15/07 as per Dan from DCS Services. (JS/MS) 1/24/08: MS spoke to Ted to get update. He said property came under new ownership and he is waiting for them to approve proposal to continue work. He will call back this afternoon or tomorrow to let me know details as he was out of office. (MS/JS) 2/5/08: DCES is taking 5th sampling event in 3 weeks from today. Danny from DCES is emailing all results to DEC to obtain electronic copies. (JS/MS) 4/3/08: Spoke to Danny Singh from Don Carlo. Reported frozen groundwater in monitoring wells. Supposed to resample 4/10/08. (JS/MM) 4/23/08: Email from Don Carlo (JS/MM) Please be advised that the groundwater samples at the above referenced site were collected as per our telephone conversation; however, the samples weren't collected on April 10, 2008 they were collected approx one week later. The samples were sent to York Analytical Laboratories in Stratford, CT for analysis. Upon receipt of the analytical results, you will receive the necessary lab data together with our Groundwater

UNIVERSAL USED AUTO PARTS INC (BROOKLYN) (Continued) **S107488576**

monitoring table. Danny Singh 06/02/08: Received groundwater table from Don Carlo Environmental; missing lab results from latest round of sampling. Ask to resubmit and correct for updated TAGM 4046 table. York Labs MDL for MTBE, BTEX 50 ppb to 125 ppb...when groundwater standards are 0.7/5/10 ppb (JS/MM) 08/05/08: Transferred to Kolleeny/Mandac. - JK 10/13/08: Danny Singh stated Don Carlo did not sample because owner did not give permission to sample (JK/MM) 01/06/09: Left message with receptionist for Danny Singh to call back with update. (JK/KG) 01/15/09: Tried to call Don Carlo, but no answer (JK/KG) 01/26/09: Left message with receptionist for Danny Singh to call back with update. (JK/KG) 02/03/09: K. Green sent D. Singh email: Mr. Singh, I will be managing Spill No. 0510000 located at 1175 Flushing Avenue from now on, under supervision of Jon Kolleeny. My contact information is provided below. Can you please provide me with an update on status of this site? Latest rpt I have is a GW monitoring rpt for samples collected in April 2008. Have you been able to collect any samples since then? Please feel free to contact me if you have any questions. Response from Singh: Ms. Green, We have tried several times to contact owner for monies to continue with GW monitoring at site. Todate no response were gained. Our office will not continue with monitoring until money is received from client. (JK/KG) 02/09/09: Letter sent to Ruggiero requesting: Dept requires that a subsurface investig work plan be prepared & submitted for our review by 3/13/09. Work plan should include install'n of at least one addt'l monitoring well to further delineate GW contaminant plume and determine GW flow direction. During well install'n, soil must be sampled continuously and screened with a PID, and sample with highest PID reading and sample just above water table should be submitted for lab analysis. New and existing wells should be surveyed so that local GW flow direction can be determined, and GW samples should be collected from all wells for lab analysis. Work plan should include a site location map and a site plan showing current and former tank locations and locations of existing and proposed monitoring wells, and a North arrow and scale bar must be included on site plan. An investigation summary rpt with conclusions and recommendations should be submitted to DEC. SIWP due 3/19/09. (JK/KG) 02/17/09: Letter sent on 2/9/09 to Mr. Ruggiero at 1175 Flushing Ave was returned to sender. Addressee moved and did not leave a forwarding address. Sent Danny Singh an email to see if he has any contact information for Mr. Ruggiero. (JK/KG) 02/23/09: No response from D. Singh pertaining contact info for Ruggiero. Property Shark gives an address for Ruggiero in Howard Beach, NY. Re-sent letter requesting work plan be submitted by 3/27/09. Letter sent to 163-14 92nd St, Howard Beach, NY 11414. J. Kolleeny also sent an email to D. Singh requesting updated contact info (if any) for Ruggiero. (JK/KG) 03/25/09: On 3/4/09 Jon rec'd call from D. Singh stating that Ruggiero rec'd letter and the work will be performed. Singh was supposed to fax a letter to Jon. (JK/KG) 03/31/09: I spoke to D. Singh to find out status of site. He said DCES just received payment from Ruggiero and once the check clears they will begin to prepare the work plan. He will give me an update in the next couple of days.(JK/KG) 04/06/09: Rec'd voice message from D. Singh on 4/3/09 stating that payment has been rec'd and he has begun preparing the work plan. He was requesting an extension until 4/6/09. Rec'd pdf of work plan; under review. (JK/KG) 04/13/09: Rev'd work plan and spoke to D. Singh about making some revisions. He will resubmit a pdf of the revised plan and send me a hard copy. (JK/KG) 04/21/09: Rec'd pdf of revised Subsurface

UNIVERSAL USED AUTO PARTS INC (BROOKLYN) (Continued) **S107488576**

Investigation & GW Monitoring Well Work Plan dated 4/20/09. D. Singh will mail hardcopy. Letter sent approving work plan; investig summary rpt is due 6/19/09. Scope of work includes install'n of an addt'l monitoring well, collection of soil and GW samples, and submission of investig summary rpt. Letter states that new and existing wells should be surveyed so that local GW flow direction can be determined and that proposed well MW-3 should be installed as close as possible to existing on-site building, conditions permitting. D. Sing has indicated that property is a metal scrap/salvage yard and open space is limited. (JK/KG) 06/15/09: Rec'd pdf and hardcopy of Envt'l Subsurface Assessment rpt dated 6/5/09 prepared by Don Carlo. Spoke to D. Singh and requested well install'n/boring log for W-3 and site map. He said wells were not surveyed because owner did not want to pay to have it done. Well W-3 was installed on 4/22/09 and all wells were sampled for GW on 4/23/09. No SVOCs or VOCs detected in soil samples collected from B-3 (W-3). No SVOCs or VOCs detected in GW in W-2 and W-3. No SVOCs detected in GW in W-1. Detected VOCs include: Benzene (99 ug/L), n-Butylbenzene (59 ug/L), Ethylbenzene (990 ug/L), Isopropylbenzene (68 ug/L), Napthalene (850 ug/L), n-Propylbenzene (150 ug/L), 1,2,4-Trimethlybenzene (2,200 ug/L), 1,3,5-Trimethlybenzene (640 ug/L), m,p-Xylene (3,700 ug/L), o-Xylene (91 ug/L). (JK/KG) 06/16/09: Rec'd pdf of boring log for W-3 and site plan with well locations. I spoke to Danny Singh and requested a well construction log as well. I asked him if depths given on GW analysis table were depths to water measured for each sample. He said they were. There is a huge discepency in depths. W-1 and W-2 were installed to depths of 22 and 24 ft bgs and measured depths to water vary from 32' bgs to 14' bgs (i.e., deeper than total depth of well). Danny said he would look into it. I also asked him what kind of probe they were using to measure depth to water. He said it is an electronic water sensing device and it doesn't detect product. I also asked him to find out what is smallest interval probe can detect, since usually it is 0.01'. He said he doesn't have well construction details for W-1 or W-2. I asked him if W-3 was installed as close to building as possible and he said that it was. There is a scale for trucks directly behind building and well was installed next to a dumpster in an area that would be accessible. (JK/KG) 06/18/09: Letter dated 6/17/09 sent to Ruggiero requiring a work plan for a supplemental subsurface investigation be submitted by 7/17/09. Wells must be surveyed. A Stipulation Agreement was issued to Ruggiero on 6/18/09. Signed stip is due on 7/2/09. (JK/KG) 07/02/09: Rec'd faxed copy of signed Stipulation Agreement. Called Mr. Ruggiero (718-381-1000 or 718-791-4351) and he said a hard copy of Stip would be delivered today. He wanted clarification on letter sent on 6/17. I told him contaminant plume needs to be delineated and that was reason DEC is requiring a work plan for further investigation. He said he contacted a surveyor but they were not familiar with surveying monitoring wells. I explained to him process of surveying wells. Rec'd original signed Stip. (JK/KG) 07/06/09: Stipulation Agreement was executed on 7/3/09. (JK/KG) 07/14/09: Rec'd messsage from Zeb Youngman of P.W. Grosser (631-589-6353). Spoke to Youngman on 7/14. He said he was contacted by Ruggiero to submit a proposal for the additional investigation. If PWGC's proposal is accepted he will need some extra time to submit the work plan. (JK/KG) 07/20/09: Rec'd call from Ruggiero. He informed me that he has hired PWGC and a work plan will be submitted soon. Rec'd an email from Youngman as well, stating he will have the work plan by 7/23/09. (JK/KG) 07/23/09: Rec'd pdf of

UNIVERSAL USED AUTO PARTS INC (BROOKLYN) (Continued) **S107488576**

Monitoring Well Installation / Groundwater Monitoring Work Plan dated 7/21/09 submitted by PWGC. The work plan proposes installation of one permanent and three temporary monitoring wells, collection of groundwater samples, a groundwater elevation survey, and implementation of quarterly groundwater monitoring at the site for one year. The work plan was approved with the following comments: During well installation, soil must be sampled and screened continuously, and the sample with the highest PID reading and the deepest dry soil sample should be submitted for laboratory analysis. If PID readings are not detected, only the deepest dry soil sample need be analyzed. In addition to surveying the existing and new monitoring wells, well construction details such as well depth and screened interval should be determined for the existing wells. If the existing wells are not screened appropriately to assess groundwater conditions, additional wells will need to be installed. Well construction logs should be provided for all wells. The proposal to limit quarterly monitoring to a one-year period is not approved at this time. The results of this investigation should be presented in a summary report with conclusions and recommendations for further action. An investigation summary report is due by 9/25/09. Email for Ruggiero - JCR327@aol.com (JK/KG) 07/29/09: Rec'd call from Youngman. He was at the site today to survey and assess the condition of the existing wells. He sent a revised site plan showing the GW flow direction and proposed location of the new well, as well as GW elevation survey data. (eDocs)(JK/KG) 08/03/09: A copy of the executed Stip sent certified mail to Ruggiero was returned to the Dept. as unclaimed. It was resent to Ruggiero via email and regular mail. Spoke to Ruggiero and he said he receives mail at the Howard Beach address. (JK/KG) 08/05/09: Rec'd an email from Youngman stating that PWGC will be installing the well and performing soil and groundwater sampling on 8/7. (JK/KG) 09/21/09: Rec'd call from Ruggiero. He said PWGC has proposed injections and he wanted to know if it would be a good approach for site. I told him that I would have to review recent data when rpt is submitted. Once rpt is submitted & reviewed he would like to discuss PWGC's recommendations as soon as possible. He can be reached on his cell phone (718-791-4351). Rec'd Monitoring Well Installation / First Quarter Groundwater Monitoring Report dated 9/21/09 submitted by PWGC. On 8/7/09 one permanent and three temporary monitoring wells were installed. Soil and GW contamination was encountered. The new and existing monitoring wells were surveyed and groundwater flow is northerly. Soil samples were collected at 10-12' and 14-16' bgs from borings GW-1, 2, and 3 and at 10-12' bgs from MW-4. Depth to water is approximately 12' bgs. VOCs in excess of RSCO's were found in GW-1 (10-12' and 14-16'), GW-2(14-16'), and GW-3(14-16'). Summary of GW samples: MW-1: Total VOCs - 2,779 ug/L MW-2: Total VOCs - 185 ug/L MW-3: Total VOCs - 3.26 ug/L MW-4: Total VOCs - 4.04 ug/L GW-1: Total VOCs - 9,217 ug/L GW-2: Total VOCs - 7,570 ug/L GW-3: Total VOCs - 2,849 ug/L PWGC recommends chemical oxidation and ORC injections, followed by quarterly monitoring and reporting. Need to respond to recommendations. Contaminant plume needs to be delineated prior to remedial action. (JK/KG) 09/22/09: A letter was sent to Ruggiero requiring a brief work plan with a diagram showing the proposed locations for the new wells by 10/23/09. At least 2 wells should be installed: one to the NE of the former USTs and one to the SW of the former USTs. Soil samples should be collected during installation. After the wells have been installed and sampled a remedial action plan detailing PWGC's

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proposed remedial strategy should be submitted. (JK/KG) 09/23/09: Zeb Youngman called to discuss the requirement to install additional wells. He doesn't think they are necessary. I told him that the contaminant plume needs to be delineated prior to implementing remedial action. The well proposed to the SW of the former USTs does not need to be installed at this time. (JK/KG) 11/3/09 Spill case transferred from J. Kolleeny to J.A. Maisonave. - JAM 11/4/09 Spoke to Zeb Youngman. He will be submitting a work plan to install additional monitoring wells and propose RegenOx injections to address soil and GW contamination. - JAM 1/20/10 Reviewed the Remedial Action Work Plan (RAWP) submitted by P.W. Grosser (PWG) via email on January 4, 2010. The report is dated December 2009. The work plan proposes injecting chemical oxidants and oxygen releasing compounds to address groundwater contamination in the former UST area and installing two (2) additional monitoring wells to fully delineate groundwater contamination. Details are as follows: 1. 15 injection points in an area approximately 30 X 50 feet. 2. Based on RegenOx calculations, a total of 2,640 lbs of RegenOx and 450lbs of ORC advanced will be injected in 2 events. 3. First injection event will consist of 1,500 lbs of RegenOx (750 lbs each of Part-A and Part-B) 4. Second injection event will consist of a mixture of 1,110 lbs of RegenOx (750 lbs of Part-A, 360 lbs of Part-B) and 450 lbs of ORC advanced. 5. Installing 2 monitoring wells to the North and South of the Former UST area to fully delineate groundwater contamination. I issued a response letter to James Ruggiero approving the installation of the two monitoring wells. The locations of the wells should be modified as shown on a diagram, which was attached and issued with the letter. A third well should be installed to the northwest of the on-site building, between existing wells MW-2 and MW-4, also shown on the diagram. Groundwater samples should be collected from all wells and analyzed for the TAGM 4046 list of petroleum related VOCs as well as for chlorinated solvents (in response to the one boring have a solvent odor according to the Sept 2009 well installation report). A summary report should be submitted for review prior to implementing the proposed remedy and should include any changes to the remedy based on new information. The RAWP and DEC response letter are uploaded to eDocs. - JAM 2/5/10 Received an email from Jon Eichler from PW Grosser. The 3 monitoring wells will be installed Saturday, February 6th. - JAM 3/31/10 Received the Supplemental Monitoring Well Installation and Sampling Report submitted by PW Grosser dated March 15, 2010. On February 6, 2010, three new monitoring wells (MW-5 through MW-7) were installed and well MW-4 was re-installed because it had been destroyed. Groundwater was encountered at approx. 12 feet. Soil was screened and sampled only in new wells. PID readings above background were only observed in well MW-7 from 4' to 12' below grade. A soil sample was collected from deepest dry soil interval in each of wells and also from 5'-7' depth interval of MW-7 (highest PID reading). Laboratory results showed several VOCs in soil samples collected from MW-6 and MW-7, however, concentrations were below RSCOs. No VOCs were detected in soil from well MW-5. Groundwater samples were collected from wells MW-1 through MW-7. VOCs were detected at concentrations exceeding DEC standards from wells MW-1, MW-2, MW-5, MW-6, and MW-7, and Total VOCs ranged from 58 ug/L in well MW-5 to 12,413 ug/L in well MW-1. Even though well MW-1 had highest concentration of Total VOCs, well MW-2 had highest concentrations of petroleum related VOCs (MW-1 had Acetone concentration of 11,500 ug/L). Total BTEX concentration in well MW-2

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was 2,517 ug/L. Contamination in MW-2 has always been relatively low in previous sampling events (185 ug/L Total VOCs from August 2009 sampling event). PW Grosser does not propose any changes in the RAWP, which was submitted in January 2010, even though the Total VOC concentrations increased in well MW-2. On March 31, 2010, DEC issued a letter appproving the RAWP and states that, Follow-up groundwater sampling must be performed subsequent to the chemical oxidant and ORC injections to evaluate the effectiveness of the remedy. If this remedy is not effective at reducing groundwater contamination, then additional remediation will be required. The report and the approval letter are uploaded to eDocs. - JAM 10/20/10 From emails with Jim Eichler: First round of ChemOx injections performed on July 30 and 31, 2010. The second round of injections occurred on September 11, 2010. The first post-injection sampling is scheduled for Tuesday, October 26, 2010. The Remedial Action Report should be completed in November 2010. - JAM 05/09/11: This spill case is transferred from J. Maisonave to J. Kolleeny. Received email from John Eichler of PW Grosser: We are performing a round of quarterly GW monitoring at 1175 Flushing Avenue in Brooklyn this Friday. I sent email reply asking him to send me pdf's of any rpts more recent than their 3/15/10 Suppl'tal Mon Well Install'n & Sampling Rpt, and noting that Joe Maisonave's notes indicated he was expecting a Remedial Action Rpt in late 2010. Eichler sent reply: We re finalizing RAR. We ve had some delays with project, but chemox injections went smoothly. We ll have RAR to you soon. - J. Kolleeny 06/03/11: Reviewed May 2011 Remedial Action Rpt by P.W. Grosser (in eDocs). Rpt summarizes injections of RegenOx and ORC Advanced in August and Sept. 2010 and gives results of GW sampling done in Feb. and Oct. 2010, before and after injections. Most impacted wells, MW-1 and MW-2, showed significant declines in contaminant levels after injections: MW-1 had 1,021 ug/L total VOCs in Oct. 2010, down from 12,413 ug/L in Feb. 2010; MW-2 had 892 ug/L tVOCs in Oct. 2010, down from 4,540 ug/L in Feb. 2010. Rpt recommends replacing wells MW-5 and MW-7, which were damaged/destroyed (resp.) by site activities, and continued quarterly GW sampling to monitor contam trends. I sent email (in eDocs) to James Ruggiero (RP, jcr327@aol.com), cc to John Eichler of PWGC, approving these recommendations. Changed site priority ranking from P0 to P2 since site is in follow-up monitoring after remedial action. - J. Kolleeny 04/13/12: Received email from John Eichler of PWGC, with attached pdf file of GW Mon Rpt by PWGC (rpt was dated Jan. 2012 until I pointed this out to John, then he sent rpt with April 2012 on title page; both are in eDocs). Email stated: Jon, Attached is GW mon rpt for this site. We intend to replace damaged monitoring wells and perform another round of sampling in very near future. I will give you 2 weeks notice of this fieldwork. Please contact me with your questions and comments. Rpt presents results of GW sampling in Dec. 2011; four of 7 wells were sampled; MW-3 and MW-7 could not be found and MW-5 is partially filled with sediment so could not be sampled. Sample results for wells sampled show significant impacts only in MW-1, which had 4,207 ug/L total VOCs (up from 1,748 ug/L in May 2011). PWGC recommends continued quarterly GW sampling and replacement of wells MW-3, MW-5 and MW-7. I sent email (in eDocs) to James Ruggiero (RP, jcr327@aol.com), cc to John Eichler, approving continued quarterly GW sampling and replacement of wells MW-5 and MW-7; said MW-3 need not be replaced at this time, but if significant increases in VOCs are seen in wells MW-4 and/or MW-7, then MW-3 should be replaced. I further noted that if contam in MW-1 does not

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decrease significantly, then addt'l injections and/or other remedial actions may be warranted. - JK 10/04/12: Received email from John Eichler of PWGC: Jon, We will be replacing and repairing damaged monitoring wells at Spill Site # 05-10000 located at 1175 Flushing Avenue in Brooklyn on Saturday, October 13, 2012. We will sample wells approximately 2 weeks after that. Please contact me if you have any questions or comments. Thank you. - J. Kolleeny 03/06/13: I sent email to John Eichler of PWGC: John, It's been a while since I've heard anything about this site or received a GW monitoring rpt. Latest GW data I have are from Dec. 2011 (submitted in an April 2012 monitoring rpt). Your email below [10/4/12] states that damaged monitoring wells at site were to be replaced in Oct. 2012, and then sampled two weeks afterwards. Were damaged wells replaced? If so, which ones? April 2012 rpt indicates that well MW-5 was dry, having been partly filled in with sediment; MW-5 is only well down-gradient of former UST area, where RegenOx/ORC Advanced injections were performed, so replacement (or flushing/redevelopment) of that well is critical. Have monitoring wells (replaced and previously existing) been sampled? I've had an inquiry regarding this site from my supervisors here at DEC. Please provide a project update as soon as possible. Received email reply from Eichler: Jon, We replaced monitoring wells MW-2 and MW-7, and repaired MW-4. I checked MW-5 during repair and it appears to be viable. So all of wells, with exception of MW-3 (consistently outside impacted area), are ready to be sampled. I have impressed upon owner importance of sampling wells as soon as possible. I expect that he will respond quickly and I will let you know as soon as we schedule a round. Please contact me if you would like to discuss this further. I then sent reply: Thanks for your quick response. If I understand your email correctly, replacement wells were installed but no GW sampling has been done at site since Dec. 2011. Please let me know if you need me to contact owner about doing sampling. Eichler sent reply: Thanks. Jaime Ruggiero (owner) just responded to me. It looks like we re back on track. I will contact you next week with schedule. - J. Kolleeny 04/16/13: On 4/84/13, I sent email to John Eichler of PWGC: John, Have you been able to schedule a round of GW sampling at this site? Recently, DEC has been concerned about housekeeping practices at this site (an active scrap processing facility), and I would like to be able to confirm that on-site activities are not adversely impacting monitoring wells and GW in general. Please let me know as soon as possible. On 4/16/13, Eichler sent reply: Jon, We re looking to sample monitoring wells at 1175 Flushing Ave, Brooklyn on Saturday, May 4. Please contact me if you have any questions. - J. Kolleeny 06/05/13: Received email from John Eichler of PWGC: Jon, I just wanted to let you know that we did sample monitoring wells at 1175 Flushing Ave on May 29th. I am expecting data soon and will prepare a rpt for your review. Please contact me if you have any questions. - JK 10/23/13: I sent email to John Eichler of PWGC: John, I haven't heard from you about this site in a while (since April 2013). Was a round of GW sampling performed? If so, was a rpt prepared? Please send update on status of site, and if GW sampling was done, please send monitoring rpt or at least lab data. Eichler sent reply: Jon, I ll send you data tables for last round of sampling, and a rpt. Owner of property is looking to redevelop site. Redevelopment would include some more remediation. I will contact you soon to discuss this with you. - J. Kolleeny 11/05/13: Received email from John Eichler of PWGC: Jon, Attached is historical data table for 1175 Atlantic [sic]

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Avenue, Brooklyn. As you know, site underwent an initial remedial excavation and subsequent chemical injection. However, gasoline-related VOCs remain elevated in portions of site. I will call you soon to discuss site s options. Data (in eDocs) show significant increases in contam levels in a number of wells: well MW-1 had 6,159 ug/L total VOCs (up from 4,207 ug/L in Dec. 2011), well MW-2 had 24,002 ug/L tVOCs (up dramatically from 86 ug/L in Dec. 2011), well MW-4 had 392 ug/L tVOCs (up from ND in Dec. 2011), well MW-7 had 992 ug/L tVOCs (up from 144 ug/L in Dec. 2011). I sent email to Eichler: John, Thanks for sending May 2013 GW data. I took a quick look and compared results with data from Dec. 2011, and I'm a little alarmed by dramatic increase in total VOCs in well MW-2. That well only had 86 ug/L total VOCs in Dec. 2011, but May 2013 result shows 24,000 ug/L tVOCs! A site plan in April 2012 rpt shows well MW-2 on up-gradient edge of site (along Stewart Ave.), in terms of GW flow direction. Were wells gauged in May 2013 to determine up-to-date flow direction? Do you have any ideas of what could have caused dramatic increase in total VOCs in well MW-2? Feel free to call to discuss. Eichler sent reply: Jon, MW-2 is one of wells we re-installed (due to damage) prior to last sampling. While new location is only a few ft from old location (in order to avoid vehicles), it seems we hit a hotter spot. I will call you. - J. Kolleeny 07/24/14: Reviewed GW Monitoring Rpt May 2014 by PW Grosser Consulting, Inc., received via email from John Eichler on 7/22/14 (in DecDocs). Eichler's email stated: Jon, Attached for your review is Monitoring Well Sampling Rpt for 1175 Flushing Ave in Brooklyn. Results of this most recent sampling round indicate a decrease in contaminant concentrations. PWGC recommends continued GW monitoring and removal of a recently-discovered out-of-service fuel oil UST located in subject building. Please contact me with your questions and comments. Rpt presents results of well gauging and sampling in May 2014. No LNAPL was detected in any wells. Depth to water/water table elevation measurements suggest GW flow to NE. GW samples were collected from 5 existing mon wells; well MW-7, in area of site operations (auto scrapping), was destroyed (2nd time a well at that location has been destroyed by site ops). Sample results show well MW-1 had 2,675 ug/L total VOCs (down from 6,159 ug/L in May 2013), well MW-2 had 1,110 ug/L tVOCs (down dramatically from 24,002 ug/L in May 2013), well MW-3 was ND (same as in May 2013), well MW-4 had 0.92 ug/l of benzene (below std), with no other detections (down from 392 ug/L in May 2013), well MW-5 was ND (down from 22 ug/L tVOCs in May 2013), well MW-6 had 4 VOC J detections of ~1-2 ug/L each (was ND in May 2013). Rpt states that absence of contam in up-gradient wells MW-5 & MW-6 indicate contam is from on-site source, and based on contam levels in MW-1 & MW-2, PWGC recommends continued GW sampling to monitor GW quality trends. Rpt makes no mention of recently discovered fuel oil UST mentioned in Eichler's email. On 7/24/14, I sent email to Eichler, cc to James Ruggiero, RP (jcr327@aol.com): John, Thanks for monitoring rpt. I agree with recommendation to remove out-of-service fuel oil UST. Tank should be registered and listed as removed by filing a PBS Application/Information Correction Form, and a UST Closure Assessment should be performed and results presented in a Closure Rpt. I also agree with recommendation for addt'l GW sampling to monitor trends in contaminant concentrations. However, I'm not sure if we have ever agreed formally on a GW monitoring schedule for this site. Table 3 in rpt, with historical GW sampling results, shows sampling events performed at irregular intervals ranging from about 6

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months to about a year and a half. Other spill sites I manage which have comparable contaminant levels in GW are usually on a quarterly sampling schedule, and I'd like to require quarterly sampling at this site as a way to keep closer track of GW trends, evaluate possible need for addt'l remedial injections, and expedite movement of this case towards closure. Please discuss this with your client and let me know if he will agree to this schedule. Also, I'd like to request two small modifications to future monitoring rpts: (1) Table 2 lists main gasoline-related compounds that DEC regulates, which is good, but it lacks a line for Total VOCs; please add a line for Total VOCs to this table in future rpts. (2) Table 3, with historical GW data, provides a complete list of all VOCs; analyte list should be reduced to report only gasoline-related VOCs as listed in Table 2. These changes will help facilitate my review of rpts. Please let me know if these changes can be made to monitoring rpts. Feel free to contact me if you have any questions/comments. - J. Kolleeny 06/08/15: Reviewed GW Mon Rpt for May 2015 (in DecDocs), submitted via email from John Eichler of PW Grosser on 6/1/15. GW gauging & sampling in April 2015 showed no LNAPL detected; well MW-1 had 3,596 ug/L total VOCs (up from 2,675 ug/L in May 2014), well MW-2 had 1,566 ug/L tVOCs (up from 1,110 ug/L in May 2014), well MW-3 was not sampled, well MW-4 was virtually ND (same as May 2014), well MW-5 had 25 ug/L tVOCs (was ND in May 2014), well MW-6 had 20 ug/L tVOCs (up from ND in May 2014), well MW-7 has been destroyed by site operations (for 2nd time). Rpt states that MW-3 is consistently located outside of contaminant plume. Water table map shows GW flow direction to SE. Rpt text concludes that contam levels decreased after chem ox injections, but then increased in May 2013, possibly due to changes in water table elevations or GW flow direction related to dewatering in subway tunnel adjacent to site; levels decreased again in May 2014. Data for May 2015 show migration of contam from source area around MW-1 in direction of GW flow to NE (?sic) towards MW-2. PW Grosser recommends continued sampling to monitoring GW quality trends at site. - J. Kolleeny Spill transferred from J. Kolleeny to K. Forster since property is part of the BCP (K. Forster) 3/30/17: Working with BCP Consultant, Environmental Business Consultants, to submit a work plan for the off-site groundwater investigation. - K. Forster Consultant is awaiting disposal facility acceptance based on waste characterization sampling results. Remedial work is anticipated to begin in April. jeb (3/29/2018)"

Remarks: "phase 2 investigation."

All Materials:

Site ID:	355883
Operable Unit ID:	1113215
Operable Unit:	01
Material ID:	2103281
Material Code:	0009
Material Name:	gasoline
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	Not reported
Units:	G
Recovered:	.00
Oxygenate:	True
Site ID:	355883
Operable Unit ID:	1113215

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Operable Unit:	01
Material ID:	2159416
Material Code:	1213A
Material Name:	MTBE (methyl-tert-butyl ether)
Case No.:	01634044
Material FA:	Hazardous Material
Quantity:	Not reported
Units:	Not reported
Recovered:	Not reported
Oxygenate:	True
Site ID:	355883
Operable Unit ID:	1113215
Operable Unit:	01
Material ID:	2159417
Material Code:	2645A
Material Name:	BTEX
Case No.:	Not reported
Material FA:	Oxygenates
Quantity:	Not reported
Units:	Not reported
Recovered:	Not reported
Oxygenate:	True

AF222 **UNIVERSAL USED AUTO PARTS, INC.** **NY UST** **U004048634**
ESE **1175 FLUSHING AVENUE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.233 mi.
1228 ft. **Site 3 of 4 in cluster AF**

Relative:
Higher

Actual:
19 ft.

UST:

Name:	UNIVERSAL USED AUTO PARTS, INC.
Address:	1175 FLUSHING AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Id/Status:	2-610117 / Unregulated/Closed
Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	N/A
UTM X:	590779.72478
UTM Y:	4506725.76622
Site Type:	Other

Affiliation Records:

Site Id:	359343
Affiliation Type:	Facility Owner
Company Name:	1175 FLUSHING AVENUE ASSOCIATES, LLC
Contact Type:	OWNER
Contact Name:	JAMES RUGGIERO
Address1:	1175 FLUSHING AVENUE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(718) 381-1000
EMail:	Not reported

UNIVERSAL USED AUTO PARTS, INC. (Continued) **U004048634**

Fax Number:	Not reported
Modified By:	KXTANG
Date Last Modified:	2006-02-08

Site Id:	359343
Affiliation Type:	Mail Contact
Company Name:	UNIVERSAL USED AUTO PARTS, INC.
Contact Type:	Not reported
Contact Name:	JAMES RUGGIERO
Address1:	1175 FLUSHING AVENUE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(718) 381-1000
EMail:	Not reported
Fax Number:	Not reported
Modified By:	KXTANG
Date Last Modified:	2006-02-08

Site Id:	359343
Affiliation Type:	Facility Operator
Company Name:	UNIVERSAL USED AUTO PARTS, INC.
Contact Type:	Not reported
Contact Name:	JAMES RUGGIERO
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 381-1000
EMail:	Not reported
Fax Number:	Not reported
Modified By:	KXTANG
Date Last Modified:	2006-02-08

Site Id:	359343
Affiliation Type:	Emergency Contact
Company Name:	1175 FLUSHING AVENUE ASSOCIATES, LLC
Contact Type:	Not reported
Contact Name:	JAMES RUGGIERO
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 908-7573
EMail:	Not reported
Fax Number:	Not reported
Modified By:	KXTANG
Date Last Modified:	2006-02-08

Tank Info:

UNIVERSAL USED AUTO PARTS, INC. (Continued) **U004048634**

Tank Number: 1
Tank ID: 209964
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: 01/31/2006
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: KXTANG
Last Modified: 04/14/2017

Equipment Records:

L00 - Piping Leak Detection - None
B00 - Tank External Protection - None
F00 - Pipe External Protection - None
E00 - Piping Secondary Containment - None
H00 - Tank Leak Detection - None
I02 - Overfill - High Level Alarm
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
K00 - Spill Prevention - None

Tank Number: 10
Tank ID: 209973
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: 01/31/2006
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: KXTANG
Last Modified: 04/14/2017

Equipment Records:

B00 - Tank External Protection - None
F00 - Pipe External Protection - None

UNIVERSAL USED AUTO PARTS, INC. (Continued) **U004048634**

C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
E00 - Piping Secondary Containment - None
H00 - Tank Leak Detection - None
I02 - Overfill - High Level Alarm
L00 - Piping Leak Detection - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
K00 - Spill Prevention - None

Tank Number: 11
Tank ID: 209974
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: 01/31/2006
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: KXTANG
Last Modified: 04/14/2017

Equipment Records:

G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
L00 - Piping Leak Detection - None
F00 - Pipe External Protection - None
B00 - Tank External Protection - None
E00 - Piping Secondary Containment - None
H00 - Tank Leak Detection - None
I02 - Overfill - High Level Alarm
C02 - Pipe Location - Underground/On-ground
K00 - Spill Prevention - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Number: 2
Tank ID: 209965
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: 01/31/2006
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009

UNIVERSAL USED AUTO PARTS, INC. (Continued) **U004048634**

Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: KXTANG
Last Modified: 04/14/2017

Equipment Records:

A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
K00 - Spill Prevention - None
B00 - Tank External Protection - None
F00 - Pipe External Protection - None
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
E00 - Piping Secondary Containment - None
H00 - Tank Leak Detection - None
I02 - Overfill - High Level Alarm
L00 - Piping Leak Detection - None

Tank Number: 3
Tank ID: 209966
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: 01/31/2006
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: KXTANG
Last Modified: 04/14/2017

Equipment Records:

B00 - Tank External Protection - None
F00 - Pipe External Protection - None
E00 - Piping Secondary Containment - None
H00 - Tank Leak Detection - None
I02 - Overfill - High Level Alarm
L00 - Piping Leak Detection - None
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
K00 - Spill Prevention - None

UNIVERSAL USED AUTO PARTS, INC. (Continued) **U004048634**

Tank Number: 4
Tank ID: 209967
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: 01/31/2006
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: KXTANG
Last Modified: 04/14/2017

Equipment Records:

L00 - Piping Leak Detection - None
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
B00 - Tank External Protection - None
F00 - Pipe External Protection - None
E00 - Piping Secondary Containment - None
H00 - Tank Leak Detection - None
I02 - Overfill - High Level Alarm
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
K00 - Spill Prevention - None

Tank Number: 5
Tank ID: 209968
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: 01/31/2006
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: KXTANG
Last Modified: 04/14/2017

Equipment Records:

B00 - Tank External Protection - None
F00 - Pipe External Protection - None

UNIVERSAL USED AUTO PARTS, INC. (Continued) **U004048634**

E00 - Piping Secondary Containment - None
H00 - Tank Leak Detection - None
I02 - Overfill - High Level Alarm
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
L00 - Piping Leak Detection - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
K00 - Spill Prevention - None

Tank Number: 6
Tank ID: 209969
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: 01/31/2006
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: KXTANG
Last Modified: 04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I02 - Overfill - High Level Alarm
E00 - Piping Secondary Containment - None
B00 - Tank External Protection - None
F00 - Pipe External Protection - None
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
L00 - Piping Leak Detection - None
K00 - Spill Prevention - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Number: 7
Tank ID: 209970
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: 01/31/2006
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009

UNIVERSAL USED AUTO PARTS, INC. (Continued) **U004048634**

Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: KXTANG
Last Modified: 04/14/2017

Equipment Records:

E00 - Piping Secondary Containment - None
H00 - Tank Leak Detection - None
I02 - Overfill - High Level Alarm
B00 - Tank External Protection - None
F00 - Pipe External Protection - None
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
L00 - Piping Leak Detection - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
K00 - Spill Prevention - None

Tank Number: 8
Tank ID: 209971
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 550
Install Date: Not reported
Date Tank Closed: 01/31/2006
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: KXTANG
Last Modified: 04/14/2017

Equipment Records:

E00 - Piping Secondary Containment - None
H00 - Tank Leak Detection - None
I02 - Overfill - High Level Alarm
F00 - Pipe External Protection - None
B00 - Tank External Protection - None
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
C02 - Pipe Location - Underground/On-ground
L00 - Piping Leak Detection - None
K00 - Spill Prevention - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

UNIVERSAL USED AUTO PARTS, INC. (Continued) **U004048634**

Tank Number:	9
Tank ID:	209972
Tank Status:	Closed - Removed
Material Name:	Closed - Removed
Capacity Gallons:	550
Install Date:	Not reported
Date Tank Closed:	01/31/2006
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0009
Common Name of Substance:	Gasoline
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	KXTANG
Last Modified:	04/14/2017

Equipment Records:

B00 - Tank External Protection - None
F00 - Pipe External Protection - None
E00 - Piping Secondary Containment - None
H00 - Tank Leak Detection - None
I02 - Overfill - High Level Alarm
C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
K00 - Spill Prevention - None
L00 - Piping Leak Detection - None

X223 **CON EDISON** **RCRA NonGen / NLR** **1012185380**
NNE **SCHOLES & VARICK** **NY MANIFEST** **NYP004161857**
1/8-1/4 **BROOKLYN, NY 11232**
0.233 mi.
1231 ft. **Site 16 of 16 in cluster X**

Relative: **Lower**
Actual: **12 ft.**

RCRA NonGen / NLR:

Date form received by agency:	06/01/2016
Facility name:	CON EDISON
Facility address:	SCHOLES & VARICK BROOKLYN, NY 11232
EPA ID:	NYP004161857
Mailing address:	4 IRVING PL, RM 828 NEW YORK, NY 10003
Contact:	HERMAN BAKER
Contact address:	Not reported Not reported
Contact country:	US
Contact telephone:	718-267-3853
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

CON EDISON (Continued) **1012185380**

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 10/15/2008
Site name: CON EDISON
Classification: Conditionally Exempt Small Quantity Generator

Violation Status: No violations found

NY MANIFEST:
Country: USA
EPA ID: NYP004161857
Facility Status: Not reported
Location Address 1: SCHOLES AND VARICK ST MH 43890
Code: BP
Location Address 2: Not reported
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: 11232
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYP004161857
Mailing Name: CONSOLIDATED EDISON
Mailing Contact: FRANKLYN MURRAY
Mailing Address 1: 4 IRVING PLACE RM 828
Mailing Address 2: Not reported
Mailing City: NEW YORK
Mailing State: NY
Mailing Zip: 10003
Mailing Zip 4: Not reported
Mailing Country: USA
Mailing Phone: 2124602808

NY MANIFEST:
Document ID: Not reported
Manifest Status: Not reported
seq: Not reported
Year: 2008
Trans1 State ID: NYD006982359
Trans2 State ID: Not reported

CON EDISON (Continued) **1012185380**

Generator Ship Date:	10/16/2008
Trans1 Recv Date:	10/16/2008
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	10/16/2008
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004161857
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NYD077444263
TSDF ID 2:	Not reported
Manifest Tracking Number:	001433602FLE
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H141
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	100.0
Units:	K - Kilograms (2.2 pounds)
Number of Containers:	2.0
Container Type:	DM - Metal drums, barrels
Handling Method:	L Landfill.
Specific Gravity:	1.0
Waste Code:	D008
Waste Code 1_2:	B007
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

Y224 **CON EDISON - MANHOLE 258** **NJ MANIFEST** **S120667618**
NW **STAGG ST & MORGAN AVE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.234 mi.
1234 ft. **Site 8 of 14 in cluster Y**

Relative: NJ MANIFEST:
Lower

EPA Id:	NYP004735478
Mail Address:	IRVING PLACE, 15TH FL NE
Mail City/State/Zip:	NEW YORK, NY 10003
Facility Phone:	Not reported
Emergency Phone:	Not reported

Actual:
13 ft.

CON EDISON - MANHOLE 258 (Continued) **S120667618**

Contact:	THERESA BURKARD
Comments:	Not reported
SIC Code:	Not reported
County:	NY047
Municipal:	Not reported
Previous EPA Id:	Not reported
Gen Flag:	Not reported
Trans Flag:	Not reported
TSDF Flag:	Not reported
Name Change:	Not reported
Date Change:	Not reported

Manifest:

Manifest Number:	002621136GBF
EPA ID:	NYP004735478
Date Shipped:	2/22/2015
TSDF EPA ID:	NJD991291105
Transporter EPA ID:	NJD003812047
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	Not reported
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	Not reported
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	NEW YORK, NY 10003
Reason Load Was Rejected:	Not reported

Y225
NW
1/8-1/4
0.234 mi.
1234 ft.

CON EDISON - MANHOLE 258
STAGG ST & MORGAN AVE
BROOKLYN, NY 11237

Site 9 of 14 in cluster Y

RCRA-LQG **1018278766** **NYP004735478**

Relative:
Lower

Actual:
13 ft.

RCRA-LQG:

Date form received by agency:	02/05/2016
Facility name:	CON EDISON - MANHOLE 258
Facility address:	STAGG ST & MORGAN AVE BROOKLYN, NY 11237
EPA ID:	NYP004735478
Mailing address:	IRVING PLACE, 15TH FL NE NEW YORK, NY 10003
Contact:	THERESA BURKARD
Contact address:	IRVING PLACE, 15TH FL NE NEW YORK, NY 10003
Contact country:	US
Contact telephone:	212-460-2262
Contact email:	BURKARDT@CONED.COM
EPA Region:	02
Classification:	Large Quantity Generator
Description:	Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:

Owner/operator name:	CONSOLIDATED EDISON COMPANY OF NY, INC.
Owner/operator address:	IRVING PLACE NEW YORK, NY 10003
Owner/operator country:	US
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	02/22/2015
Owner/Op end date:	Not reported

Owner/operator name:	CONSOLIDATED EDISON COMPANY OF NY, INC.
Owner/operator address:	IRVING PLACE NEW YORK, NY 10003
Owner/operator country:	US
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner

CON EDISON - MANHOLE 258 (Continued) **1018278766**

Owner/Op start date: 02/22/2015
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 02/22/2015
Site name: CON EDISON
Classification: Not a generator, verified

Date form received by agency: 02/22/2015
Site name: CON EDISON
Classification: Large Quantity Generator

Hazardous Waste Summary:

. Waste code: D008
. Waste name: LEAD

Biennial Reports:

Last Biennial Reporting Year: 2017

Annual Waste Handled:
Waste code: D008
Waste name: LEAD
Amount (Lbs): 6000

Violation Status: No violations found

Y226 **CON EDISON** **RCRA NonGen / NLR** **1019901650**
NW **MORGAN AVE & STAGG ST** **NYP004764395**
1/8-1/4 **BROOKLYN, NY 11206**
0.234 mi.
1234 ft. **Site 10 of 14 in cluster Y**

Relative: **Lower**

Actual: **13 ft.**

RCRA NonGen / NLR:
Date form received by agency: 04/07/2015
Facility name: CON EDISON
Facility address: MORGAN AVE & STAGG ST
BROOKLYN, NY 11206
EPA ID: NYP004764395

CON EDISON (Continued) **1019901650**

Mailing address: IRVING PL 15TH FL NE
NEW YORK, NY 10003
Contact: THOMAS TEELING
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: 212-460-3770
Contact email: Not reported
EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 04/07/2015
Site name: CON EDISON
Classification: Large Quantity Generator

Violation Status: No violations found

Y227 **CON EDISON** **RCRA NonGen / NLR** **1018280766**
NW **MORGAN AVE & STAGG ST** **NYP004756722**
1/8-1/4 **BROOKLYN, NY 11206**
0.234 mi.
1234 ft. **Site 11 of 14 in cluster Y**

Relative: **Lower**

Actual: **13 ft.**

RCRA NonGen / NLR:
Date form received by agency: 03/24/2015
Facility name: CON EDISON
Facility address: MORGAN AVE & STAGG ST
BROOKLYN, NY 11206
EPA ID: NYP004756722
Mailing address: IRVING PL, 15TH FL NE
NEW YORK, NY 10003
Contact: THOMAS TEELING
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: 212-460-3770
Contact email: Not reported
EPA Region: 02
Classification: Non-Generator

CON EDISON (Continued) **1018280766**

Description: Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 03/24/2015
Site name: CON EDISON
Classification: Large Quantity Generator

Violation Status: No violations found

Y228 **CON EDISON** **NY MANIFEST** **S118088857**
NW **MORGAN AVE & STAGG ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.234 mi.
1234 ft. **Site 12 of 14 in cluster Y**

Relative: **Lower**
Actual: **13 ft.**

NY MANIFEST:
Country: USA
EPA ID: NYP004756722
Facility Status: Not reported
Location Address 1: MOLSAN AVE & STAGG ST
Code: BP
Location Address 2: M 19210
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: 11201
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYP004756722
Mailing Name: CON EDISON
Mailing Contact: DENNIS HUACON
Mailing Address 1: 4 IRVING PL 15TH FL
Mailing Address 2: Not reported
Mailing City: NEW YORK
Mailing State: NY
Mailing Zip: 10003
Mailing Zip 4: Not reported
Mailing Country: USA
Mailing Phone: 2124603770

CON EDISON (Continued) **S118088857**

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2015
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	03/24/2015
Trans1 Recv Date:	03/24/2015
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	03/27/2015
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004756722
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002660460GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	2000
Units:	P - Pounds
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Country:	USA
EPA ID:	NYP004764395
Facility Status:	Not reported
Location Address 1:	MORGAN AVE & STAGG ST
Code:	BP
Location Address 2:	TM 1926
Total Tanks:	Not reported

CON EDISON (Continued) **S118088857**

Location City:	BROOKLYN
Location State:	NY
Location Zip:	11201
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004764395
Mailing Name:	CON EDISON
Mailing Contact:	DENNIS HUACON
Mailing Address 1:	4 IRVING PL 15TH FL
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	2124603770

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2015
Trans1 State ID:	NJ0000027193
Trans2 State ID:	Not reported
Generator Ship Date:	04/07/2015
Trans1 Recv Date:	04/07/2015
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	04/07/2015
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004764395
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD002200046
TSDF ID 2:	Not reported
Manifest Tracking Number:	014088034JJK
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	1000
Units:	P - Pounds
Number of Containers:	1

CON EDISON (Continued) **S118088857**

Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

Y229 **CON EDISON** **NJ MANIFEST** **S120670168**
NW **MORGAN AVE & STAGG ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.234 mi.
1234 ft. **Site 13 of 14 in cluster Y**

Relative: **Lower**
Actual: **13 ft.**

NJ MANIFEST:

EPA Id:	NYP004764395
Mail Address:	IRVING PL 15TH FL NE
Mail City/State/Zip:	NEW YORK, NY 10003
Facility Phone:	Not reported
Emergency Phone:	Not reported
Contact:	THOMAS TEELING
Comments:	Not reported
SIC Code:	Not reported
County:	NY047
Municipal:	Not reported
Previous EPA Id:	Not reported
Gen Flag:	Not reported
Trans Flag:	Not reported
TSDF Flag:	Not reported
Name Change:	Not reported
Date Change:	Not reported

Manifest:

Manifest Number:	014088034JJK
EPA ID:	NYP004764395
Date Shipped:	4/7/2015
TSDF EPA ID:	NJD002200046
Transporter EPA ID:	NJ0000027193
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	Not reported
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported

CON EDISON (Continued) **S120670168**

Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	Not reported
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	NEW YORK, NY 10003
Reason Load Was Rejected:	Not reported

Y230 **CON EDISON** **NY MANIFEST** **S117740383**
NW **STAGG ST & MORGAN AVE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.234 mi.
1234 ft. **Site 14 of 14 in cluster Y**

Relative: **Lower**

Actual: **13 ft.**

NY MANIFEST:

Country:	USA
EPA ID:	NYP004735478
Facility Status:	Not reported
Location Address 1:	STAGG ST & MORGAN AVE
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004735478
Mailing Name:	CON EDISON
Mailing Contact:	TOM TEELING
Mailing Address 1:	4 IRVING PLACE - 15TH FLOOR
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported

CON EDISON (Continued) **S117740383**

Manifest Status:	Not reported
seq:	Not reported
Year:	2015
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	02/22/2015
Trans1 Recv Date:	02/22/2015
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	03/03/2015
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004735478
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002621136GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	6000
Units:	P - Pounds
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

AG231 **BOARS HEAD PROVISION CO,INC.** **NY UST** **U000398849**
SSE **151 KNICKERBOCKER AVE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.235 mi.
1240 ft. **Site 1 of 5 in cluster AG**

Relative:
Higher

Actual:
27 ft.

UST:

Name:	BOARS HEAD PROVISION CO,INC.
Address:	151 KNICKERBOCKER AVE
City,State,Zip:	BROOKLYN, NY 11237
Id/Status:	2-192902 / Unregulated/Closed
Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	N/A
UTM X:	590556.29412
UTM Y:	4506502.40742
Site Type:	Unknown

Affiliation Records:

Site Id:	6092
Affiliation Type:	Facility Owner
Company Name:	GOLDEN NATURAL FOOD PRODUCTS, INC.
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	151 KNICKERBOCKER AVENUE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	Not reported
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	6092
Affiliation Type:	Mail Contact
Company Name:	BOARS HEAD PROVISION CO. INC.
Contact Type:	Not reported
Contact Name:	SUPER FACILITY MANAGER
Address1:	151 KNICKERBOCKER AVENUE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(718) 456-3600
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	6092
Affiliation Type:	Facility Operator
Company Name:	BOARS HEAD PROVISION CO,INC.
Contact Type:	Not reported
Contact Name:	STEVE VALESKO
Address1:	Not reported

BOARS HEAD PROVISION CO,INC. (Continued) **U000398849**

Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 456-3600
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	6092
Affiliation Type:	Emergency Contact
Company Name:	GOLDEN NATURAL FOOD PRODUCTS, INC.
Contact Type:	Not reported
Contact Name:	STEVE VALESKO
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 456-3600
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	001
Tank ID:	11337
Tank Status:	Closed - Removed
Material Name:	Closed - Removed
Capacity Gallons:	4000
Install Date:	Not reported
Date Tank Closed:	01/26/2000
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Tightness Test Method:	-
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	MXLAY
Last Modified:	06/29/2018

Equipment Records:

B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
I04 - Overfill - Product Level Gauge (A/G)
H00 - Tank Leak Detection - None
L09 - Piping Leak Detection - Exempt Suction Piping

BOARS HEAD PROVISION CO,INC. (Continued) **U000398849**

G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

AA232 **TWIN MARQUIS, INC.** **NY AST** **S107783273**
West **328 JOHNSON AVENUE** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.235 mi.
1242 ft. **Site 10 of 11 in cluster AA**

Relative: **Lower**
Actual: **18 ft.**

AST:

Name:	TWIN MARQUIS, INC.
Address:	328 JOHNSON AVENUE
City,State,Zip:	BROOKLYN, NY 11206
Region:	STATE
DEC Region:	2
Site Status:	Unregulated/Closed
Facility Id:	2-604066
Program Type:	PBS
UTM X:	589938.81519
UTM Y:	4506804.49687
Expiration Date:	N/A
Site Type:	Other Wholesale/Retail Sales

Affiliation Records:

Site Id:	25952
Affiliation Type:	Facility Owner
Company Name:	BOERUM JOHNSON AVE. ASSOC
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	310-330 JOHNSON AVE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11206
Country Code:	001
Phone:	(718) 386-6868
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	25952
Affiliation Type:	Mail Contact
Company Name:	BOERUM JOHNSON AVE. ASSOC., L.P
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	310-330 JOHNSON AVENUE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11206
Country Code:	001
Phone:	(718) 386-6868
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT

TWIN MARQUIS, INC. (Continued) **S107783273**

Date Last Modified: 2004-03-04

Site Id: 25952
Affiliation Type: Facility Operator
Company Name: TWIN MARQUIS, INC.
Contact Type: Not reported
Contact Name: TERRY TONG
Address1: Not reported
Address2: Not reported
City: Not reported
State: NN
Zip Code: Not reported
Country Code: 001
Phone: (718) 386-6868
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 25952
Affiliation Type: Emergency Contact
Company Name: BOERUM JOHNSON AVE. ASSOC
Contact Type: Not reported
Contact Name: TERRY TONG
Address1: Not reported
Address2: Not reported
City: Not reported
State: NN
Zip Code: Not reported
Country Code: 001
Phone: (718) 386-6868
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Tank Info:

Tank Number: 1
Tank Id: 56542
Material Code: 0001
Common Name of Substance: #2 Fuel Oil (On-Site Consumption)

Equipment Records:

H00 - Tank Leak Detection - None
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
B00 - Tank External Protection - None
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
C01 - Pipe Location - Aboveground
I04 - Overfill - Product Level Gauge (A/G)

Tank Location: Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type: Steel/Carbon Steel/Iron

TWIN MARQUIS, INC. (Continued) **S107783273**

Tank Status:	Closed - Removed
Pipe Model:	Not reported
Install Date:	10/01/1998
Capacity Gallons:	2000
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	10/01/1998
Register:	True
Modified By:	TRANSLAT
Last Modified:	04/14/2017
Material Name:	#2 fuel oil (on-site consumption)

AH233 **CON EDISON** **NY MANIFEST** **S116551262**
SSE **139 GEORGE ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.235 mi.
1242 ft. **Site 1 of 2 in cluster AH**

Relative:
Higher

Actual:
31 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004497079
Facility Status:	Not reported
Location Address 1:	FRONT OF 139 & GEORGE ST
Code:	BP
Location Address 2:	SB8501
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11201
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004497079
Mailing Name:	CON EDISON
Mailing Contact:	CON EDISON
Mailing Address 1:	4 IRVING PL
Mailing Address 2:	15TH ST
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	04/10/2014
Trans1 Recv Date:	04/10/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	04/11/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported

CON EDISON (Continued) **S116551262**

Generator EPA ID:	NYP004497079
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002407612GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	80
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

AH234 **CON EDISON SERVICE BOX: 8501** **RCRA NonGen / NLR** **1017772747**
SSE **139 GEORGE ST** **FINDS** **NYP004497079**
1/8-1/4 **BROOKLYN, NY 11237**
0.235 mi.
1242 ft. **Site 2 of 2 in cluster AH**

Relative:
Higher

Actual:
31 ft.

RCRA NonGen / NLR:

Date form received by agency:	05/10/2014
Facility name:	CON EDISON SERVICE BOX: 8501
Facility address:	139 GEORGE ST BROOKLYN, NY 11237
EPA ID:	NYP004497079
Mailing address:	IRVING PL, 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING
Contact address:	Not reported Not reported
Contact country:	Not reported

CON EDISON SERVICE BOX: 8501 (Continued) **1017772747**

Contact telephone: 212-460-3770
Contact email: Not reported
EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 04/10/2014
Site name: CON EDISON
Classification: Small Quantity Generator

Date form received by agency: 04/10/2014
Site name: CON EDISON
Classification: Not a generator, verified

Violation Status: No violations found

FINDS:

Registry ID: 110063791320

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

AD235 **CON EDISON - MANHOLE M44562** **NY MANIFEST** **S121968758**
WNW **333 SCHOLES ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.237 mi.
1250 ft. **Site 4 of 5 in cluster AD**

Relative:
Lower

Actual:
17 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP005152632
Facility Status:	Not reported
Location Address 1:	333 SCHOLES ST
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11206
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP005152632
Mailing Name:	CON EDISON - MANHOLE M44562
Mailing Contact:	CON EDISON
Mailing Address 1:	4 IRVING PL
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

AD236 **CON EDISON - MANHOLE M44562** **RCRA-LQG** **1024891825**
WNW **333 SCHOLES ST** **NYP005152632**
1/8-1/4 **BROOKLYN, NY 11206**
0.237 mi.
1250 ft. **Site 5 of 5 in cluster AD**

Relative:
Lower

Actual:
17 ft.

RCRA-LQG:

Date form received by agency:	04/10/2018
Facility name:	CON EDISON - MANHOLE M44562
Facility address:	333 SCHOLES ST BROOKLYN, NY 11206
EPA ID:	NYP005152632
Mailing address:	IRVING PLACE, 15TH FL NE NEW YORK, NY 10003
Contact:	ALYSSA SOTTO
Contact address:	IRVING PLACE, 15TH FL NE NEW YORK, NY 10003
Contact country:	US
Contact telephone:	212-460-2757
Contact email:	SOTTOA@CONED.COM
EPA Region:	02
Classification:	Large Quantity Generator
Description:	Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste

CON EDISON - MANHOLE M44562 (Continued) **1024891825**

during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:

Owner/operator name:	CONSOLIDATED EDISON COMPANY OF NY, INC.
Owner/operator address:	IRVING PLACE NEW YORK, NY 10003
Owner/operator country:	US
Owner/operator telephone:	212-460-2757
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	10/18/2017
Owner/Op end date:	Not reported

Owner/operator name:	CONSOLIDATED EDISON COMPANY OF NY, INC.
Owner/operator address:	IRVING PLACE NEW YORK, NY 10003
Owner/operator country:	US
Owner/operator telephone:	212-460-2757
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	10/18/2017
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

CON EDISON - MANHOLE M44562 (Continued) **1024891825**

Hazardous Waste Summary:

. Waste code: D008
. Waste name: LEAD

Violation Status: No violations found

AI237 **106 STEWART AVE** **NY UST** **U001839453**
ENE **106 STEWART AVE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.241 mi.
1272 ft. **Site 1 of 2 in cluster AI**

Relative:
Lower

Actual:
14 ft.

UST:

Name:	106 STEWART AVE
Address:	106 STEWART AVE
City,State,Zip:	BROOKLYN, NY 11237
Id/Status:	2-344168 / Inactive
Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	N/A
UTM X:	590765.13885
UTM Y:	4507039.25111
Site Type:	Unknown

Affiliation Records:

Site Id:	16732
Affiliation Type:	Facility Owner
Company Name:	RANDOLPH ASSOCIATES
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	60 EAST 56TH ST. 7TH FLOOR
Address2:	Not reported
City:	NEW YORK
State:	NY
Zip Code:	10022
Country Code:	001
Phone:	(212) 751-4627
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	16732
Affiliation Type:	Mail Contact
Company Name:	L. GIRINSKY 7TH FLOOR
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	60 EAST 56TH ST. 7TH FLOOR
Address2:	Not reported
City:	NEW YORK
State:	NY
Zip Code:	10022
Country Code:	001
Phone:	(212) 751-4627
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT

106 STEWART AVE (Continued) **U001839453**

Date Last Modified:	2004-03-04

Site Id:	16732
Affiliation Type:	Facility Operator
Company Name:	106 STEWART AVE
Contact Type:	Not reported
Contact Name:	AT&T
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(212) 751-4627
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	16732
Affiliation Type:	Emergency Contact
Company Name:	RANDOLPH ASSOCIATES
Contact Type:	Not reported
Contact Name:	AT&T
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(212) 751-4627
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	001
Tank ID:	32501
Tank Status:	Tank Converted to Non-Regulated Use
Material Name:	Tank Converted to Non-Regulated Use
Capacity Gallons:	3000
Install Date:	Not reported
Date Tank Closed:	12/12/2002
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

106 STEWART AVE (Continued) **U001839453**

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
J02 - Dispenser - Suction Dispenser
G00 - Tank Secondary Containment - None
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

AG238 **CON EDISION** **NY MANIFEST** **S117736294**
SSE **156 GEORGE ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.241 mi.
1273 ft. **Site 2 of 5 in cluster AG**

Relative:
Higher

Actual:
30 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004490074
Facility Status:	Not reported
Location Address 1:	156 GEORGE STREET
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004490074
Mailing Name:	CON EDISION
Mailing Contact:	CON EDISION
Mailing Address 1:	4 IRVING PL
Mailing Address 2:	15TH FL
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	04/04/2014
Trans1 Recv Date:	04/04/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	04/04/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004490074

CON EDISION (Continued) **S117736294**

Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002407738GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	800
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

AG239 **CON EDISON MANHOLE: 72374** **RCRA NonGen / NLR** **1017772059**
SSE **156 GEORGE ST** **FINDS** **NYP004490074**
1/8-1/4 **BROOKLYN, NY 11237**
0.241 mi.
1273 ft. **Site 3 of 5 in cluster AG**

Relative:
Higher

Actual:
30 ft.

RCRA NonGen / NLR:

Date form received by agency:	05/04/2014
Facility name:	CON EDISON MANHOLE: 72374
Facility address:	156 GEORGE ST BROOKLYN, NY 11237
EPA ID:	NYP004490074
Mailing address:	IRVING PL, 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	212-460-3770

CON EDISON MANHOLE: 72374 (Continued) **1017772059**

Contact email: Not reported
EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 04/04/2014
Site name: CON EDISON
Classification: Large Quantity Generator

Date form received by agency: 04/04/2014
Site name: CON EDISON
Classification: Not a generator, verified

Violation Status: No violations found

FINDS:

Registry ID: 110063760461

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

AE240 **CON EDISON** **NJ MANIFEST** **S120677306**
SSW **28 BOGART ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.244 mi.
1286 ft. **Site 3 of 5 in cluster AE**

Relative:
Higher

Actual:
23 ft.

NJ MANIFEST:

EPA Id:	NYP004845414
Mail Address:	IRVING PL 15TH FL NE
Mail City/State/Zip:	NEW YORK, NY 10003
Facility Phone:	Not reported
Emergency Phone:	Not reported
Contact:	THOMAS TEELING
Comments:	Not reported
SIC Code:	Not reported
County:	NY047
Municipal:	Not reported
Previous EPA Id:	Not reported
Gen Flag:	Not reported
Trans Flag:	Not reported
TSDF Flag:	Not reported
Name Change:	Not reported
Date Change:	Not reported

Manifest:

Manifest Number:	014086217JJK
EPA ID:	NYP004845414
Date Shipped:	9/29/2015
TSDF EPA ID:	NJD002200046
Transporter EPA ID:	NJ0000027193
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	Not reported
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	Not reported
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported

CON EDISON (Continued) **S120677306**

Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	NEW YORK, NY 10003
Reason Load Was Rejected:	Not reported

AE241 **CON EDISON** **RCRA NonGen / NLR** **1019325656**
SSW **28 BOGART ST** **NYP004845414**
1/8-1/4 **BROOKLYN, NY 11206**
0.244 mi.
1286 ft. **Site 4 of 5 in cluster AE**

Relative:
Higher

Actual:
23 ft.

RCRA NonGen / NLR:

Date form received by agency:	02/05/2016
Facility name:	CON EDISON
Site name:	CON EDISON - SERVICE BOX 12168
Facility address:	28 BOGART ST BROOKLYN, NY 11206
EPA ID:	NYP004845414
Mailing address:	IRVING PLACE, 15TH FL NE NEW YORK, NY 10003
Contact:	THERESA BURKARD
Contact address:	IRVING PLACE, 15TH FL NE NEW YORK, NY 10003
Contact country:	US
Contact telephone:	212-460-2262
Contact email:	BURKARDT@CONED.COM
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	CONSOLIDATED EDISON COMPANY OF NY, INC.
Owner/operator address:	IRVING PLACE NEW YORK, NY 10003
Owner/operator country:	US
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	09/29/2015
Owner/Op end date:	Not reported

Owner/operator name:	CONSOLIDATED EDISON COMPANY OF NY, INC.
Owner/operator address:	IRVING PLACE NEW YORK, NY 10003
Owner/operator country:	US
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator

CON EDISON (Continued) **1019325656**

Owner/Op start date: 09/29/2015
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 09/29/2015
Site name: CON EDISON
Classification: Not a generator, verified

Date form received by agency: 09/29/2015
Site name: CON EDISON
Classification: Large Quantity Generator

Hazardous Waste Summary:

. Waste code: D008
. Waste name: LEAD

Biennial Reports:

Last Biennial Reporting Year: 2017

Annual Waste Handled:
Waste code: D008
Waste name: LEAD
Amount (Lbs): 2500

Violation Status: No violations found

AE242 **CON EDISON** **NY MANIFEST** **S118463011**
SSW **28 BOGART ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.244 mi.
1286 ft. **Site 5 of 5 in cluster AE**

Relative:
Higher

Actual:
23 ft.

NY MANIFEST:
Country: USA
EPA ID: NYP004845414
Facility Status: Not reported
Location Address 1: 28 BOGART ST
Code: BP

CON EDISON (Continued) **S118463011**

Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11206
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004845414
Mailing Name:	CON EDISON
Mailing Contact:	DENNIS HUACON
Mailing Address 1:	4 IRVING PL 15TH FL
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	2124603770

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2015
Trans1 State ID:	NJ0000027193
Trans2 State ID:	Not reported
Generator Ship Date:	09/29/2015
Trans1 Recv Date:	09/29/2015
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	10/01/2015
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004845414
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD002200046
TSDF ID 2:	Not reported
Manifest Tracking Number:	014086217JJK
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	2500

CON EDISON (Continued) **S118463011**

Units:	P - Pounds
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

AB243 **CON EDISON** **NY MANIFEST** **S113921054**
South **1006 FLUSHING AVE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.245 mi.
1293 ft. **Site 5 of 12 in cluster AB**

Relative:
Higher

Actual:
34 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004573903
Facility Status:	Not reported
Location Address 1:	1006 FLUSHING AVE
Code:	BP
Location Address 2:	SB 7458
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004573903
Mailing Name:	CON EDISON
Mailing Contact:	TOM TEELING
Mailing Address 1:	4 IRVING PLACE 15TH FLOOR
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJ0000027193
Trans2 State ID:	Not reported
Generator Ship Date:	06/24/2014
Trans1 Recv Date:	06/24/2014
Trans2 Recv Date:	Not reported

CON EDISON (Continued) **S113921054**

TSD Site Recv Date:	06/27/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004573903
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD002200046
TSDF ID 2:	Not reported
Manifest Tracking Number:	013254871JJK
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	50
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

AB244 **CON EDISON SERVICE BOX: 7458** **RCRA NonGen / NLR** **1016964226**
South **1006 FLUSHING AVE** **NY MANIFEST** **NYP004371662**
1/8-1/4 **BROOKLYN, NY 11237**
0.245 mi.
1293 ft. **Site 6 of 12 in cluster AB**

Relative:
Higher

Actual:
34 ft.

RCRA NonGen / NLR:

Date form received by agency:	07/24/2014
Facility name:	CON EDISON SERVICE BOX: 7458
Facility address:	1006 FLUSHING AVE BROOKLYN, NY 11237
EPA ID:	NYP004371662
Mailing address:	IRVING PL, 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING

CON EDISON SERVICE BOX: 7458 (Continued) **1016964226**

Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: 212-460-3770
Contact email: Not reported
EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 06/24/2014
Site name: CON EDISON
Classification: Large Quantity Generator

Date form received by agency: 06/24/2014
Site name: CON EDISON
Classification: Not a generator, verified

Violation Status: No violations found

NY MANIFEST:
Country: USA
EPA ID: NYP004371662
Facility Status: Not reported
Location Address 1: 1006 FLUSHING AVE
Code: BP
Location Address 2: SB7458
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: 11237
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYP004371662
Mailing Name: CON EDISON
Mailing Contact: CON EDISON
Mailing Address 1: 4 IRVING PL 15TH FL
Mailing Address 2: Not reported
Mailing City: NEW YORK

CON EDISON SERVICE BOX: 7458 (Continued) **1016964226**

Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2013
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	10/08/2013
Trans1 Recv Date:	10/08/2013
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	10/10/2013
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004371662
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002290962GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	100
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

CON EDISON SERVICE BOX: 7458 (Continued) **1016964226**

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

AB245 **CON EDISON** **RCRA NonGen / NLR** **1019901845**
South **WILSON AVE & FLUSHING AVE SE** **FINDS** **NYP004766697**
1/8-1/4 **BROOKLYN, NY 11215** **ECHO**
0.245 mi.
1295 ft. **Site 7 of 12 in cluster AB**

Relative:
Higher

Actual:
32 ft.

RCRA NonGen / NLR:

Date form received by agency:	04/12/2015
Facility name:	CON EDISON
Facility address:	WILSON AVE & FLUSHING AVE SE COR BROOKLYN, NY 11215
EPA ID:	NYP004766697
Mailing address:	IRVING PL 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	212-460-3770
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	04/12/2015
Site name:	CON EDISON
Classification:	Large Quantity Generator
Violation Status:	No violations found

FINDS:

Registry ID: 110069662010

Environmental Interest/Information System

CON EDISON (Continued) **1019901845**

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1019901845
Registry ID:	110069662010
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110069662010

AB246 **CON EDISON** **NJ MANIFEST** **S120670376**
South **WILSON AVE & FLUSHING AVE SE** **N/A**
1/8-1/4 **BROOKLYN, NY 11215**
0.245 mi.
1295 ft. **Site 8 of 12 in cluster AB**

Relative: **Higher**

Actual: **32 ft.**

NJ MANIFEST:

EPA Id:	NYP004766697
Mail Address:	IRVING PL 15TH FL NE
Mail City/State/Zip:	NEW YORK, NY 10003
Facility Phone:	Not reported
Emergency Phone:	Not reported
Contact:	THOMAS TEELING
Comments:	Not reported
SIC Code:	Not reported
County:	NY047
Municipal:	Not reported
Previous EPA Id:	Not reported
Gen Flag:	Not reported
Trans Flag:	Not reported
TSDF Flag:	Not reported
Name Change:	Not reported
Date Change:	Not reported

Manifest:

Manifest Number:	002618868GBF
EPA ID:	NYP004766697
Date Shipped:	4/12/2015
TSDF EPA ID:	NJD991291105
Transporter EPA ID:	NJD003812047
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	Not reported
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported

CON EDISON (Continued) **S120670376**

Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	Not reported
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	NEW YORK, NY 10003
Reason Load Was Rejected:	Not reported

AB247 **CON EDISON** **NY MANIFEST** **S119074370**
South **WILSON AVE & FLUSHING AVE SE** **N/A**
1/8-1/4 **BROOKLYN, NY 11215**
0.245 mi.
1295 ft. **Site 9 of 12 in cluster AB**

Relative:
Higher

Actual:
32 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004766697
Facility Status:	Not reported
Location Address 1:	SEC FLUSHING AVE & WILSON AVE
Code:	BP
Location Address 2:	MH 1202
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004766697
Mailing Name:	CON EDISON
Mailing Contact:	TOM TEELING
Mailing Address 1:	4 IRVING PLACE - 15TH FLOOR
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

CON EDISON (Continued) **S119074370**

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2015
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	04/12/2015
Trans1 Recv Date:	04/12/2015
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	04/14/2015
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004766697
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002618868GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	2000
Units:	P - Pounds
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

AB248 **CON EDISON** **NY MANIFEST** **S117736327**
South **FLUSHING AVE & MORGAN AVE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.245 mi.
1295 ft. **Site 10 of 12 in cluster AB**

Relative:
Higher

Actual:
32 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004495180
Facility Status:	Not reported
Location Address 1:	NEC FLUSHING AVENUE AND MORGAN
Code:	BP
Location Address 2:	AVE
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004495180
Mailing Name:	CON EDISON
Mailing Contact:	TOM TEELING
Mailing Address 1:	4 IRVING PLACE 15TH FLOOR
Mailing Address 2:	Not reported
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	2124603770

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	04/09/2014
Trans1 Recv Date:	04/09/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	04/09/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004495180
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002407034GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported

CON EDISON (Continued) **S117736327**

Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	1200
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

AB249 **NYNEX** **NY MANIFEST** **1009233489**
South **FLUSHING & MORGAN AVE** **N/A**
1/8-1/4 **BROOKLYN, NY 10016**
0.245 mi.
1295 ft. **Site 11 of 12 in cluster AB**

Relative: **Higher**
Actual: **32 ft.**

NY MANIFEST:

Country:	USA
EPA ID:	NYP000916072
Facility Status:	Not reported
Location Address 1:	FLUSHING & MORGAN AVE
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	10016
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP000916072
Mailing Name:	NYNEX
Mailing Contact:	PAUL RADLOFF
Mailing Address 1:	221 EAST 37TH STREET
Mailing Address 2:	Not reported
Mailing City:	NE YORK
Mailing State:	NY
Mailing Zip:	10016
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	2123387126

NYNEX (Continued) **1009233489**

NY MANIFEST:

Document ID:	MIA3034473
Manifest Status:	K
seq:	Not reported
Year:	1994
Trans1 State ID:	Not reported
Trans2 State ID:	Not reported
Generator Ship Date:	07/21/1994
Trans1 Recv Date:	07/21/1994
Trans2 Recv Date:	/ /
TSD Site Recv Date:	07/25/1994
Part A Recv Date:	/ /
Part B Recv Date:	08/16/1994
Generator EPA ID:	NYP000916072
Trans1 EPA ID:	NYD046765574
Trans2 EPA ID:	Not reported
TSDF ID 1:	MID096963194
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	D008 - LEAD 5.0 MG/L TCLP
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	01500
Units:	P - Pounds
Number of Containers:	005
Container Type:	DM - Metal drums, barrels
Handling Method:	L Landfill.
Specific Gravity:	100

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

AB250 **CON EDISON MANHOLE: 290** **RCRA NonGen / NLR** **1017772559**
South **FLUSHING AVE & MORGAN AVE** **NYP004495180**
1/8-1/4 **BROOKLYN, NY 11237**
0.245 mi.
1295 ft. **Site 12 of 12 in cluster AB**

Relative: RCRA NonGen / NLR:
Higher

Date form received by agency:	05/09/2014
Facility name:	CON EDISON MANHOLE: 290
Facility address:	FLUSHING AVE & MORGAN AVE

Actual:
32 ft.

CON EDISON MANHOLE: 290 (Continued) **1017772559**

NE COR
BROOKLYN, NY 11237
EPA ID: NYP004495180
Mailing address: IRVING PL, 15TH FL NE
NEW YORK, NY 10003
Contact: THOMAS TEELING
Contact address: Not reported
Not reported
Contact country: Not reported
Contact telephone: 212-460-3770
Contact email: Not reported
EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 04/09/2014
Site name: CON EDISON
Classification: Large Quantity Generator

Date form received by agency: 04/09/2014
Site name: CON EDISON
Classification: Not a generator, verified

Violation Status: No violations found

251
WNW
1/8-1/4
0.245 mi.
1296 ft.

SABIN METAL CORP **NY UST** **U001837698**
316 MESEROLE STREET **N/A**
BROOKLYN, NY 11206

Relative:
Higher

Actual:
21 ft.

UST:
Name: SABIN METAL CORP
Address: 316 MESEROLE STREET
City,State,Zip: BROOKLYN, NY 11206
Id/Status: 2-216909 / Unregulated/Closed
Program Type: PBS
Region: STATE
DEC Region: 2
Expiration Date: N/A

SABIN METAL CORP (Continued) **U001837698**

UTM X: 589932.89844
UTM Y: 4506939.32319
Site Type: Apartment Building/Office Building

Affiliation Records:

Site Id: 8180
Affiliation Type: Facility Owner
Company Name: MESEROLE STREET ASSOC., %ADMAT REALTY CORP.
Contact Type: Not reported
Contact Name: Not reported
Address1: 316 MESEROLE STREET
Address2: Not reported
City: BROOKLYN
State: NY
Zip Code: 11206
Country Code: 001
Phone: (718) 417-1415
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 8180
Affiliation Type: Mail Contact
Company Name: MESEROLE STREET ASSOC., %ADMAT REALTY CORP.
Contact Type: Not reported
Contact Name: Not reported
Address1: 316 MESEROLE STREET
Address2: Not reported
City: BROOKLYN
State: NY
Zip Code: 11206
Country Code: 001
Phone: (718) 417-1415
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 8180
Affiliation Type: Facility Operator
Company Name: SABIN METAL CORP
Contact Type: Not reported
Contact Name: SABIN METAL CORP
Address1: Not reported
Address2: Not reported
City: Not reported
State: NN
Zip Code: Not reported
Country Code: 001
Phone: (718) 381-5000
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 8180
Affiliation Type: Emergency Contact

SABIN METAL CORP (Continued) **U001837698**

Company Name:	MESEROLE STREET ASSOC., %ADMAT REALTY CORP.
Contact Type:	Not reported
Contact Name:	SABIN METAL CORP
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 381-5000
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	002
Tank ID:	22429
Tank Status:	Closed - Removed
Material Name:	Closed - Removed
Capacity Gallons:	5000
Install Date:	06/01/1986
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	9999
Common Name of Substance:	Other
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
G00 - Tank Secondary Containment - None
D00 - Pipe Type - No Piping
A00 - Tank Internal Protection - None

Tank Number:	003
Tank ID:	22430
Tank Status:	Closed - Removed
Material Name:	Closed - Removed
Capacity Gallons:	2500
Install Date:	06/01/1986
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground

SABIN METAL CORP (Continued) **U001837698**

Tank Type:	Steel/carbon steel
Material Code:	9999
Common Name of Substance:	Other
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
D00 - Pipe Type - No Piping
G00 - Tank Secondary Containment - None
A00 - Tank Internal Protection - None

AJ252 **FRANK BRUNKHORST CO.** **NY AST** **A100366063**
SSW **24 ROCK STREET** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.246 mi.
1298 ft. **Site 1 of 3 in cluster AJ**

Relative:
Higher

Actual:
28 ft.

AST:

Name:	FRANK BRUNKHORST CO.
Address:	24 ROCK STREET
City,State,Zip:	BROOKLYN, NY 11206
Region:	STATE
DEC Region:	2
Site Status:	Active
Facility Id:	2-010642
Program Type:	PBS
UTM X:	590228.62735
UTM Y:	4506455.31475
Expiration Date:	10/23/2017
Site Type:	Other

Affiliation Records:

Site Id:	74
Affiliation Type:	Facility Owner
Company Name:	FRANK BRUNCKHORST CO.
Contact Type:	MGT
Contact Name:	TIMOTHY CRUM
Address1:	24 ROCK ST
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11206
Country Code:	001
Phone:	(718) 456-3600
EMail:	Not reported
Fax Number:	Not reported
Modified By:	MSBAPTIS
Date Last Modified:	2012-11-19

FRANK BRUNKHORST CO. (Continued) **A100366063**

Site Id:	74
Affiliation Type:	Mail Contact
Company Name:	BOARS HEAD PROVISIONS CO. INC.
Contact Type:	Not reported
Contact Name:	TIMOTHY CRUM
Address1:	1950 INOVSTRY PLACE
Address2:	Not reported
City:	PETERSBERG
State:	VA
Zip Code:	23805
Country Code:	001
Phone:	(804) 733-7100
EMail:	TIM.CRUM@BOARSHEAD.COM
Fax Number:	Not reported
Modified By:	MSBAPTIS
Date Last Modified:	2012-11-19

Site Id:	74
Affiliation Type:	Facility Operator
Company Name:	FRANK BRUNCKHORST CO.
Contact Type:	Not reported
Contact Name:	BORIS JOLIC
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 456-3600
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	74
Affiliation Type:	Emergency Contact
Company Name:	FRANK BRUNCKHORST CO.
Contact Type:	Not reported
Contact Name:	BORIS JOLIC
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 456-3600
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	3
Tank Id:	26842
Material Code:	0003
Common Name of Substance:	#6 Fuel Oil (On-Site Consumption)

FRANK BRUNKHORST CO. (Continued) **A100366063**

Equipment Records:

C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
B00 - Tank External Protection - None
F00 - Pipe External Protection - None
J03 - Dispenser - Gravity
D01 - Pipe Type - Steel/Carbon Steel/Iron
K00 - Spill Prevention - None
I04 - Overfill - Product Level Gauge (A/G)
A01 - Tank Internal Protection - Epoxy Liner
H00 - Tank Leak Detection - None

Tank Location:	Aboveground in subterranean vault with access for inspections..... Tank in subterranean vault but accessible for inspection.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	Closed - In Place
Pipe Model:	Not reported
Install Date:	12/01/1946
Capacity Gallons:	12000
Tightness Test Method:	21
Date Test:	04/18/2002
Next Test Date:	Not reported
Date Tank Closed:	05/25/2005
Register:	True
Modified By:	NRLOMBAR
Last Modified:	04/14/2017
Material Name:	#6 fuel oil (on-site consumption)
Tank Number:	4
Tank Id:	208099
Material Code:	0008
Common Name of Substance:	Diesel

Equipment Records:

K01 - Spill Prevention - Catch Basin
E00 - Piping Secondary Containment - None
F06 - Pipe External Protection - Wrapped
H99 - Tank Leak Detection - Other
I01 - Overfill - Float Vent Valve
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
D01 - Pipe Type - Steel/Carbon Steel/Iron
J00 - Dispenser - None
C01 - Pipe Location - Aboveground
L00 - Piping Leak Detection - None
F02 - Pipe External Protection - Original Sacrificial Anode
G01 - Tank Secondary Containment - Diking (Aboveground)

Tank Location:	Aboveground - contact with impervious barrier... Tank bottom rests on impervious barrier, allowing visual indication of leaks.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	In Service
Pipe Model:	Not reported
Install Date:	08/01/2003
Capacity Gallons:	1000
Tightness Test Method:	NN
Date Test:	Not reported

FRANK BRUNKHORST CO. (Continued) **A100366063**

Next Test Date:	Not reported
Date Tank Closed:	Not reported
Register:	True
Modified By:	NRLOMBAR
Last Modified:	04/14/2017
Material Name:	diesel
Tank Number:	5
Tank Id:	208100
Material Code:	0008
Common Name of Substance:	Diesel

Equipment Records:

F06 - Pipe External Protection - Wrapped
C01 - Pipe Location - Aboveground
J00 - Dispenser - None
E00 - Piping Secondary Containment - None
K01 - Spill Prevention - Catch Basin
F02 - Pipe External Protection - Original Sacrificial Anode
G01 - Tank Secondary Containment - Diking (Aboveground)
L00 - Piping Leak Detection - None
A00 - Tank Internal Protection - None
B01 - Tank External Protection - Painted/Asphalt Coating
D01 - Pipe Type - Steel/Carbon Steel/Iron
I01 - Overfill - Float Vent Valve
H99 - Tank Leak Detection - Other

Tank Location:	Aboveground - contact with impervious barrier... Tank bottom rests on impervious barrier, allowing visual indication of leaks.
Tank Type:	Steel/Carbon Steel/Iron
Tank Status:	In Service
Pipe Model:	Not reported
Install Date:	04/01/2005
Capacity Gallons:	700
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	Not reported
Register:	True
Modified By:	NRLOMBAR
Last Modified:	04/14/2017
Material Name:	diesel

AJ253 **FRANK BRUNCKHORST CO LLC** **RCRA NonGen / NLR** **1001090082**
SSW **24 ROCK ST** **FINDS** **NYR000019158**
1/8-1/4 **BROOKLYN, NY 11206** **ECHO**
0.246 mi. **NY MANIFEST**
1298 ft. **Site 2 of 3 in cluster AJ**

Relative:
Higher

Actual:
28 ft.

RCRA NonGen / NLR:

Date form received by agency:	01/01/2007
Facility name:	FRANK BRUNCKHORST CO LLC
Facility address:	24 ROCK ST BROOKLYN, NY 11206-3812
EPA ID:	NYR000019158
Mailing address:	ROCK ST BROOKLYN, NY 11206-3812

FRANK BRUNCKHORST CO LLC (Continued) **1001090082**

Contact:	STERE MINA
Contact address:	ROCK ST
	BROOKLYN, NY 11206-3812
Contact country:	US
Contact telephone:	718-456-3600
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:

Owner/operator name:	FRANK BRUNCKHORST
Owner/operator address:	24 ROCK ST
	BROOKLYN, NY 11206
Owner/operator country:	US
Owner/operator telephone:	718-456-3600
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	01/01/2001
Owner/Op end date:	Not reported

Owner/operator name:	FRANK BRUNCKHORST
Owner/operator address:	24 ROCK ST
	BROOKLYN, NY 11206
Owner/operator country:	US
Owner/operator telephone:	718-456-3600
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	01/01/2001
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	01/01/2006

FRANK BRUNCKHORST CO LLC (Continued) **1001090082**

Site name: FRANK BRUNCKHORST CO LLC
Classification: Not a generator, verified

Date form received by agency: 12/28/2001
Site name: FRANK BRUNCKHORST CO LLC
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 07/08/1999
Site name: FRANK BRUNCKHORST CO LLC
Classification: Not a generator, verified

Date form received by agency: 01/30/1996
Site name: FRANK BRUNCKHORST CO LLC
Classification: Large Quantity Generator

Hazardous Waste Summary:

. Waste code: D000
. Waste name: Not Defined

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D007
. Waste name: CHROMIUM

Violation Status: No violations found

FINDS:

Registry ID: 110004522124

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

FIS (New York - Facility Information System) is New York's Department of Environmental Conservation (DEC) information system for tracking environmental facility information found across the State.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1001090082
Registry ID: 110004522124
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110004522124

NY MANIFEST:
Country: USA
EPA ID: NYR000019158

FRANK BRUNCKHORST CO LLC (Continued) **1001090082**

Facility Status:	Not reported
Location Address 1:	24 ROCK ST
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11206
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYR000019158
Mailing Name:	FRANK BRUNCKHORST CO
Mailing Contact:	STERE MINA
Mailing Address 1:	24 ROCK ST
Mailing Address 2:	Not reported
Mailing City:	BROOKLYN
Mailing State:	NY
Mailing Zip:	11206
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	7184563600

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2016
Trans1 State ID:	CT5000001495
Trans2 State ID:	Not reported
Generator Ship Date:	09/27/2016
Trans1 Recv Date:	09/27/2016
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	09/27/2016
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYR000019158
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	CT5000001495
TSDF ID 2:	Not reported
Manifest Tracking Number:	014040478JJK
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	Y
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H010
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported

FRANK BRUNCKHORST CO LLC (Continued) **1001090082**

Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	1711
Units:	P - Pounds
Number of Containers:	4
Container Type:	DM - Metal drums, barrels
Handling Method:	B Incineration, heat recovery, burning.
Specific Gravity:	1
Waste Code:	D009
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

AJ254 **FRANK BRUNKHORST CO.** **NY UST** **U004194402**
SSW **24 ROCK STREET** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.246 mi.
1298 ft. **Site 3 of 3 in cluster AJ**

Relative:
Higher

Actual:
28 ft.

UST:

Name:	FRANK BRUNKHORST CO.
Address:	24 ROCK STREET
City,State,Zip:	BROOKLYN, NY 11206
Id/Status:	2-010642 / Active
Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	10/23/2017
UTM X:	590228.62735
UTM Y:	4506455.31475
Site Type:	Other

Affiliation Records:

Site Id:	74
Affiliation Type:	Facility Owner
Company Name:	FRANK BRUNCKHORST CO.
Contact Type:	MGT
Contact Name:	TIMOTHY CRUM
Address1:	24 ROCK ST
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11206
Country Code:	001
Phone:	(718) 456-3600
EMail:	Not reported
Fax Number:	Not reported
Modified By:	MSBAPTIS
Date Last Modified:	2012-11-19

Site Id:	74
Affiliation Type:	Mail Contact

FRANK BRUNKHORST CO. (Continued) **U004194402**

Company Name:	BOARS HEAD PROVISIONS CO. INC.
Contact Type:	Not reported
Contact Name:	TIMOTHY CRUM
Address1:	1950 INOVSTRY PLACE
Address2:	Not reported
City:	PETERSBERG
State:	VA
Zip Code:	23805
Country Code:	001
Phone:	(804) 733-7100
EMail:	TIM.CRUM@BOARSHEAD.COM
Fax Number:	Not reported
Modified By:	MSBAPTIS
Date Last Modified:	2012-11-19

Site Id:	74
Affiliation Type:	Facility Operator
Company Name:	FRANK BRUNCKHORST CO.
Contact Type:	Not reported
Contact Name:	BORIS JOLIC
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 456-3600
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	74
Affiliation Type:	Emergency Contact
Company Name:	FRANK BRUNCKHORST CO.
Contact Type:	Not reported
Contact Name:	BORIS JOLIC
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 456-3600
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	1
Tank ID:	26840
Tank Status:	Closed - In Place
Material Name:	Closed - In Place
Capacity Gallons:	6000
Install Date:	12/01/1946

FRANK BRUNKHORST CO. (Continued) **U004194402**

Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0001
Common Name of Substance: #2 Fuel Oil (On-Site Consumption)

Tightness Test Method: ZZ
Date Test: 09/01/1997
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: NRLOMBAR
Last Modified: 04/14/2017

Equipment Records:

F00 - Pipe External Protection - None
B00 - Tank External Protection - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
G00 - Tank Secondary Containment - None
C02 - Pipe Location - Underground/On-ground
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
J00 - Dispenser - None

Tank Number: 2
Tank ID: 26841
Tank Status: Closed - In Place
Material Name: Closed - In Place
Capacity Gallons: 6000
Install Date: 12/01/1946
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0001
Common Name of Substance: #2 Fuel Oil (On-Site Consumption)

Tightness Test Method: ZZ
Date Test: 09/01/1997
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: NRLOMBAR
Last Modified: 04/14/2017

Equipment Records:

B00 - Tank External Protection - None
F00 - Pipe External Protection - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
G00 - Tank Secondary Containment - None
C02 - Pipe Location - Underground/On-ground
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
J00 - Dispenser - None

AG255 **CON EDISON** **NY MANIFEST** **S116550477**
SSE **154 KNICKERBOCKER AVE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.246 mi.
1298 ft. **Site 4 of 5 in cluster AG**

Relative:
Higher

Actual:
29 ft.

NY MANIFEST:

Country:	USA
EPA ID:	NYP004488672
Facility Status:	Not reported
Location Address 1:	154 KNICKERBOCKER AVE
Code:	BP
Location Address 2:	SB72713
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11207
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYP004488672
Mailing Name:	CON EDISON
Mailing Contact:	CON EDISION
Mailing Address 1:	4 IRVING PL
Mailing Address 2:	15TH FL
Mailing City:	NEW YORK
Mailing State:	NY
Mailing Zip:	10003
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	NJD003812047
Trans2 State ID:	Not reported
Generator Ship Date:	04/03/2014
Trans1 Recv Date:	04/03/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	04/03/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYP004488672
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD991291105
TSDF ID 2:	Not reported
Manifest Tracking Number:	002361040GBF
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported

CON EDISON (Continued) **S116550477**

Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H110
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	40
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

AG256 **CON EDISON SERVICE BOX: 72713** **RCRA NonGen / NLR** **1017771920**
SSE **154 KNICKERBOCKER AVE** **NYP004488672**
1/8-1/4 **BROOKLYN, NY 11237**
0.246 mi.
1298 ft. **Site 5 of 5 in cluster AG**

Relative:
Higher

Actual:
29 ft.

RCRA NonGen / NLR:

Date form received by agency:	05/03/2014
Facility name:	CON EDISON SERVICE BOX: 72713
Facility address:	154 KNICKERBOCKER AVE BROOKLYN, NY 11237
EPA ID:	NYP004488672
Mailing address:	IRVING PL, 15TH FL NE NEW YORK, NY 10003
Contact:	THOMAS TEELING
Contact address:	Not reported Not reported
Contact country:	Not reported
Contact telephone:	212-460-3770
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No

CON EDISON SERVICE BOX: 72713 (Continued) **1017771920**

On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Historical Generators:

Date form received by agency:	04/03/2014
Site name:	CON EDISON
Classification:	Small Quantity Generator

Date form received by agency:	04/03/2014
Site name:	CON EDISON
Classification:	Not a generator, verified

Violation Status: No violations found

AK257 **UNIVERSAL SCRAP PROCESSORS CORP** **NY SWF/LF** **S111072463**
ESE **27 STEWART AVE** **NY Spills** **N/A**
1/8-1/4 **BROOKLYN, NY 11237** **NY SPDES**
0.248 mi.
1309 ft. **Site 1 of 2 in cluster AK**

Relative:
Lower

Actual:
17 ft.

SWF/LF:

Flag:	INACTIVE
Region Code:	2
Phone Number:	7183812234
Owner Name:	Universal Scrap Processors Corp
Owner Type:	Private
Owner Address:	27 Stewart Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11237
Owner Email:	universalscrapprocessor@gmail.com
Owner Phone:	7183812234
Contact Name:	James Ruggiero
Contact Address:	27 Steward Avenue
Contact Addr2:	Not reported
Contact City,St,Zip:	Brooklyn, NY 11237
Contact Email:	universalscrapprocessors@gmail.com
Contact Phone:	7183812234
Activity Desc:	z Retired - Vehicle Dismantling Facility
Activity Number:	[7106524]
Active:	No
East Coordinate:	590778
North Coordinate:	4506792
Accuracy Code:	Not reported
Regulatory Status:	Not reported
Waste Type:	Not reported
Authorization #:	Not reported
Authorization Date:	Not reported
Expiration Date:	Not reported
Operator Name:	Universal Scrap Processors Corp
Operator Type:	Private
Laste Date:	Not reported

UNIVERSAL SCRAP PROCESSORS CORP (Continued) **S111072463**

SPILLS:

Name:	UNIVERSAL SCRAP PROCESSOR
Address:	27 STEWART AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	1305242 / 2017-10-05
Facility ID:	1305242
Facility Type:	ER
DER Facility ID:	440924
Site ID:	485801
DEC Region:	2
Spill Cause:	Housekeeping
Spill Class:	C3
SWIS:	2401
Spill Date:	2013-08-14
Investigator:	TJDEMEO
Referred To:	Not reported
Reported to Dept:	2013-08-14
CID:	Not reported
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Other
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2013-08-14
Spill Record Last Update:	2017-10-05
Spiller Name:	NORMAN TEICLER
Spiller Company:	UNIVERSAL SCRAP PROCESSOR
Spiller Address:	27 STEWART AVE
Spiller Company:	999
Contact Name:	NORMAN TEICLER
DEC Memo:	"4/4/16 - See BCP C224210, K. Forster, PM. Spill to remain open until BCP complete. 10/5/17 TJD Site inspection. The former junk yard operating at this address is no longer in business. All structures have been removed from the property and the parcel is now vacant. As per above note this site is in the BCP program which is being managed by Central Office DER staff. Following the inspection, DeMeo (R2) contacted Forster (CO) regarding this reported housekeeping condition at a former junk yard site - based upon staff discussions the following decision has been made. Spill 1305242 is closed and cross-referenced to spill 0510000. CO DER staff will manage both the spill and BCP project simultaneously. "
Remarks:	"sheen noted on water, c/u pending, DEC Inspection"

All Materials:

Site ID:	485801
Operable Unit ID:	1235458
Operable Unit:	01
Material ID:	2234716
Material Code:	0015
Material Name:	motor oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.25

UNIVERSAL SCRAP PROCESSORS CORP (Continued) **S111072463**

Units:	G
Recovered:	Not reported
Oxygenate:	Not reported

SPDES:

Permit Number:	NYR00E020
State-Region:	02
Expiration Date:	09/30/2017
Current Major Minor Status:	Minor
Primary Facility SIC Code:	5093
State Water Body Name:	ENGLISH KILLS
Limit Set Status Flag:	Active
Total Actual Average Flow(MGD):	Not reported
Total App Design Flow(MGD):	Not reported
UDF1:	Not reported
Lat/Long:	+40.706 / -73.925
DMR Cognizant Official:	Not reported
UDF2:	Not reported
UDF3:	Not reported
FIPS County Code:	NY047
Non-Gov Permit Affiliation Type Desc:	DMR Mailing Address
Non-Gov Permit Org Formal Name:	TABS CONSULTING GROUP INC
Non-Gov Permit Street Address:	UNIVERSAL SCRAP PROCESSORS CORP
Non-Gov Permit Supplemental Location:	2 52ND ST, BOX B11
Non-Gov Permit City:	BROOKLYN
Non-Gov Permit State Code:	NY
Non-Gov Permit Zip Code:	11232
Non-Gov Facility Affiliation Type Desc:	Owner
Non-Gov Facility Org Formal Name:	UNIVERSAL SCRAP PROCESSORS CORP
Non-Gov Facility Street Address:	UNIVERSAL SCRAP PROCESSORS CORP
Non-Gov Facility Supplemental Location:	27 STEWART AVE
Non-Gov Facility City:	BROOKLYN
Non-Gov Facility State Code:	NY
Non-Gov Facility Zip Code:	11237
State Water Body:	Not reported
UDF2:	Not reported
UDF3:	Not reported
FIPS County Code:	NY047
Non-Gov Permit Affiliation Type Desc:	Permittee
Non-Gov Permit Org Formal Name:	UNIVERSAL SCRAP PROCESSORS CORP
Non-Gov Permit Street Address:	27 STEWART AVE
Non-Gov Permit Supplemental Location:	Not reported
Non-Gov Permit City:	BROOKLYN
Non-Gov Permit State Code:	NY
Non-Gov Permit Zip Code:	11237
Non-Gov Facility Affiliation Type Desc:	Owner
Non-Gov Facility Org Formal Name:	UNIVERSAL SCRAP PROCESSORS CORP
Non-Gov Facility Street Address:	UNIVERSAL SCRAP PROCESSORS CORP
Non-Gov Facility Supplemental Location:	27 STEWART AVE
Non-Gov Facility City:	BROOKLYN
Non-Gov Facility State Code:	NY
Non-Gov Facility Zip Code:	11237

UNIVERSAL SCRAP PROCESSORS CORP (Continued) **S111072463**

State Water Body: Not reported

UDF2: Not reported
UDF3: Not reported
FIPS County Code: NY047

Non-Gov Permit Affiliation Type Desc: Not reported
Non-Gov Permit Org Formal Name: Not reported
Non-Gov Permit Street Address: Not reported
Non-Gov Permit Supplemental Location: Not reported
Non-Gov Permit City: Not reported
Non-Gov Permit State Code: Not reported
Non-Gov Permit Zip Code: Not reported
Non-Gov Facility Affiliation Type Desc: Owner
Non-Gov Facility Org Formal Name: UNIVERSAL SCRAP PROCESSORS CORP
Non-Gov Facility Street Address: UNIVERSAL SCRAP PROCESSORS CORP
Non-Gov Facility Supplemental Location: 27 STEWART AVE
Non-Gov Facility City: BROOKLYN
Non-Gov Facility State Code: NY
Non-Gov Facility Zip Code: 11237
State Water Body: Not reported

AK258 **UNIVERSAL SCRAP PROCESSORS CORP.** **NY AST** **A100366134**
ESE **27 STEWART AVENUE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.248 mi.
1309 ft. **Site 2 of 2 in cluster AK**

Relative: **Lower**

Actual: **17 ft.**

AST:
Name: UNIVERSAL SCRAP PROCESSORS CORP.
Address: 27 STEWART AVENUE
City,State,Zip: BROOKLYN, NY 11237
Region: STATE
DEC Region: 2
Site Status: Unregulated/Closed
Facility Id: 2-611944
Program Type: PBS
UTM X: 590777.75938
UTM Y: 4506792.08412
Expiration Date: N/A
Site Type: Other

Affiliation Records:
Site Id: 477622
Affiliation Type: Facility Owner
Company Name: UNIVERSAL SCRAP PROCESSORS CORP.
Contact Type: Not reported
Contact Name: Not reported
Address1: 27 STEWART AVENUE
Address2: Not reported
City: BROOKLYN
State: NY
Zip Code: 11234
Country Code: 001
Phone: (718) 381-2234
EMail: Not reported
Fax Number: Not reported
Modified By: LXZIELIN
Date Last Modified: 2014-04-08

UNIVERSAL SCRAP PROCESSORS CORP. (Continued) **A100366134**

Site Id:	477622
Affiliation Type:	Mail Contact
Company Name:	UNIVERSAL SCRAP PROCESSORS CORP.
Contact Type:	Not reported
Contact Name:	JAIME RUGGIERO
Address1:	27 STEWART AVENUE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(718) 381-2234
EMail:	UNIVERSALSCRAPPROCESSORS@GMAIL.COM
Fax Number:	Not reported
Modified By:	NRLOMBAR
Date Last Modified:	2013-01-08

Site Id:	477622
Affiliation Type:	Facility Operator
Company Name:	UNIVERSAL SCRAP PROCESSORS CORP.
Contact Type:	Not reported
Contact Name:	RONNIE POLICARI
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	999
Phone:	(718) 381-2234
EMail:	Not reported
Fax Number:	Not reported
Modified By:	LXZIELIN
Date Last Modified:	2014-04-08

Site Id:	477622
Affiliation Type:	Emergency Contact
Company Name:	UNIVERSAL SCRAP PROCESSORS CORP.
Contact Type:	Not reported
Contact Name:	RONNIE POLICARI
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	999
Phone:	(718) 381-2234
EMail:	Not reported
Fax Number:	Not reported
Modified By:	LXZIELIN
Date Last Modified:	2014-04-08

Tank Info:

Tank Number:	001
Tank Id:	246891
Material Code:	0022
Common Name of Substance:	Waste Oil/Used Oil

UNIVERSAL SCRAP PROCESSORS CORP. (Continued) **A100366134**

Equipment Records:

	I04 - Overfill - Product Level Gauge (A/G)
	G05 - Tank Secondary Containment - Synthetic Liner
	A03 - Tank Internal Protection - Fiberglass Liner (FRP)
	C00 - Pipe Location - No Piping
	E00 - Piping Secondary Containment - None
	B04 - Tank External Protection - Fiberglass
	J02 - Dispenser - Suction Dispenser
	L00 - Piping Leak Detection - None
	D00 - Pipe Type - No Piping
	H06 - Tank Leak Detection - Impervious Barrier/Concrete Pad (A/G)
	F00 - Pipe External Protection - None
	K00 - Spill Prevention - None
Tank Location:	Aboveground - on saddles, legs, racks, etc.... Tank bottom is elevated above grade or tank pad, allowing visual inspection.
Tank Type:	Fiberglass Reinforced Plastic
Tank Status:	Closed - Removed
Pipe Model:	Not reported
Install Date:	09/01/2012
Capacity Gallons:	200
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Date Tank Closed:	04/17/2014
Register:	True
Modified By:	NRLOMBAR
Last Modified:	04/14/2017
Material Name:	waste oil/used oil

AL259 **304 BOERUM ST. LLC** **NY AST** **U003740202**
WSW **304 BOERUM ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.249 mi.
1314 ft. **Site 1 of 2 in cluster AL**

Relative: **Lower**

Actual: **17 ft.**

AST:

Name:	304 BOERUM ST. LLC
Address:	304 BOERUM ST
City,State,Zip:	BROOKLYN, NY 11206
Region:	STATE
DEC Region:	2
Site Status:	Active
Facility Id:	2-604506
Program Type:	PBS
UTM X:	589955.01459
UTM Y:	4506698.51414
Expiration Date:	05/11/2020
Site Type:	Apartment Building/Office Building

Affiliation Records:

Site Id:	26378
Affiliation Type:	Facility Owner
Company Name:	304 BOERUM ST. LLC
Contact Type:	MANAGING PARTNER/OWNER
Contact Name:	ROB HERSCHENFELD
Address1:	304 BOERUM ST.
Address2:	Not reported
City:	BROOKLYN

304 BOERUM ST. LLC (Continued) **U003740202**

State: NY
Zip Code: 11206
Country Code: 001
Phone: (718) 456-6801
EMail: Not reported
Fax Number: Not reported
Modified By: CGFREEDM
Date Last Modified: 2015-03-30

Site Id: 26378
Affiliation Type: Mail Contact
Company Name: 304 BOERUM ST. LLC
Contact Type: Not reported
Contact Name: ROB HERSCHENFELD
Address1: 304 BOERUM ST.
Address2: Not reported
City: BROOKLYN
State: NY
Zip Code: 11206
Country Code: 001
Phone: (718) 599-4019
EMail: Not reported
Fax Number: Not reported
Modified By: KXTANG
Date Last Modified: 2005-03-15

Site Id: 26378
Affiliation Type: Facility Operator
Company Name: 304 BOERUM ST. LLC
Contact Type: Not reported
Contact Name: ROB HERSCHENFELD
Address1: Not reported
Address2: Not reported
City: Not reported
State: NN
Zip Code: Not reported
Country Code: 001
Phone: (718) 456-6801
EMail: Not reported
Fax Number: Not reported
Modified By: KXTANG
Date Last Modified: 2005-03-15

Site Id: 26378
Affiliation Type: Emergency Contact
Company Name: 304 BOERUM ST. LLC
Contact Type: Not reported
Contact Name: ROB HERSCHENFELD
Address1: Not reported
Address2: Not reported
City: Not reported
State: NN
Zip Code: Not reported
Country Code: 999
Phone: (917) 681-2172
EMail: Not reported
Fax Number: Not reported

304 BOERUM ST. LLC (Continued) **U003740202**

Modified By: KXTANG
Date Last Modified: 2005-03-15

Tank Info:

Tank Number: 002
Tank Id: 58636
Material Code: 0001
Common Name of Substance: #2 Fuel Oil (On-Site Consumption)

Equipment Records:

B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
E00 - Piping Secondary Containment - None
G03 - Tank Secondary Containment - Vault (w/o access)
H00 - Tank Leak Detection - None
L09 - Piping Leak Detection - Exempt Suction Piping
D00 - Pipe Type - No Piping
J02 - Dispenser - Suction Dispenser
I04 - Overfill - Product Level Gauge (A/G)
A00 - Tank Internal Protection - None
K00 - Spill Prevention - None
I05 - Overfill - Vent Whistle

Tank Location: Aboveground - contact with soil.... Tank bottom rests on soil, allowing no visual inspection.
Tank Type: Steel/Carbon Steel/Iron
Tank Status: In Service
Pipe Model: Not reported
Install Date: 12/01/1985
Capacity Gallons: 3000
Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Date Tank Closed: Not reported
Register: True
Modified By: CGFREEDM
Last Modified: 04/14/2017
Material Name: #2 fuel oil (on-site consumption)

AL260 **304 BOERUM ST. LLC** **NY UST** **U004078555**
WSW **304 BOERUM ST** **N/A**
1/8-1/4 **BROOKLYN, NY 11206**
0.249 mi.
1314 ft. **Site 2 of 2 in cluster AL**

Relative: **Lower**
Actual: **17 ft.**

UST:
Name: 304 BOERUM ST. LLC
Address: 304 BOERUM ST
City,State,Zip: BROOKLYN, NY 11206
Id/Status: 2-604506 / Active
Program Type: PBS
Region: STATE
DEC Region: 2
Expiration Date: 05/11/2020
UTM X: 589955.01459
UTM Y: 4506698.51414

304 BOERUM ST. LLC (Continued) **U004078555**

Site Type: Apartment Building/Office Building

Affiliation Records:

Site Id: 26378
Affiliation Type: Facility Owner
Company Name: 304 BOERUM ST. LLC
Contact Type: MANAGING PARTNER/OWNER
Contact Name: ROB HERSCHENFELD
Address1: 304 BOERUM ST.
Address2: Not reported
City: BROOKLYN
State: NY
Zip Code: 11206
Country Code: 001
Phone: (718) 456-6801
EMail: Not reported
Fax Number: Not reported
Modified By: CGFREEDM
Date Last Modified: 2015-03-30

Site Id: 26378
Affiliation Type: Mail Contact
Company Name: 304 BOERUM ST. LLC
Contact Type: Not reported
Contact Name: ROB HERSCHENFELD
Address1: 304 BOERUM ST.
Address2: Not reported
City: BROOKLYN
State: NY
Zip Code: 11206
Country Code: 001
Phone: (718) 599-4019
EMail: Not reported
Fax Number: Not reported
Modified By: KXTANG
Date Last Modified: 2005-03-15

Site Id: 26378
Affiliation Type: Facility Operator
Company Name: 304 BOERUM ST. LLC
Contact Type: Not reported
Contact Name: ROB HERSCHENFELD
Address1: Not reported
Address2: Not reported
City: Not reported
State: NN
Zip Code: Not reported
Country Code: 001
Phone: (718) 456-6801
EMail: Not reported
Fax Number: Not reported
Modified By: KXTANG
Date Last Modified: 2005-03-15

Site Id: 26378
Affiliation Type: Emergency Contact
Company Name: 304 BOERUM ST. LLC
Contact Type: Not reported

304 BOERUM ST. LLC (Continued) **U004078555**

Contact Name:	ROB HERSCHENFELD
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	999
Phone:	(917) 681-2172
EMail:	Not reported
Fax Number:	Not reported
Modified By:	KXTANG
Date Last Modified:	2005-03-15

Tank Info:

Tank Number:	001
Tank ID:	58028
Tank Status:	Closed - In Place
Material Name:	Closed - In Place
Capacity Gallons:	1500
Install Date:	Not reported
Date Tank Closed:	03/01/2000
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
H00 - Tank Leak Detection - None
I00 - Overfill - None
B00 - Tank External Protection - None
F00 - Pipe External Protection - None
D10 - Pipe Type - Copper
A00 - Tank Internal Protection - None

AM261 **DSNY BK DISTRICT 1/4 GARAGE** **NY UST** **U004122263**
NNE **161 VARICK AVENUE** **N/A**
1/8-1/4 **BROOKLYN, NY 11237**
0.249 mi.
1316 ft. **Site 1 of 5 in cluster AM**

Relative:
Lower

Actual:
12 ft.

UST:

Name:	DSNY BK DISTRICT 1/4 GARAGE
Address:	161 VARICK AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Id/Status:	2-610872 / Active
Program Type:	PBS

DSNY BK DISTRICT 1/4 GARAGE (Continued) **U004122263**

Region:	STATE
DEC Region:	2
Expiration Date:	10/19/2022
UTM X:	590493.26574
UTM Y:	4507230.73845
Site Type:	Municipality (Incl. Waste Water Treatment Plants, Utilities, Swimming Pools, etc.)

Affiliation Records:

Site Id:	400593
Affiliation Type:	Facility Owner
Company Name:	NYC DEPARTMENT OF SANITATION
Contact Type:	Not reported
Contact Name:	JOSEPH CENDAGORTA
Address1:	125 WORTH STREET, ROOM 823B
Address2:	Not reported
City:	NEW YORK
State:	NY
Zip Code:	10013
Country Code:	001
Phone:	(646) 885-4856
EMail:	Not reported
Fax Number:	Not reported
Modified By:	DMPOKRZY
Date Last Modified:	2018-01-03

Site Id:	400593
Affiliation Type:	Mail Contact
Company Name:	NYC DEPARTMENT OF SANITATION
Contact Type:	Not reported
Contact Name:	FRANK SCARPACI
Address1:	125 WORTH STREET
Address2:	ROOM 823 B
City:	NEW YORK
State:	NY
Zip Code:	10013
Country Code:	001
Phone:	(646) 885-4887
EMail:	FSCARPACI@DSNY.NYC.GOV
Fax Number:	Not reported
Modified By:	DAFRANCI
Date Last Modified:	2016-11-16

Site Id:	400593
Affiliation Type:	Facility Operator
Company Name:	DSNY BK DISTRICT 1/4 GARAGE
Contact Type:	Not reported
Contact Name:	DAVID KUPERSZMID
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 571-6413
EMail:	Not reported
Fax Number:	Not reported
Modified By:	DAFRANCI
Date Last Modified:	2016-11-16

DSNY BK DISTRICT 1/4 GARAGE (Continued) **U004122263**

Site Id:	400593
Affiliation Type:	Emergency Contact
Company Name:	NYC DEPARTMENT OF SANITATION
Contact Type:	Not reported
Contact Name:	BUREAU OF CLEANING & COLLECTION
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	999
Phone:	(646) 885-5051
EMail:	Not reported
Fax Number:	Not reported
Modified By:	MXAJOKU
Date Last Modified:	2015-11-18

Tank Info:

Tank Number:	001
Tank ID:	223930
Tank Status:	In Service
Material Name:	In Service
Capacity Gallons:	4000
Install Date:	10/19/2007
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Equivalent technology
Material Code:	2710
Common Name of Substance:	Biodiesel
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	D
Modified By:	DMPOKRZY
Last Modified:	01/03/2018

Equipment Records:

B04 - Tank External Protection - Fiberglass
D06 - Pipe Type - Fiberglass Reinforced Plastic (FRP)
I02 - Overfill - High Level Alarm
K01 - Spill Prevention - Catch Basin
L09 - Piping Leak Detection - Exempt Suction Piping
E04 - Piping Secondary Containment - Double walled UG
C02 - Pipe Location - Underground/On-ground
F04 - Pipe External Protection - Fiberglass
J02 - Dispenser - Suction Dispenser
L01 - Piping Leak Detection - Interstitial - Electronic Monitoring
A00 - Tank Internal Protection - None
H01 - Tank Leak Detection - Interstitial - Electronic Monitoring
I03 - Overfill - Automatic Shut-Off
G04 - Tank Secondary Containment - Double-Walled (Underground)

Tank Number:	002

DSNY BK DISTRICT 1/4 GARAGE (Continued) **U004122263**

Tank ID: 223929
Tank Status: In Service
Material Name: In Service
Capacity Gallons: 4000
Install Date: 10/19/2007
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Equivalent technology
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: D
Modified By: DMPOKRZY
Last Modified: 01/03/2018

Equipment Records:

L01 - Piping Leak Detection - Interstitial - Electronic Monitoring
F04 - Pipe External Protection - Fiberglass
J02 - Dispenser - Suction Dispenser
K01 - Spill Prevention - Catch Basin
L09 - Piping Leak Detection - Exempt Suction Piping
I02 - Overfill - High Level Alarm
B04 - Tank External Protection - Fiberglass
D06 - Pipe Type - Fiberglass Reinforced Plastic (FRP)
E04 - Piping Secondary Containment - Double walled UG
C02 - Pipe Location - Underground/On-ground
H01 - Tank Leak Detection - Interstitial - Electronic Monitoring
I03 - Overfill - Automatic Shut-Off
A00 - Tank Internal Protection - None
G04 - Tank Secondary Containment - Double-Walled (Underground)

Tank Number: 003
Tank ID: 229956
Tank Status: In Service
Material Name: In Service
Capacity Gallons: 2500
Install Date: 10/19/2007
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Fiberglass coated steel
Material Code: 0010
Common Name of Substance: Hydraulic Oil

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: DMPOKRZY
Last Modified: 01/03/2018

Equipment Records:

C03 - Pipe Location - Aboveground/Underground Combination

DSNY BK DISTRICT 1/4 GARAGE (Continued) **U004122263**

F04 - Pipe External Protection - Fiberglass
J02 - Dispenser - Suction Dispenser
L01 - Piping Leak Detection - Interstitial - Electronic Monitoring
E04 - Piping Secondary Containment - Double walled UG
B04 - Tank External Protection - Fiberglass
I02 - Overfill - High Level Alarm
K01 - Spill Prevention - Catch Basin
L09 - Piping Leak Detection - Exempt Suction Piping
G04 - Tank Secondary Containment - Double-Walled (Underground)
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
H01 - Tank Leak Detection - Interstitial - Electronic Monitoring
I03 - Overfill - Automatic Shut-Off

Tank Number:	004
Tank ID:	223928
Tank Status:	In Service
Material Name:	In Service
Capacity Gallons:	2500
Install Date:	10/19/2007
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Fiberglass coated steel
Material Code:	0015
Common Name of Substance:	Motor Oil
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	D
Modified By:	DMPOKRZY
Last Modified:	01/03/2018

Equipment Records:

B04 - Tank External Protection - Fiberglass
I02 - Overfill - High Level Alarm
K01 - Spill Prevention - Catch Basin
L09 - Piping Leak Detection - Exempt Suction Piping
C03 - Pipe Location - Aboveground/Underground Combination
F04 - Pipe External Protection - Fiberglass
J02 - Dispenser - Suction Dispenser
L01 - Piping Leak Detection - Interstitial - Electronic Monitoring
E04 - Piping Secondary Containment - Double walled UG
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
H01 - Tank Leak Detection - Interstitial - Electronic Monitoring
I03 - Overfill - Automatic Shut-Off
G04 - Tank Secondary Containment - Double-Walled (Underground)

Tank Number:	005
Tank ID:	223927
Tank Status:	In Service
Material Name:	In Service
Capacity Gallons:	550
Install Date:	10/19/2007

DSNY BK DISTRICT 1/4 GARAGE (Continued) **U004122263**

Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Fiberglass coated steel
Material Code: 0022
Common Name of Substance: Waste Oil/Used Oil

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: D
Modified By: DMPOKRZY
Last Modified: 01/03/2018

Equipment Records:

E04 - Piping Secondary Containment - Double walled UG
B04 - Tank External Protection - Fiberglass
I02 - Overfill - High Level Alarm
K01 - Spill Prevention - Catch Basin
C02 - Pipe Location - Underground/On-ground
F04 - Pipe External Protection - Fiberglass
L01 - Piping Leak Detection - Interstitial - Electronic Monitoring
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
H01 - Tank Leak Detection - Interstitial - Electronic Monitoring
J00 - Dispenser - None
G04 - Tank Secondary Containment - Double-Walled (Underground)

Tank Number: 006
Tank ID: 223934
Tank Status: In Service
Material Name: In Service
Capacity Gallons: 4000
Install Date: 10/19/2007
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Equivalent technology
Material Code: 2710
Common Name of Substance: Biodiesel

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: D
Modified By: DMPOKRZY
Last Modified: 01/03/2018

Equipment Records:

C02 - Pipe Location - Underground/On-ground
F04 - Pipe External Protection - Fiberglass
J02 - Dispenser - Suction Dispenser
L01 - Piping Leak Detection - Interstitial - Electronic Monitoring
B04 - Tank External Protection - Fiberglass
D06 - Pipe Type - Fiberglass Reinforced Plastic (FRP)
I02 - Overfill - High Level Alarm
K01 - Spill Prevention - Catch Basin

DSNY BK DISTRICT 1/4 GARAGE (Continued) **U004122263**

L09 - Piping Leak Detection - Exempt Suction Piping
E04 - Piping Secondary Containment - Double walled UG
A00 - Tank Internal Protection - None
H01 - Tank Leak Detection - Interstitial - Electronic Monitoring
I03 - Overfill - Automatic Shut-Off
G04 - Tank Secondary Containment - Double-Walled (Underground)

Tank Number: 007
Tank ID: 223933
Tank Status: In Service
Material Name: In Service
Capacity Gallons: 4000
Install Date: 10/19/2007
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Equivalent technology
Material Code: 0009
Common Name of Substance: Gasoline

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: D
Modified By: DMPOKRZY
Last Modified: 01/03/2018

Equipment Records:

B04 - Tank External Protection - Fiberglass
D06 - Pipe Type - Fiberglass Reinforced Plastic (FRP)
I02 - Overfill - High Level Alarm
K01 - Spill Prevention - Catch Basin
L09 - Piping Leak Detection - Exempt Suction Piping
A00 - Tank Internal Protection - None
H01 - Tank Leak Detection - Interstitial - Electronic Monitoring
I03 - Overfill - Automatic Shut-Off
E04 - Piping Secondary Containment - Double walled UG
C02 - Pipe Location - Underground/On-ground
F04 - Pipe External Protection - Fiberglass
J02 - Dispenser - Suction Dispenser
L01 - Piping Leak Detection - Interstitial - Electronic Monitoring
G04 - Tank Secondary Containment - Double-Walled (Underground)

Tank Number: 008
Tank ID: 229957
Tank Status: In Service
Material Name: In Service
Capacity Gallons: 2500
Install Date: 10/19/2007
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Fiberglass coated steel
Material Code: 0010
Common Name of Substance: Hydraulic Oil

DSNY BK DISTRICT 1/4 GARAGE (Continued) **U004122263**

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: DMPOKRZY
Last Modified: 01/03/2018

Equipment Records:

E04 - Piping Secondary Containment - Double walled UG
B04 - Tank External Protection - Fiberglass
I02 - Overfill - High Level Alarm
K01 - Spill Prevention - Catch Basin
L09 - Piping Leak Detection - Exempt Suction Piping
C03 - Pipe Location - Aboveground/Underground Combination
F04 - Pipe External Protection - Fiberglass
J02 - Dispenser - Suction Dispenser
L01 - Piping Leak Detection - Interstitial - Electronic Monitoring
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
H01 - Tank Leak Detection - Interstitial - Electronic Monitoring
I03 - Overfill - Automatic Shut-Off
G04 - Tank Secondary Containment - Double-Walled (Underground)

Tank Number: 009
Tank ID: 223932
Tank Status: In Service
Material Name: In Service
Capacity Gallons: 2500
Install Date: 10/19/2007
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Fiberglass coated steel
Material Code: 0015
Common Name of Substance: Motor Oil

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: D
Modified By: DMPOKRZY
Last Modified: 01/03/2018

Equipment Records:

J02 - Dispenser - Suction Dispenser
L01 - Piping Leak Detection - Interstitial - Electronic Monitoring
F04 - Pipe External Protection - Fiberglass
C03 - Pipe Location - Aboveground/Underground Combination
K01 - Spill Prevention - Catch Basin
L09 - Piping Leak Detection - Exempt Suction Piping
I02 - Overfill - High Level Alarm
B04 - Tank External Protection - Fiberglass
E04 - Piping Secondary Containment - Double walled UG
I03 - Overfill - Automatic Shut-Off
D01 - Pipe Type - Steel/Carbon Steel/Iron
H01 - Tank Leak Detection - Interstitial - Electronic Monitoring
A00 - Tank Internal Protection - None

DSNY BK DISTRICT 1/4 GARAGE (Continued) **U004122263**

G04 - Tank Secondary Containment - Double-Walled (Underground)

Tank Number:	010
Tank ID:	223931
Tank Status:	In Service
Material Name:	In Service
Capacity Gallons:	550
Install Date:	10/19/2007
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Fiberglass coated steel
Material Code:	0022
Common Name of Substance:	Waste Oil/Used Oil
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	D
Modified By:	DMPOKRZY
Last Modified:	01/03/2018

Equipment Records:

E04 - Piping Secondary Containment - Double walled UG
B04 - Tank External Protection - Fiberglass
I02 - Overfill - High Level Alarm
K01 - Spill Prevention - Catch Basin
C02 - Pipe Location - Underground/On-ground
F04 - Pipe External Protection - Fiberglass
L01 - Piping Leak Detection - Interstitial - Electronic Monitoring
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron
H01 - Tank Leak Detection - Interstitial - Electronic Monitoring
J00 - Dispenser - None
G04 - Tank Secondary Containment - Double-Walled (Underground)

AM262 **NYC DEPART OF SANITATION (VARICK ST)** **NY LTANKS** **S106003231**
NNE **VARICK AVE** **NY Spills** **N/A**
1/8-1/4 **BROOKLYN, NY 11237** **NY MANIFEST**
0.249 mi.
1316 ft. **Site 2 of 5 in cluster AM**

Relative: **Lower**
Actual: **12 ft.**

LTANKS:

Name:	DEPT OF SANITATION SITE
Address:	161 VARICK AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0305740 / 2003-10-16
Facility ID:	0305740
Site ID:	158270
Spill Date:	2003-08-29
Spill Cause:	Tank Failure
Spill Source:	Unknown
Spill Class:	C4
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	CESAWYER
Referred To:	Not reported

NYC DEPART OF SANITATION (VARICK ST) (Continued) **S106003231**

Reported to Dept:	2003-08-29
CID:	205
Water Affected:	Not reported
Spill Notifier:	Responsible Party
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	2003-08-29
Spill Record Last Update:	2003-10-16
Spiller Name:	Not reported
Spiller Company:	UNKNOWN
Spiller Address:	Not reported
Spiller County:	999
Spiller Contact:	CALLER
Spiller Phone:	Not reported
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	138348
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was SAWYER 10/16/03 1030 Hrs - Sawyer - I talked to Roland Fisher of Tyree Environmental about the soil contamination in the area of the two 550 gallon tanks that they have already removed. Monday 10/20 they are going to remove contaminated soil and try to get clean endpoint samples from the four sides. There is a previous spill open at this address please reference #0201226. Closed. "
Remarks:	"CALLER DUG UP OLD TANKS THAT LEAKED."

All Materials:

Site ID:	158270
Operable Unit ID:	874196
Operable Unit:	01
Material ID:	502981
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

SPILLS:

Name:	161 / 165 VARICK AVE
Address:	161 VARICK AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0201226 / 2006-03-29
Facility ID:	0201226
Facility Type:	ER
DER Facility ID:	138348
Site ID:	164054
DEC Region:	2
Spill Cause:	Unknown
Spill Class:	C3
SWIS:	2401

NYC DEPART OF SANITATION (VARICK ST) (Continued) **S106003231**

Spill Date:	2002-05-02
Investigator:	DJEATON
Referred To:	Not reported
Reported to Dept:	2002-05-02
CID:	205
Water Affected:	Not reported
Spill Source:	Unknown
Spill Notifier:	Responsible Party
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2002-05-02
Spill Record Last Update:	2006-03-29
Spiller Name:	Not reported
Spiller Company:	UNKNOWN
Spiller Address:	Not reported
Spiller Company:	999
Contact Name:	CALLER
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was SAWYER Spill Nos. 0305740 and 0204630 have been consolidated under this Spill No. 8/20/02: FUTURE DEPT OF SANITATION DISTRICT 1 AND 4 GARAGE. HIGH LEVELS OF PCB'S. HWR MEETING WITH LIRO ON 8/20/02. SMM. 10/16/03 1030 Hrs - Sawyer - I discussed with Roland Fisher of Tyree Environmental the contaminated soil in the area of the removal of the two 550 gallon tanks. He told me about the excavation planned for 10/20. I informed him that this site had tested high for PCB's in the past. This factor must also be addressed. 10/20/03 1030 Hrs - Sawyer - Met with Roland Fisher and Barry Aronowitz of Arnell Construction Corp. at the site. They had a back hoe dig out approximatly 35 cubic yds with no endpoints in site. Overall contractor stopped excavation with plans to meet and discuss another path of remediation. 02/15/06 File reviewed, DOS has submitted various reports. D. Wolterding had previous contact with the DOS, recommended signing agreement - no legal agreement signed. 03/29/06 Recommended next: Transfer project from spills to Haz Waste Remediation, PCBs an issue here. BURA to forward to BURC/REGION."
Remarks:	"caller doing site work found contaminated soil."

All Materials:

Site ID:	164054
Operable Unit ID:	854559
Operable Unit:	01
Material ID:	522645
Material Code:	0066A
Material Name:	unknown petroleum
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

Name:	SPILL NUMBER 0204630
Address:	161 VARICK AVE

NYC DEPART OF SANITATION (VARICK ST) (Continued) **S106003231**

City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0204630 / 2003-02-13
Facility ID:	0204630
Facility Type:	ER
DER Facility ID:	138348
Site ID:	164055
DEC Region:	2
Spill Cause:	Other
Spill Class:	C3
SWIS:	2401
Spill Date:	2002-08-01
Investigator:	JBVOUGHT
Referred To:	Not reported
Reported to Dept:	2002-08-01
CID:	257
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Other
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2002-08-01
Spill Record Last Update:	2003-02-13
Spiller Name:	CURTIS CASEY
Spiller Company:	Not reported
Spiller Address:	161 VARICK AVE
Spiller Company:	001
Contact Name:	CURTIS CASEY
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was VOUGHT 2/13/2003 - Closed Due To The Nature / Extent Of The Spill Report"
Remarks:	"during some diging on site they came across this tank which appears to have been filled with water and some did spill"

All Materials:

Site ID:	164055
Operable Unit ID:	855776
Operable Unit:	01
Material ID:	518871
Material Code:	0060A
Material Name:	wastewater
Case No.:	Not reported
Material FA:	Other
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

NY MANIFEST:

Country:	USA
EPA ID:	NYR000109116
Facility Status:	Not reported
Location Address 1:	161 VARICK AVE

NYC DEPART OF SANITATION (VARICK ST) (Continued) **S106003231**

Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYR000109116
Mailing Name:	NYC DEPART OF SANITATION (VARICK ST)
Mailing Contact:	CURTIS CASEY
Mailing Address 1:	161 VARICK AVE
Mailing Address 2:	Not reported
Mailing City:	BROOKLYN
Mailing State:	NY
Mailing Zip:	11237
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	9175782357

NY MANIFEST:

Document ID:	NYG1887093
Manifest Status:	Not reported
seq:	01
Year:	2003
Trans1 State ID:	AD33406NY
Trans2 State ID:	Not reported
Generator Ship Date:	07/28/2003
Trans1 Recv Date:	07/28/2003
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	07/29/2003
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYR000109116
Trans1 EPA ID:	NYD986969947
Trans2 EPA ID:	Not reported
TSDF ID 1:	NYD049836679
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	B007 - OTHER MISCELLANEOUS PCB WASTES
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported

NYC DEPART OF SANITATION (VARICK ST) (Continued) **S106003231**

Quantity:	29774
Units:	K - Kilograms (2.2 pounds)
Number of Containers:	001
Container Type:	DT - Dump trucks
Handling Method:	L Landfill.
Specific Gravity:	01.00

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

AM263 **NYC DEPT OF SANITATION** **RCRA-CESQG** **1006810235**
NNE **VARICK AVE** **NYR000109116**
1/8-1/4 **BROOKLYN, NY 11237**
0.249 mi.
1316 ft. **Site 3 of 5 in cluster AM**

Relative:
Lower

Actual:
12 ft.

RCRA-CESQG:

Date form received by agency:	01/01/2007
Facility name:	NYC DEPT OF SANITATION
Facility address:	VARICK AVE BROOKLYN, NY 11237
EPA ID:	NYR000109116
Mailing address:	BEAVER ST NEW YORK, NY 10004
Contact:	JOHN S PAWLOWSKI
Contact address:	BEAVER ST NEW YORK, NY 10004
Contact country:	US
Contact telephone:	917-237-5985
Contact email:	UPAWLOWSKI@PACE.EDU
EPA Region:	02
Classification:	Conditionally Exempt Small Quantity Generator
Description:	Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

Owner/Operator Summary:

Owner/operator name:	NEW YORK CITY DEPARTMENT OF SANITATION
Owner/operator address:	BEAVER ST NEW YORK, NY 10004
Owner/operator country:	US
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported

NYC DEPT OF SANITATION (Continued) **1006810235**

Legal status: Municipal
Owner/Operator Type: Owner
Owner/Op start date: 12/31/1980
Owner/Op end date: Not reported

Owner/operator name: CITY OF NY DEPARTMENT OF SANITATION
Owner/operator address: BEAVER ST
NEW YORK, NY 10004
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Municipal
Owner/Operator Type: Operator
Owner/Op start date: 12/31/1980
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2006
Site name: NYC DEPT OF SANITATION
Classification: Small Quantity Generator

Date form received by agency: 06/18/2004
Site name: NYC DEPT OF SANITATION
Classification: Large Quantity Generator

Date form received by agency: 09/12/2002
Site name: NYC DEPT OF SANITATION
Classification: Large Quantity Generator

Hazardous Waste Summary:

. Waste code: B002
. Waste name: Petroleum oil or other liquid containing 50 ppm or greater of PCBs, but less than 500 ppm PCBs. This includes oil from electrical equipment whose PCB concentration is unknown, except for circuit breakers, reclosers and cable.

NYC DEPT OF SANITATION (Continued) **1006810235**

. Waste code: B007
. Waste name: Other PCB wastes, including contaminated soil, solids, sludges, clothing, rags and dredge material.

Violation Status: No violations found

AA264 **CON EDISON** **RCRA NonGen / NLR** **1014396327**
West **328 JOHNSON AVE & WHITE ST** **NJ MANIFEST** **NYP004185880**
1/8-1/4 **BROOKLYN, NY 11206** **NY MANIFEST**
0.249 mi.
1317 ft. **Site 11 of 11 in cluster AA**

Relative:
Lower

Actual:
17 ft.

RCRA NonGen / NLR:
Date form received by agency: 06/01/2016
Facility name: CON EDISON
Facility address: 328 JOHNSON AVE & WHITE ST
BROOKLYN, NY 11206
EPA ID: NYP004185880
Mailing address: 4 IRVING PL, RM 828
NEW YORK, NY 10003
Contact: CAROLINE ISKANDER
Contact address: Not reported
Not reported
Contact country: US
Contact telephone: 718-666-4714
Contact email: Not reported
EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 07/23/2009
Site name: CON EDISON
Classification: Conditionally Exempt Small Quantity Generator

Violation Status: No violations found

NJ MANIFEST:
EPA Id: NYP004185880
Mail Address: 4 IRVING PL, RM 828
Mail City/State/Zip: NEW YORK, NY 10003

CON EDISON (Continued) **1014396327**

Facility Phone:	Not reported
Emergency Phone:	Not reported
Contact:	CAROLINE ISKANDER
Comments:	Not reported
SIC Code:	Not reported
County:	NY047
Municipal:	Not reported
Previous EPA Id:	Not reported
Gen Flag:	Not reported
Trans Flag:	Not reported
TSDF Flag:	Not reported
Name Change:	Not reported
Date Change:	Not reported

Manifest:

Manifest Number:	000894868GBF
EPA ID:	NYP004185880
Date Shipped:	08/06/2009
TSDF EPA ID:	NJD991291105
Transporter EPA ID:	NJD003812047
Transporter 2 EPA ID:	Not reported
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	08/06/2009
Date Trans2 Transported Waste:	Not reported
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	08/10/2009
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	Not reported
Was Load Rejected:	NEW YORK, NY 10003
Reason Load Was Rejected:	Not reported

Waste:

Manifest Year:	Not reported

CON EDISON (Continued) **1014396327**

Waste Code: D008
Hand Code: H111
Quantity: 100 G

NY MANIFEST:
Country: USA
EPA ID: NYP004185880
Facility Status: Not reported
Location Address 1: 328 JOHNSON AVE MH 277
Code: BP
Location Address 2: Not reported
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: Not reported
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYP004185880
Mailing Name: CONSOLIDATED EDISON
Mailing Contact: FRANKLYN MURRAY
Mailing Address 1: 4 IRVING PLACE RM 828
Mailing Address 2: Not reported
Mailing City: NEW YORK
Mailing State: NY
Mailing Zip: 10003
Mailing Zip 4: Not reported
Mailing Country: USA
Mailing Phone: 2124602808

NY MANIFEST:
Document ID: Not reported
Manifest Status: Not reported
seq: Not reported
Year: 2009
Trans1 State ID: NJD003812047
Trans2 State ID: Not reported
Generator Ship Date: 08/06/2009
Trans1 Recv Date: 08/06/2009
Trans2 Recv Date: Not reported
TSD Site Recv Date: 08/10/2009
Part A Recv Date: Not reported
Part B Recv Date: Not reported
Generator EPA ID: NYP004185880
Trans1 EPA ID: Not reported
Trans2 EPA ID: Not reported
TSDF ID 1: NJD991291105
TSDF ID 2: Not reported
Manifest Tracking Number: 000894868GBF
Import Indicator: N
Export Indicator: N
Discr Quantity Indicator: N
Discr Type Indicator: N
Discr Residue Indicator: N

CON EDISON (Continued) **1014396327**

Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H111
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	100.0
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1.0
Container Type:	TT - Cargo tank, tank trucks
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	1.0
Waste Code:	D008
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

AF265 **FORMER UNIVERSAL SCRAP METAL PROCESSORS CORP.** **NY BROWNFIELDS S117394468**
ESE **1181 FLUSHING AVENUE** **NY Spills N/A**
1/4-1/2 **BROOKLYN, NY 11237**
0.251 mi.
1325 ft. **Site 4 of 4 in cluster AF**

Relative: **Lower**
Actual: **18 ft.**

BROWNFIELDS:

Name:	FORMER UNIVERSAL SCRAP METAL PROCESSORS CORP.
Address:	1181 FLUSHING AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Program:	BCP
Site Code:	505316
Acres:	0.502
HW Code:	C224210
SWIS:	2401
Town:	New York City
Record Added Date:	03/10/2015
Record Updated Date:	01/08/2019
Update By:	GWBURKE
Site Description:	Location: The Former Universal Scrap Metal Processors Corp. site is located in an urban area in the East Williamsburg neighborhood of Brooklyn, Kings County. The irregularly-shaped site has approximately 109 feet of street frontage on Flushing Avenue and 203 feet of street frontage on Stewart Avenue. Site Features: The property was partially developed with a 1-story 4,500 square foot commercial building which was constructed in 1931, but demolished in 2016. The site is currently vacant, surrounded by a fence and unpaved. Current Zoning and Land Use: The site is located in a M1-2 zone which allows nearly all industrial type uses. Additional uses are allowed, including

FORMER UNIVERSAL SCRAP METAL PROCESSORS CORP. (Continued) **S117394468**

office, hotel, and retail. M1 districts are often buffers between M2 or M3 districts and adjacent residential or commercial districts. The scrap metal operation which previously occupied the building and property no longer operates. Past Use of the Site: The entire property was used as a railroad freight yard from sometime between 1888 and 1907 to sometime between 1951 and 1965. The south end of the site was utilized as a filling station from approximately 1955 until at least 2003. The southern portion of the site and the building were used for auto repair from 1955 until 2007. The northern portion of the property was used as an auto scrap yard from 1981 through 2007. From 2007 through 2014 the property was used as a scrap metal facility. In January 2006, under Spill #0510000, eleven (11) 550-gallon gasoline underground storage tanks (USTs) and 240 tons of petroleum-impacted soil were removed, and a chemical oxidant was applied to treat groundwater. Site Geology and Hydrogeology: Soil at the site is described as historic fill to a depth of approximately 4 feet below the surface followed by native brown fine sand with silt. The bedrock in this area of Brooklyn is an igneous intrusive classified as the Ravenswood grano-diorite of middle Ordovician to middle Cambrian age. Bedrock was not encountered during the remedial investigation, but is anticipated to reside at depths greater than 100 feet below grade. Unconsolidated sediments overlie the bedrock and consist of Pleistocene aged sand, gravel and silty clays, deposited by glacial-fluvial activity. Non-native fill materials consisting of dredge spoils, rubble and/or other materials have historically been used to reinforce and extend shoreline areas and to raise and improve the drainage of low lying areas. Depth to groundwater at the site is approximately 12 feet below grade and flows to the north/ northeast, toward the English Kills Channel. Groundwater flow is also highly variable as it may be influenced by the subway tunnel which runs underground north of the site.

Env Problem:

Site soils and groundwater have been analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, pesticides and poly chlorinated biphenyls (PCBs). Soil vapor has been analyzed for VOCs. Soil: Several VOCs have been detected in site soils, primarily petroleum constituents including 1,2,4-trimethylbenzene at concentrations up to 910 parts per million (ppm) (Unrestricted Use Soil Cleanup Objective (UUSCO) is 3.6 ppm), 1,3,5-trimethylbenzene up to 320 ppm (UUSCO is 8.4), benzene up to 1.9 ppm (UUSCO is 0.06 ppm), ethylbenzene up to 190 ppm (UUSCO is 1 ppm), n-propylbenzene up to 140 ppm (UUSCO is 3.9 ppm), n-butylbenzene up to 70 ppm (UUSCO is 12 ppm), sec-butylbenzene up to 23 ppm (UUSCO is 11 ppm), m-p-xylenes up to 720 ppm (UUSCO is 0.26 ppm), o-xylene up to 260 ppm (UUSCO is 0.26 ppm), toluene up to 20 ppm (UUSCO is 0.7 ppm), and naphthalene up to 17 ppm (UUSCO is 12 ppm). Chlorinated volatile organic compounds (CVOCs) were detected at two locations, including tetrachloroethene at concentrations up to 22 ppm (UUSCO is 1.3 ppm), cis-1,2-dichloroethene up to 27 ppm (UUSCO is 0.25 ppm), trans-1,2-dichloroethene up to 2.3 ppm (UUSCO is 0.19), and vinyl chloride up to 3 ppm (UUSCO is 0.02 ppm). Several Polycyclic aromatic hydrocarbons (PAHs) were also detected in shallow subsurface soils, including benzo(a)anthracene at concentrations up to 1.5 ppm (UUSCO is 1 ppm), benzo(a)pyrene up to 1.1 ppm (UUSCO is 1 ppm), indeno(1,2,3-cd)pyrene up to 0.72 ppm (UUSCO is 0.5 ppm), benzo(b)fluoranthene up to 1.1 ppm (UUSCO is 1 ppm), benzo(k)fluoranthene up to 0.9 ppm (UUSCO is 0.8 ppm), and chrysene up to 1.6 ppm (UUSCO is 1 ppm). Metals, including mercury were

FORMER UNIVERSAL SCRAP METAL PROCESSORS CORP. (Continued) **S117394468**

detected at concentrations up to 1.57 ppm (UUSCO is 0.18 ppm), barium up to 446 ppm (UUSCO is 350 ppm), cadmium up to 7.67 ppm (UUSCO is 2.5 ppm), copper up to 266 ppm (UUSCO is 50 ppm), lead up to 754 ppm (UUSCO is 63 ppm), and zinc up to 1,100 ppm (UUSCO is 109 ppm). Groundwater: Several petroleum-related VOCs were detected in site groundwater including 1,2,4-trimethylbenzene up to 1,400 parts per billion (ppb) (NYSDEC groundwater quality standard is 5 ppb), 1,3,5-trimethylbenzene up to 400 ppb (standard is 5 ppb), benzene up to 380 ppb (standard is 1 ppb), ethylbenzene up to 940 ppb (standard is 5 ppb), isopropylbenzene up to 79 ppb (standard is 5 ppb), m-p-xylenes up to 3,700 ppb (standard is 5 ppb), methyl ethyl ketone up to 780 ppb (standard is 50 ppb), MTBE up to 66 ppb (standard is 10 ppb), naphthalene up to 250 ppb (standard is 10 ppb), n-butylbenzene up to 20 ppb (standard is 5 ppb), sec-butylbenzene up to 13 ppb (standard is 5 ppb), n-propylbenzene up to 200 ppb (standard is 5 ppb), o-xylene up to 1,500 ppb (standard is 5 ppb), and toluene up to 1,100 ppb (standard is 5 ppb). Minor detections of CVOCs were also found, including tetrachloroethene at concentrations up to 8.1 ppb (standard is 5 ppb), and trichloroethene up to 7.4 ppb (standard is 5 ppb). Metals were also detected in site groundwater, including lead at concentrations up to 59 ppb (standard is 25 ppb), barium up to 1,330 ppb (standard is 1,000 ppb), cadmium up to 18 ppb (standard is 5 ppb), magnesium up to 95,100 ppb (standard is 35,000 ppb), manganese up to 44,800 ppb (standard is 300 ppb), sodium up to 343,000 ppb (standard is 20,000 ppb), and iron up to 868,000 ppb (standard is 300 ppb). The manganese, magnesium, and sodium is believed to be naturally-occurring. PCB-1016 was also detected at 0.16 ppb (standard is 0.09 ppb). Soil Vapor: In soil gas, several CVOCs were detected, including tetrachloroethene up to 34.3 micrograms per cubic meter (ug/m^3), trichloroethene up to 11.3 ug/m^3, cis-1,2-dichloroethene up to 109 ug/m^3, and vinyl chloride up to 2,530 ug/m^3. Benzene was detected up to 1,140 ug/m^3.

Health Problem: The site is completely fenced, which restricts public access. However, persons who enter the site could contact contaminants in the soil by walking on the site, digging or otherwise disturbing the soil. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater and soil may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site redevelopment and occupancy. Additional evaluation is needed to determine whether actions are needed to address soil vapor intrusion off-site.

Dump: False
Structure: False
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported
Record Add: 2015-03-16 10:58:00

FORMER UNIVERSAL SCRAP METAL PROCESSORS CORP. (Continued) **S117394468**

Record Upd:	2017-08-09 12:32:00
Updated By:	KMFORSTE
Own Op:	Applicant/Requestor
Sub Type:	P03
Owner Name:	Yoel Schwimmer
Owner Company:	Flushing Stewart LLC
Owner Address:	12 Spencer Street
Owner Addr2:	2nd Floor
Owner City,St,Zip:	Brooklyn, NY 11205
Owner Country:	United States of America
Own Op:	Owner
Sub Type:	E
Owner Name:	Not reported
Owner Company:	1175 Flushing Avenue Associates, LLC
Owner Address:	1175 Flushing Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11237
Owner Country:	United States of America
Own Op:	Document Repository
Sub Type:	NNN
Owner Name:	Not reported
Owner Company:	Brooklyn Public Library- Bushwick Branch
Owner Address:	340 Bushwick Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11206
Owner Country:	United States of America
Own Op:	On-Site Operator
Sub Type:	E
Owner Name:	Not reported
Owner Company:	Universal Scrap Metal Processors Corp.
Owner Address:	27 Stewart Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11237
Owner Country:	United States of America
Own Op:	Applicant/Requestor
Sub Type:	P03
Owner Name:	Abe Wurzberger
Owner Company:	Flushing Stewart LLC
Owner Address:	Not reported
Owner Addr2:	Not reported
Owner City,St,Zip:	NY
Owner Country:	United States of America
Own Op:	Document Repository
Sub Type:	NNN
Owner Name:	Not reported
Owner Company:	Brooklyn Community Board 4
Owner Address:	1420 Bushwick Ave
Owner Addr2:	Rm 370
Owner City,St,Zip:	Brooklyn, NY 11237
Owner Country:	United States of America
Own Op:	Document Repository
Sub Type:	NNN
Owner Name:	Not reported
Owner Company:	Brooklyn Community Board 1
Owner Address:	435 Graham Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11211

FORMER UNIVERSAL SCRAP METAL PROCESSORS CORP. (Continued) **S117394468**

Owner Country:	United States of America
HW Code:	C224210
Waste Type:	BENZO[K]FLUORANTHENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	N-PROPYLBENZENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	1,3,5-Trimethylbenzene
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	BENZO(A)ANTHRACENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	BENZO(B)FLUORANTHENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	METHYL ETHYL KETONE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	Butylbenzene
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	TOLUENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	TOLUENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	Isopropylbenzene
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	METHYL-TERT-BUTYL ETHER (MTBE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	Chrysene
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	1,2,4-TRIMETHYLBENZENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	1,2,4-TRIMETHYLBENZENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported

FORMER UNIVERSAL SCRAP METAL PROCESSORS CORP. (Continued) **S117394468**

HW Code:	C224210
Waste Type:	LEAD
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	NAPHTHALENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	ZINC
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	XYLENE (MIXED)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	XYLENE (MIXED)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	indeno(1,2,3-cd)pyrene
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	MERCURY
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	ETHYLBENZENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	ETHYLBENZENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	BENZO(A)PYRENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	METHYLENE CHLORIDE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	COPPER
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	1,2-DICHLOROETHANE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	BENZENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210

FORMER UNIVERSAL SCRAP METAL PROCESSORS CORP. (Continued) **S117394468**

Waste Type:	BENZENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	barium
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	sec-butylbenzene
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	cis-1,2-dichloroethene
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	trans-1,2-dichloroethene
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	vinyl chloride
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	tetrachloroethene (PCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	trichloroethene (TCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224210
Waste Type:	cadmium
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
Crossref ID:	1305242
Cross Ref Type Code:	01
Cross Ref Type:	Spill No.
Record Added Date:	2015-04-30 10:05:00
Record Updated:	2015-04-30 10:05:00
Updated By:	KMFORSTE
Crossref ID:	0510000
Cross Ref Type Code:	01
Cross Ref Type:	Spill No.
Record Added Date:	2015-04-30 10:06:00
Record Updated:	2015-04-30 10:06:00
Updated By:	KMFORSTE

SPILLS:

Name:	COMMERCIAL PROPERTY
Address:	1181 FLUSHING AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	1410058 / Not Reported
Facility ID:	1410058
Facility Type:	ER
DER Facility ID:	458645
Site ID:	503722

FORMER UNIVERSAL SCRAP METAL PROCESSORS CORP. (Continued) **S117394468**

DEC Region:	2
Spill Cause:	Other
Spill Class:	Not reported
SWIS:	2401
Spill Date:	2015-01-14
Investigator:	AXDORONO
Referred To:	BROWNFIELD PROGRAM. PM IN ALBANY
Reported to Dept:	2015-01-14
CID:	Not reported
Water Affected:	Not reported
Spill Source:	Gasoline Station or other PBS Facility
Spill Notifier:	Other
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	1
Date Entered In Computer:	2015-01-14
Spill Record Last Update:	2017-06-29
Spiller Name:	Not reported
Spiller Company:	COMMERCIAL PROPERTY
Spiller Address:	Not reported
Spiller Company:	999
Contact Name:	CHARLIE SOSIK
DEC Memo:	"1/14/2015 - Feng - Duty Desk. Left call back information to the receptionist at EBC (631-504-6000) and asked Charles Sosik to call back. 3/30/2016 Feng This spill is transferred from J. Feng to V. Brevdo as per J. Vought. 03/31/2016: This spill case was transferred to A. Doronova. - AD 05/20/2016: called and left a message for Mr. Sosik with the receptionist. AD 09/20/2016: Called and left a message to Mr. Sosik with the receptionist. AD 09/29/2016: Looked for the owner information on the Internet. Found records saying that Riverside Developers USA is the property owner. called and spoke with the receptionist. Her name is Rachel Mittelman. She informed me that they are longer involved with this property. She will find out the new owner info. AD 09/30/2016: Received a phone call from Joe Greenfeld. He was referred by Ms. Mittelman. He is representative of the new owner of the site. The company name is All Year Management. Phone numbers: (718)623-9430, ext.111, 110,989; (917)-470-3650. He said that they will retain Mr. Sosik's company to deal with this spill. He will gather more info and get back. AD 01/19/2017: Called and left a message for Mr. Greenfeld regarding update info. Later in the day received a call from Mr. Greenfeld. He said that they still work with Mr. Sosik on the site remediation, and that a work plan will be submitted to DEC shortly. AD 06/29/2017: Called and spoke with Charlie Sosik. He informed me that this site is in Brownfield Program and is managed by Albany. He will sent an e-mail with info. AD"
Remarks:	"contamination based on sample results"

All Materials:

Site ID:	503722
Operable Unit ID:	1253072
Operable Unit:	01
Material ID:	2255271
Material Code:	0066A
Material Name:	unknown petroleum

FORMER UNIVERSAL SCRAP METAL PROCESSORS CORP. (Continued) **S117394468**

Case No.:	Not reported
Material FA:	Petroleum
Quantity:	Not reported
Units:	G
Recovered:	Not reported
Oxygenate:	Not reported

AI266 **NEO-RAY PRODUCTIONS INC** **RCRA-CESQG** **1000139537**
ENE **537 JOHNSON AVE** **NY LTANKS** **NYD001502509**
1/4-1/2 **BROOKLYN, NY 11237** **NY UST**
0.252 mi. **ICIS**
1328 ft. **Site 2 of 2 in cluster AI** **US AIRS**
FINDS
Relative: **ECHO**
Lower **NY MANIFEST**

Actual:
14 ft.

RCRA-CESQG:

Date form received by agency:	01/01/2007
Facility name:	NEO-RAY PRODUCTIONS INC
Facility address:	537 JOHNSON AVE BROOKLYN, NY 11237
EPA ID:	NYD001502509
Mailing address:	JOHNSON AVE BROOKLYN, NY 11237
Contact:	BOB BLUMEN
Contact address:	JOHNSON AVE BROOKLYN, NY 11237
Contact country:	US
Contact telephone:	718-456-7400
Contact email:	Not reported
EPA Region:	02
Land type:	Facility is not located on Indian land. Additional information is not known.
Classification:	Conditionally Exempt Small Quantity Generator
Description:	Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

Owner/Operator Summary:

Owner/operator name:	CORPORATION NEO-RAY PRODUCTIONS
Owner/operator address:	NOT REQUIRED NOT REQUIRED, WY 99999
Owner/operator country:	US
Owner/operator telephone:	212-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported

NEO-RAY PRODUCTIONS INC (Continued) **1000139537**

Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 01/01/2001
Owner/Op end date: Not reported

Owner/operator name: CORPORATION NEO-RAY PRODUCTIONS
Owner/operator address: NOT REQUIRED
NOT REQUIRED, WY 99999
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 01/01/2001
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2006
Site name: NEO-RAY PRODUCTIONS INC
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 07/22/2005
Site name: NEO-RAY PRODUCTIONS INC
Classification: Not a generator, verified

Date form received by agency: 01/01/2001
Site name: NEO-RAY LIGHTING
Classification: Large Quantity Generator

Date form received by agency: 08/11/2000
Site name: NEO-RAY PRODUCTIONS INC
Classification: Large Quantity Generator

Date form received by agency: 07/14/1999
Site name: NEO-RAY PRODUCTIONS INC
Classification: Small Quantity Generator

NEO-RAY PRODUCTIONS INC (Continued) **1000139537**

Hazardous Waste Summary:

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Facility Has Received Notices of Violations:
Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 10/24/1990
Date achieved compliance: 02/08/1991
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/30/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 09/06/2007
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/07/2003
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 10/24/1990
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 02/08/1991
Evaluation lead agency: State

LTANKS:
Name: 537 JOHNSON AV
Address: 537 JOHNSON AVE
City,State,Zip: BROOKLYN, NY
Spill Number/Closed Date: 8806105 / 1992-10-07
Facility ID: 8806105
Site ID: 155588
Spill Date: 1988-10-19

NEO-RAY PRODUCTIONS INC (Continued) **1000139537**

Spill Cause:	Tank Test Failure
Spill Source:	Commercial/Industrial
Spill Class:	C4
Cleanup Ceased:	1992-10-07
SWIS:	2401
Investigator:	BATTISTA
Referred To:	Not reported
Reported to Dept:	1988-10-19
CID:	Not reported
Water Affected:	Not reported
Spill Notifier:	Tank Tester
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	1988-10-31
Spill Record Last Update:	2003-10-08
Spiller Name:	Not reported
Spiller Company:	NEO RAY LIGHTING
Spiller Address:	Not reported
Spiller County:	001
Spiller Contact:	Not reported
Spiller Phone:	Not reported
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	131784
DEC Memo:	""
Remarks:	"2K TK SYSTEM FAILED PETRO-TITE, L R = -1.284 GPH."

All TTF:

Facility ID:	8806105
Spill Number:	8806105
Spill Tank Test:	1534783
Site ID:	155588
Tank Number:	Not reported
Tank Size:	0
Material:	0001
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	00
Test Method 2:	Unknown
Leak Rate:	.00
Gross Fail:	Not reported
Modified By:	Spills
Last Modified Date:	Not reported

All Materials:

Site ID:	155588
Operable Unit ID:	922935
Operable Unit:	01
Material ID:	454460
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported

NEO-RAY PRODUCTIONS INC (Continued) **1000139537**

Material FA:	Petroleum
Quantity:	-1.00
Units:	L
Recovered:	.00
Oxygenate:	Not reported

UST:

Name:	NEO-RAY PRODUCTS INC
Address:	537 JOHNSON AVE
City,State,Zip:	BROOKLYN, NY 11237
Id/Status:	2-085308 / Unregulated/Closed
Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	N/A
UTM X:	590763.98543
UTM Y:	4507003.18617
Site Type:	Other

Affiliation Records:

Site Id:	2037
Affiliation Type:	Facility Owner
Company Name:	MITCHELL CONN
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	537 JOHNSON AVENUE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(718) 456-7400
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	2037
Affiliation Type:	Mail Contact
Company Name:	NEO-DAY PRODUCTS
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	537 JOHNSON AVENUE
Address2:	537 JOHNSON AVENUE
City:	BROOKLYN
State:	NY
Zip Code:	11237
Country Code:	001
Phone:	(718) 456-7400
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	2037
Affiliation Type:	Facility Operator

NEO-RAY PRODUCTIONS INC (Continued) **1000139537**

Company Name:	NEO-RAY PRODUCTS INC
Contact Type:	Not reported
Contact Name:	NEO-RAY PRODUCTS INC
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 456-7400
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	2037
Affiliation Type:	Emergency Contact
Company Name:	MITCHELL CONN
Contact Type:	Not reported
Contact Name:	ANGELO ROSARIO
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 456-7400
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	00A
Tank ID:	3297
Tank Status:	Closed - In Place
Material Name:	Closed - In Place
Capacity Gallons:	2000
Install Date:	Not reported
Date Tank Closed:	04/01/1999
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)

Tightness Test Method:	03
Date Test:	06/01/1998
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
B00 - Tank External Protection - None

NEO-RAY PRODUCTIONS INC (Continued) **1000139537**

C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
I04 - Overfill - Product Level Gauge (A/G)
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Number:	00B
Tank ID:	3298
Tank Status:	Closed Prior to Micro Conversion, 03/91
Material Name:	Closed Prior to Micro Conversion, 03/91
Capacity Gallons:	2000
Install Date:	Not reported
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)
Tightness Test Method:	ZZ
Date Test:	03/01/1999
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
I04 - Overfill - Product Level Gauge (A/G)
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Number:	00C
Tank ID:	3299
Tank Status:	Tank Converted to Non-Regulated Use
Material Name:	Tank Converted to Non-Regulated Use
Capacity Gallons:	1080
Install Date:	Not reported
Date Tank Closed:	08/01/1996
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0001
Common Name of Substance:	#2 Fuel Oil (On-Site Consumption)
Tightness Test Method:	03
Date Test:	03/01/1999
Next Test Date:	Not reported
Pipe Model:	Not reported

NEO-RAY PRODUCTIONS INC (Continued) **1000139537**

Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
H00 - Tank Leak Detection - None
I04 - Overfill - Product Level Gauge (A/G)
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

Tank Number: 00D
Tank ID: 3300
Tank Status: Closed - In Place
Material Name: Closed - In Place
Capacity Gallons: 1750
Install Date: Not reported
Date Tank Closed: 04/01/1999
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0001
Common Name of Substance: #2 Fuel Oil (On-Site Consumption)

Tightness Test Method: 03
Date Test: 03/01/1999
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
H00 - Tank Leak Detection - None
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
I04 - Overfill - Product Level Gauge (A/G)
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

ICIS:
Enforcement Action ID: NY000A0000261040002300006
FRS ID: 110012589822
Action Name: ATLITE INC 360470081400006
Facility Name: ATLITE INC
Facility Address: 537 JOHNSON AVE
BROOKLYN, NY 11237
Enforcement Action Type: Administrative Order
Facility County: KINGS
Program System Acronym: AIR
Enforcement Action Forum Desc: Administrative - Formal
EA Type Code: SCAAAO

NEO-RAY PRODUCTIONS INC (Continued) **1000139537**

Facility SIC Code:	3471
Federal Facility ID:	Not reported
Latitude in Decimal Degrees:	40.70893
Longitude in Decimal Degrees:	-73.925
Permit Type Desc:	Not reported
Program System Acronym:	NY0000002610400023
Facility NAICS Code:	332813
Tribal Land Code:	Not reported
Enforcement Action ID:	NY000A0000261040002300004
FRS ID:	110012589822
Action Name:	ATLITE INC 360470081400004
Facility Name:	ATLITE INC
Facility Address:	537 JOHNSON AVE BROOKLYN, NY 11237
Enforcement Action Type:	Administrative Order
Facility County:	KINGS
Program System Acronym:	AIR
Enforcement Action Forum Desc:	Administrative - Formal
EA Type Code:	SCAAAO
Facility SIC Code:	3471
Federal Facility ID:	Not reported
Latitude in Decimal Degrees:	40.70893
Longitude in Decimal Degrees:	-73.925
Permit Type Desc:	Not reported
Program System Acronym:	NY0000002610400023
Facility NAICS Code:	332813
Tribal Land Code:	Not reported
Enforcement Action ID:	HQ-100018946
FRS ID:	110012589822
Action Name:	Neo-Ray Products Inc.
Facility Name:	NEO RAY LIGHTING PRODUCTS
Facility Address:	537 JOHNSON AVENUE BROOKLYN, NY 11237
Enforcement Action Type:	Notice of Noncompliance Issued
Facility County:	KINGS
Program System Acronym:	ICIS
Enforcement Action Forum Desc:	Administrative - Informal
EA Type Code:	NONC
Facility SIC Code:	3646
Federal Facility ID:	Not reported
Latitude in Decimal Degrees:	40.708807
Longitude in Decimal Degrees:	-73.925748
Permit Type Desc:	Not reported
Program System Acronym:	23483
Facility NAICS Code:	Not reported
Tribal Land Code:	Not reported
Enforcement Action ID:	02-1988-0136
FRS ID:	110012589822
Action Name:	NEO-RAY LIGHTING SYSTEMS INC
Facility Name:	NEO RAY LIGHTING PRODUCTS
Facility Address:	537 JOHNSON AVENUE BROOKLYN, NY 11237
Enforcement Action Type:	CAA 113 Notice Of Violation
Facility County:	KINGS

NEO-RAY PRODUCTIONS INC (Continued) **1000139537**

Program System Acronym: ICIS
Enforcement Action Forum Desc: Administrative - Formal
EA Type Code: 113
Facility SIC Code: 3646
Federal Facility ID: Not reported
Latitude in Decimal Degrees: 40.708807
Longitude in Decimal Degrees: -73.925748
Permit Type Desc: Not reported
Program System Acronym: 23483
Facility NAICS Code: Not reported
Tribal Land Code: Not reported

Enforcement Action ID: 02-000F000360470081400002
FRS ID: 110012589822
Action Name: ATLITE INC 360470081400002
Facility Name: ATLITE INC
Facility Address: 537 JOHNSON AVE
BROOKLYN, NY 11237
Enforcement Action Type: Notice of Violation
Facility County: KINGS
Program System Acronym: AIR
Enforcement Action Forum Desc: Administrative - Informal
EA Type Code: NOV
Facility SIC Code: 3471
Federal Facility ID: Not reported
Latitude in Decimal Degrees: 40.70893
Longitude in Decimal Degrees: -73.925
Permit Type Desc: Not reported
Program System Acronym: NY0000002610400023
Facility NAICS Code: 332813
Tribal Land Code: Not reported

Facility Name: NEO-RAY PRODUCTS INC
Address: 537 JOHNSON AVE
Tribal Indicator: N
Fed Facility: No
NAIC Code: Not reported
SIC Code: 3646

Facility Name: NEO-RAY PRODUCTS INC
Address: 537 JOHNSON AVE
Tribal Indicator: N
Fed Facility: No
NAIC Code: Not reported
SIC Code: 3646

Facility Name: NEO-RAY PRODUCTS INC
Address: 537 JOHNSON AVE
Tribal Indicator: N
Fed Facility: No
NAIC Code: Not reported
SIC Code: 3646

Facility Name: NEO-RAY PRODUCTS INC
Address: 537 JOHNSON AVE
Tribal Indicator: N

NEO-RAY PRODUCTIONS INC (Continued) **1000139537**

Fed Facility: No
NAIC Code: Not reported
SIC Code: 3646

Facility Name: NEO-RAY PRODUCTS INC
Address: 537 JOHNSON AVE
Tribal Indicator: N
Fed Facility: No
NAIC Code: Not reported
SIC Code: 3646

US AIRS (AFS):
Envid: 1000139537
Region Code: 02
County Code: NY047
Programmatic ID: AIR NY0000002610400023
Facility Registry ID: 110012589822
D and B Number: Not reported
Facility Site Name: ATLITE INC
Primary SIC Code: 3471
NAICS Code: 332813
Default Air Classification Code: SMI
Facility Type of Ownership Code: POF
Air CMS Category Code: Not reported
HPV Status: Not reported

US AIRS (AFS):
Region Code: 02
Programmatic ID: AIR NY0000002610400023
Facility Registry ID: 110012589822
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1985-06-10 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610400023
Facility Registry ID: 110012589822
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1985-08-01 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610400023
Facility Registry ID: 110012589822
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards

NEO-RAY PRODUCTIONS INC (Continued) **1000139537**

Activity Date: 1987-03-02 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610400023
Facility Registry ID: 110012589822
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1987-12-01 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610400023
Facility Registry ID: 110012589822
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1988-05-13 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610400023
Facility Registry ID: 110012589822
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1989-05-16 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610400023
Facility Registry ID: 110012589822
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1991-06-13 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610400023
Facility Registry ID: 110012589822

NEO-RAY PRODUCTIONS INC (Continued) **1000139537**

Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1992-01-22 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610400023
Facility Registry ID: 110012589822
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1992-12-09 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610400023
Facility Registry ID: 110012589822
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1985-08-15 00:00:00
Activity Status Date: 1985-08-15 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Formal
Activity Status: Final Order Issued

Region Code: 02
Programmatic ID: AIR NY0000002610400023
Facility Registry ID: 110012589822
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1985-09-04 00:00:00
Activity Status Date: 1985-09-04 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Formal
Activity Status: Final Order Issued

Region Code: 02
Programmatic ID: AIR NY0000002610400023
Facility Registry ID: 110012589822
Air Operating Status Code: OPR
Default Air Classification Code: SMI
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 1985-07-22 00:00:00
Activity Status Date: 1985-07-22 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Informal
Activity Status: Achieved

NEO-RAY PRODUCTIONS INC (Continued) **1000139537**

FINDS:

Registry ID: 110012589822

Environmental Interest/Information System

NCDB (National Compliance Data Base) supports implementation of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA). The system tracks inspections in regions and states with cooperative agreements, enforcement actions, and settlements.

AFS (Aerometric Information Retrieval System (AIRS) Facility Subsystem) replaces the former Compliance Data System (CDS), the National Emission Data System (NEDS), and the Storage and Retrieval of Aerometric Data (SAROAD). AIRS is the national repository for information concerning airborne pollution in the United States. AFS is used to track emissions and compliance data from industrial plants. AFS data are utilized by states to prepare State Implementation Plans to comply with regulatory programs and by EPA as an input for the estimation of total national emissions. AFS is undergoing a major redesign to support facility operating permits required under Title V of the Clean Air Act.

AIR SYNTHETIC MINOR

US EPA TRIS (Toxics Release Inventory System) contains information from facilities on the amounts of over 300 listed toxic chemicals that these facilities release directly to air, water, land, or that are transported off-site.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

FIS (New York - Facility Information System) is New York's Department of Environmental Conservation (DEC) information system for tracking environmental facility information found across the State.

ICIS (Integrated Compliance Information System) is the Integrated Compliance Information System and provides a database that, when complete, will contain integrated Enforcement and Compliance information across most of EPA's programs. The vision for ICIS is to replace EPA's independent databases that contain Enforcement data with a single repository for that information. Currently, ICIS contains all Federal Administrative and Judicial enforcement actions. This information is maintained in ICIS by EPA in the Regional offices and it Headquarters. A future release of ICIS will replace the Permit Compliance System (PCS) which supports the NPDES and will integrate that information with Federal actions already in the system. ICIS also has the capability to track other activities occurring in the Region that support Compliance and Enforcement programs. These include; Incident Tracking, Compliance Assistance, and Compliance Monitoring.

NEO-RAY PRODUCTIONS INC (Continued) **1000139537**

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000139537
Registry ID:	110012589822
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110012589822

NY MANIFEST:

Country:	USA
EPA ID:	NYD001502509
Facility Status:	Not reported
Location Address 1:	537 JOHNSON AVENUE
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	RIDGEWOOD
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYD001502509
Mailing Name:	NEO RAY
Mailing Contact:	NEO RAY
Mailing Address 1:	100 ANDREWS RD
Mailing Address 2:	Not reported
Mailing City:	SCHENECTADY
Mailing State:	NY
Mailing Zip:	12307
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	7184567400

NY MANIFEST:

Document ID:	MIA9705481
Manifest Status:	Not reported
seq:	Not reported
Year:	2004
Trans1 State ID:	AD67829NY
Trans2 State ID:	Not reported
Generator Ship Date:	03/30/2004
Trans1 Recv Date:	03/30/2004
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	04/13/2004
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYD001502509
Trans1 EPA ID:	NYD049178296
Trans2 EPA ID:	Not reported
TSDF ID 1:	MID060975
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported

NEO-RAY PRODUCTIONS INC (Continued) **1000139537**

Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	D001 - NON-LISTED IGNITABLE WASTES
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	00030
Units:	P - Pounds
Number of Containers:	001
Container Type:	DF - Fiberboard or plastic drums (glass)
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	01.00
Waste Code:	D001 - NON-LISTED IGNITABLE WASTES
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	00055
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	001
Container Type:	DM - Metal drums, barrels
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	01.00
Waste Code:	D001 - NON-LISTED IGNITABLE WASTES
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	00010
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	002
Container Type:	DM - Metal drums, barrels
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	01.00
Waste Code:	D001 - NON-LISTED IGNITABLE WASTES
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	00190
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	004
Container Type:	DM - Metal drums, barrels
Handling Method:	T Chemical, physical, or biological treatment.
Specific Gravity:	01.00

NEO-RAY PRODUCTIONS INC (Continued) **1000139537**

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

267
NNE
1/4-1/2
0.253 mi.
1338 ft.

HI TECH HOLDINGS LLC D/B/A SCHOLES STREET RECYCLIN **NY SWRCY** **S116357461**
492 SCHOLES STREET **N/A**
BROOKLYN, NY 11237

Relative:
Lower

Actual:
13 ft.

SWRCY:

Region:	2
Facility Address 2:	Not reported
Phone Number:	7183865750
Owner Type:	Private
Owner Name:	Hi Tech Holdings LLC
Owner Address:	130 Varick Ave
Owner Address 2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11237
Owner Email:	Not reported
Owner Phone:	7183865750
Contact Name:	Vincent C. Zambrotta
Contact Address:	Not reported
Contact Address 2:	Not reported
Contact City,St,Zip:	Not reported
Contact Email:	vinnyz@mrtcarting.com
Contact Phone:	7183865750
Activity Desc:	z Retired - RHRF - registration
Activity Number:	[24MF9]
Active:	Yes
East Coordinate:	590578
North Coordinate:	4507234
Accuracy Code:	Not reported
Regulatory Status:	Registration
Permit #:	24MF9
Auth. Date:	Not reported
Expiration Date:	Not reported
Waste Types:	Paper/Cardboard;Source Separated Recyclables (Metal/Glass/Paper/Plastic);Commingled Paper;Metals (Ferrous);Metals (Non-Ferrous);Plastics
Operator Name:	Vincent Zambrotta
Operator Type:	Private
Last Date:	2016-10-26 00:00:00

AM268
NNE
1/4-1/2
0.254 mi.
1339 ft.

VARICK AVENUE **NY SHWS** **S105973022**
165 VARICK AVENUE **N/A**
BROOKLYN, NY 10013

Site 4 of 5 in cluster AM

Relative:
Lower

Actual:
12 ft.

SHWS:

Name:	VARICK AVENUE
Address:	165 VARICK AVENUE
City,State,Zip:	BROOKLYN, NY 10013
Program:	HW
Site Code:	55914
Classification:	N

VARICK AVENUE (Continued) **S105973022**

Region: 2
Acres: 3.54
HW Code: 224017
Record Add: 11/18/1999
Record Upd: 04/03/2007
Updated By: KALEWAND
Site Description: This property is located in Brooklyn (Block #2962 - lots 1, 5, & 37), and is owned by Rhino Trust (Albert Realty Co.). The site is a vacant lot, except for two, one-story shed buildings in a state of disrepair. The site has a develop- ment history dating back to the early 1900's; site uses have included an asphalt paving company and a lumber company. As a result of an environmental survey of this site conducted in 1988 and 1989, traces of 4-chloroaniline, pentachlorophenol, butyl-ben zylpthalate; di-N-butylphthalate and flouranthene were found. Metals and total petroleum hydrocarbons were also found in the soils, surface and groundwater. Contamination of soils by metals was found to include: silver, barium, cadmium, chromium , iron, lead and copper. Concentrations of metals in the groundwater exceeded groundwater quality standards for lead and iron. Rhino Trust has carried out a supplemental site assessment under a consent order in the summer of 1992. An interpretation of the analytical results from the previous investigation has been inconclusive due to data gaps in the reports. Rhino Trust performed a Supplemental Site Assessment, and the fieldwork was completed in 1994. The PRP has removed the contaminated soils. Hazardous waste is no longer present and significant threat no longer exists.
Env Problem: Contaminated soils have been removed but groundwater contamination evidently due to construction and demolition debris (non-hazardous), still exists.
Health Problem: Not reported
Dump: Not reported
Structure: Not reported
Lagoon: Not reported
Landfill: Not reported
Pond: Not reported
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported
Record Add: Not reported
Record Upd: Not reported
Updated By: Not reported
Own Op: Disp. Owner
Sub Type: NNN
Owner Name: Not reported
Owner Company: MULTIPLE OWNERS
Owner Address: Not reported
Owner Addr2: Not reported
Owner City,St,Zip: NY
Owner Country: Unknown
Own Op: Owner
Sub Type: E
Owner Name: Not reported
Owner Company: Rhino Trust
Owner Address: P.O. BOX 637
Owner Addr2: Not reported
Owner City,St,Zip: ASPEN, CO 81612

VARICK AVENUE (Continued) **S105973022**

Owner Country:	United States of America
Own Op:	Owner
Sub Type:	E
Owner Name:	Not reported
Owner Company:	*** MULTIPLE OWNERS ***
Owner Address:	P.O. BOX 637
Owner Addr2:	Not reported
Owner City,St,Zip:	ASPEN, CO 81612
Owner Country:	United States of America
HW Code:	Not reported
Waste Type:	Not reported
Waste Quantity:	Not reported
Waste Code:	Not reported
Crossref ID:	Not reported
Cross Ref Type Code:	Not reported
Cross Ref Type:	Not reported
Record Added Date:	Not reported
Record Updated:	Not reported
Updated By:	Not reported

AM269 **VARICK AVENUE** **NY HSWDS** **S105212104**
NNE **165 VARICK AVENUE** **N/A**
1/4-1/2 **BROOKLYN, NY, NY 11237**
0.254 mi.
1339 ft. **Site 5 of 5 in cluster AM**

Relative: **Lower**
Actual: **12 ft.**

HSWDS:

Facility ID:	HS2043
Region:	2
Facility Status:	None
Owner Type:	Puplic
Owner:	Rhino Trust
Owner Address:	P.O. Box 637
Owner Phone:	(303)920-9307
Operator Type:	Not reported
Operator:	Not reported
Operator:	Not reported
Operator Phone:	Not reported
EPA ID:	None
Registry:	D
Registry Site ID:	224017
RCRA Permitted:	Unknown
Site Code:	Construction and Demolition Debris Site
Owner City State:	Aspen, CO 81612
Operator City State:	Not reported
Quadrange:	Brooklyn, NY
Latitude:	40 43 00
Longitude:	73 56 00
Acres:	3.54
Operator Date:	Unknown
Close Date:	Unknown
Completed:	PSA/IRM
Active:	Unknown
PCB's Disposed:	No
Pesticides Disposed:	No
Metals Disposed:	Yes
Asbestos Disposed:	No
Volatile Organic Compounds Disposed:	No

VARICK AVENUE (Continued) **S105212104**

Semi Volatile Organic Compounds Disposed:	Yes
Analytical Info Exists for Air:	Not reported
Analytical Info Exists for Ground:	Groundwater
Analytical Info Exists for Surface:	Surface Water
Analytical Info Exists for Sediments:	Not reported
Analytical Info Exists for Surface:	Surface Soil
Analytical Info Exists for Substance:	Not reported
Analytical Info Exists for Waste:	Not reported
Analytical Info Exists for Leachate:	Not reported
Analytical Info Exists for EP Toxicity:	EPTox
Analytical Info Exists for TCLP:	TCLP
Threat to Environment/Public Health:	Environmental/Public
Surface Water Contamination:	Unknown
Surface Water Body Class:	SD
Groundwater Contamination:	Yes
Groundwater Classification:	Sole
Drinking Water Contamination:	Unknown
Drinking Water Supply is Active:	No
Any Known Fish or Wildlife:	No
Hazardous Exposure:	No
Site Has Controlled Acess:	Yes
Ambient Air Contamination:	No
Direct Contact:	No
EPA Hazardous Ranking System Score:	1.3
Inventory:	Not reported
Nefrap:	Not reported
Mailing:	Not reported
Tax Map No:	Not reported
Qualify:	Not reported
Next Action:	Not reported
Agencies:	Not reported
Air:	Not reported
Building:	Not reported
Site Desc:	Not reported
Drink:	Not reported
Eptox:	Not reported
Fish:	Not reported
Ground:	Not reported
Ground Desc:	Not reported
Hazardous Threat:	Not reported
Haz Threat Desc:	Not reported
Leachate:	Not reported
Preparer:	Not reported
Sediment:	Not reported
Soil:	Not reported
Surface:	Not reported
Status:	Not reported
Surface Soil:	Not reported
Surface:	Not reported
TCLP:	Not reported
Waste:	Not reported

270 SE 1/4-1/2 0.264 mi. 1396 ft. | **10-85 IRVING AVE.**
10-85 IRVING AVENUE
BROOKLYN, NY | **NY LTANKS** | **S106703485**
N/A

Relative: Higher

Actual: 25 ft.

LTANKS:

Name:	10-85 IRVING AVE.
Address:	10-85 IRVING AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9008571 / 1992-09-30
Facility ID:	9008571
Site ID:	286633
Spill Date:	1990-11-05
Spill Cause:	Tank Test Failure
Spill Source:	Commercial/Industrial
Spill Class:	B3
Cleanup Ceased:	1992-09-30
SWIS:	2401
Investigator:	BATTISTA
Referred To:	Not reported
Reported to Dept:	1990-11-05
CID:	Not reported
Water Affected:	Not reported
Spill Notifier:	Tank Tester
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	1990-11-07
Spill Record Last Update:	2002-03-26
Spiller Name:	Not reported
Spiller Company:	BRICK & BALERSTEIN BOX CO
Spiller Address:	10-85 IRVING AVENUE
Spiller County:	001
Spiller Contact:	Not reported
Spiller Phone:	Not reported
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	232309
DEC Memo:	""
Remarks:	"3K TANK FAILED HORNER EZY CHECK WITH A GROSS LEAK, VISUAL LEAK, TO POSSIBLY WELD TOP OF TANK IN MANWAY."

All TTF:

Facility ID:	9008571
Spill Number:	9008571
Spill Tank Test:	1537827
Site ID:	286633
Tank Number:	Not reported
Tank Size:	0
Material:	0001
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	00
Test Method 2:	Unknown
Leak Rate:	.00

10-85 IRVING AVE. (Continued) **S106703485**

Gross Fail: Not reported
Modified By: Spills
Last Modified Date: Not reported

All Materials:
Site ID: 286633
Operable Unit ID: 949232
Operable Unit: 01
Material ID: 432385
Material Code: 0001A
Material Name: #2 fuel oil
Case No.: Not reported
Material FA: Petroleum
Quantity: -1.00
Units: L
Recovered: .00
Oxygenate: Not reported

271
ENE
1/4-1/2
0.276 mi.
1456 ft.

DANGELO AUTO SALES & PARTS CORP **NY SWF/LF** **S108145799**
582 JOHNSON AVE **N/A**
BROOKLYN, NY 11237

Relative:
Lower

Actual:
14 ft.

SWF/LF:
Flag: INACTIVE
Region Code: 2
Phone Number: Not reported
Owner Name: Not reported
Owner Type: Not reported
Owner Address: Not reported
Owner Addr2: Not reported
Owner City,St,Zip: Not reported
Owner Email: Not reported
Owner Phone: Not reported
Contact Name: Not reported
Contact Address: Not reported
Contact Addr2: Not reported
Contact City,St,Zip: Not reported
Contact Email: Not reported
Contact Phone: Not reported
Activity Desc: z Retired - Vehicle Dismantling Facility
Activity Number: Not reported
Active: No
East Coordinate: 590850
North Coordinate: 4506966
Accuracy Code: Not reported
Regulatory Status: Not reported
Waste Type: Not reported
Authorization #: Not reported
Authorization Date: Not reported
Expiration Date: Not reported
Operator Name: Not reported
Operator Type: Not reported
Laste Date: Not reported

AN272 **FRITO LAY** **NY ENG CONTROLS** **S109416391**
NW **202-218 MORGAN AVENUE** **NY INST CONTROL** **N/A**
1/4-1/2 **BROOKLYN, NY 11237** **NY BROWNFIELDS**
0.280 mi.
1481 ft. **Site 1 of 2 in cluster AN**

Relative:
Lower

Actual:
13 ft.

ENG CONTROLS:

Name:	FRITO LAY
Address:	202-218 MORGAN AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Site Code:	407689
HW Code:	C224133
Control Code:	18
Control Type:	ENG
Date Record Added:	10/22/2013
Date Rec Updated:	05/31/2017
Updated By:	CHPOST
Site Description:	Location: The site is located at 202-218 Morgan Avenue in an urban area in the north end of the Borough of Brooklyn, Kings County. To the north of the property is a warehouse, to the east and south is the English Kills, a tributary to the Newtown Creek, and to the west the site is bordered by Morgan Avenue, between Ten Eyck Street and Stagg Street. Site Features: The site property is approximately 2.8 acres in area and is currently undeveloped with no standing structures. Current Zoning and Land Use: The site is currently vacant, and is zoned for industrial use. The surrounding parcels are currently used for a combination of commercial and industrial use. Past Use of the Site: The site was previously used as a scrap metal yard. The activities related to this type of business are the apparent source of site-wide PCB contamination. Scrap activities and the presence of historic fill material are believed to be the cause of the site-wide metals contamination. Site Geology and Hydrogeology: The site is approximately 13 feet above mean sea level. Depth to groundwater is approximately 11 feet below ground surface. The nearest water body is the English Kills, a tributary to the Newtown Creek, which abuts the eastern and south sides of the site. Groundwater flow is to the southeast. The site soil is primarily fill material to the water table. Below the fill material the site is underlain by sand and gravel.
Env Problem:	The remedial plan for the site was implemented such that the site no longer presents a significant environmental threat due to the ongoing release of arsenic contamination from source areas in the soil to groundwater, as well as the high levels of PCBs and other metals, such as lead and mercury, in soil throughout the site.
Health Problem:	The site is fenced and covered with asphalt and concrete; therefore, people are not expected to come into contact with site-related contaminants in soil and groundwater unless they dig below the site cover system. People are not coming into contact with the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site buildings which are developed and occupied.
Dump:	False

FRITO LAY (Continued) **S109416391**

Structure:	False
Lagoon:	False
Landfill:	False
Pond:	False
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	Not reported
Dell:	Not reported
Record Add:	2008-12-11 13:40:00
Record Upd:	2013-09-20 14:10:00
Updated By:	ldennist
Own Op:	Applicant/Requestor
Sub Type:	P03
Owner Name:	Keith Massa
Owner Company:	Rolling Frito-Lay Sales, LP
Owner Address:	7701 Legacy Drive
Owner Addr2:	Not reported
Owner City,St,Zip:	Plano, TX 75024-4099
Owner Country:	United States of America
Own Op:	Owner
Sub Type:	P03
Owner Name:	Cedric Robinson
Owner Company:	Rolling Frito-Lay Sales, LP
Owner Address:	7701 Legacy Drive
Owner Addr2:	Not reported
Owner City,St,Zip:	Plano, TX 75024-4099
Owner Country:	United States of America
Own Op:	Document Repository
Sub Type:	P03
Owner Name:	Patricia Sacco, Library Information Supervisor
Owner Company:	Brooklyn Public Library Bushwick Branch
Owner Address:	340 Bushwick Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11206
Owner Country:	United States of America
HW Code:	C224133
Waste Type:	tetrachloroethene (PCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	ARSENIC
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	MERCURY
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	1,1 Dichloroethene
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	LEAD
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	POLYCHLORINATED BIPHENYLS (PCB)

FRITO LAY (Continued) **S109416391**

Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	TETRACHLOROETHYLENE (PCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	VINYL CHLORIDE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	DICHLOROETHYLENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
Crossref ID:	2013000399904
Cross Ref Type Code:	25
Cross Ref Type:	County Recording Identifier
Record Added Date:	2013-10-11 11:05:00
Record Updated:	2013-10-11 11:05:00
Updated By:	KPSARNOW
Crossref ID:	C224133
Cross Ref Type Code:	22
Cross Ref Type:	BCP Site ID
Record Added Date:	2013-10-28 11:27:00
Record Updated:	2013-10-28 11:27:00
Updated By:	JEBROWN
Crossref ID:	A2-0622-0709
Cross Ref Type Code:	23
Cross Ref Type:	Agreement/Consent Order Number
Record Added Date:	2013-10-28 11:27:00
Record Updated:	2013-10-28 11:27:00
Updated By:	JEBROWN
Crossref ID:	08/20/2009
Cross Ref Type Code:	26
Cross Ref Type:	Agreement/Consent Order Date
Record Added Date:	2013-10-28 11:26:00
Record Updated:	2013-10-28 11:26:00
Updated By:	JEBROWN
Crossref ID:	ER1609278
Cross Ref Type Code:	01
Cross Ref Type:	Spill No.
Record Added Date:	2018-04-13 15:49:00
Record Updated:	2018-04-13 15:49:00
Updated By:	CHPOST

Name:	FRITO LAY
Address:	202-218 MORGAN AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Site Code:	407689
HW Code:	C224133
Control Code:	13
Control Type:	ENG
Date Record Added:	10/22/2013
Date Rec Updated:	05/31/2017
Updated By:	CHPOST
Site Description:	Location: The site is located at 202-218 Morgan Avenue in an urban area in the north end of the Borough of Brooklyn, Kings County. To

FRITO LAY (Continued) **S109416391**

	the north of the property is a warehouse, to the east and south is the English Kills, a tributary to the Newtown Creek, and to the west the site is bordered by Morgan Avenue, between Ten Eyck Street and Stagg Street. Site Features: The site property is approximately 2.8 acres in area and is currently undeveloped with no standing structures. Current Zoning and Land Use: The site is currently vacant, and is zoned for industrial use. The surrounding parcels are currently used for a combination of commercial and industrial use. Past Use of the Site: The site was previously used as a scrap metal yard. The activities related to this type of business are the apparent source of site-wide PCB contamination. Scrap activities and the presence of historic fill material are believed to be the cause of the site-wide metals contamination. Site Geology and Hydrogeology: The site is approximately 13 feet above mean sea level. Depth to groundwater is approximately 11 feet below ground surface. The nearest water body is the English Kills, a tributary to the Newtown Creek, which abuts the eastern and south sides of the site. Groundwater flow is to the southeast. The site soil is primarily fill material to the water table. Below the fill material the site is underlain by sand and gravel.
Env Problem:	The remedial plan for the site was implemented such that the site no longer presents a significant environmental threat due to the ongoing release of arsenic contamination from source areas in the soil to groundwater, as well as the high levels of PCBs and other metals, such as lead and mercury, in soil throughout the site.
Health Problem:	The site is fenced and covered with asphalt and concrete; therefore, people are not expected to come into contact with site-related contaminants in soil and groundwater unless they dig below the site cover system. People are not coming into contact with the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site buildings which are developed and occupied.
Dump:	False
Structure:	False
Lagoon:	False
Landfill:	False
Pond:	False
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	Not reported
Dell:	Not reported
Record Add:	2008-12-11 13:40:00
Record Upd:	2013-09-20 14:10:00
Updated By:	ldennist
Own Op:	Applicant/Requestor
Sub Type:	P03
Owner Name:	Keith Massa
Owner Company:	Rolling Frito-Lay Sales, LP
Owner Address:	7701 Legacy Drive
Owner Addr2:	Not reported

FRITO LAY (Continued) **S109416391**

Owner City,St,Zip:	Plano, TX 75024-4099
Owner Country:	United States of America
Own Op:	Owner
Sub Type:	P03
Owner Name:	Cedric Robinson
Owner Company:	Rolling Frito-Lay Sales, LP
Owner Address:	7701 Legacy Drive
Owner Addr2:	Not reported
Owner City,St,Zip:	Plano, TX 75024-4099
Owner Country:	United States of America
Own Op:	Document Repository
Sub Type:	P03
Owner Name:	Patricia Sacco, Library Information Supervisor
Owner Company:	Brooklyn Public Library Bushwick Branch
Owner Address:	340 Bushwick Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11206
Owner Country:	United States of America
HW Code:	C224133
Waste Type:	tetrachloroethene (PCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	ARSENIC
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	MERCURY
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	1,1 Dichloroethene
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	LEAD
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	POLYCHLORINATED BIPHENYLS (PCB)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	TETRACHLOROETHYLENE (PCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	VINYL CHLORIDE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	DICHLOROETHYLENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
Crossref ID:	2013000399904
Cross Ref Type Code:	25
Cross Ref Type:	County Recording Identifier

FRITO LAY (Continued) **S109416391**

Record Added Date:	2013-10-11 11:05:00
Record Updated:	2013-10-11 11:05:00
Updated By:	KPSARNOW
Crossref ID:	C224133
Cross Ref Type Code:	22
Cross Ref Type:	BCP Site ID
Record Added Date:	2013-10-28 11:27:00
Record Updated:	2013-10-28 11:27:00
Updated By:	JEBROWN
Crossref ID:	A2-0622-0709
Cross Ref Type Code:	23
Cross Ref Type:	Agreement/Consent Order Number
Record Added Date:	2013-10-28 11:27:00
Record Updated:	2013-10-28 11:27:00
Updated By:	JEBROWN
Crossref ID:	08/20/2009
Cross Ref Type Code:	26
Cross Ref Type:	Agreement/Consent Order Date
Record Added Date:	2013-10-28 11:26:00
Record Updated:	2013-10-28 11:26:00
Updated By:	JEBROWN
Crossref ID:	ER1609278
Cross Ref Type Code:	01
Cross Ref Type:	Spill No.
Record Added Date:	2018-04-13 15:49:00
Record Updated:	2018-04-13 15:49:00
Updated By:	CHPOST

Name:	FRITO LAY
Address:	202-218 MORGAN AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Site Code:	407689
HW Code:	C224133
Control Code:	15
Control Type:	ENG
Date Record Added:	10/22/2013
Date Rec Updated:	05/31/2017
Updated By:	CHPOST
Site Description:	Location: The site is located at 202-218 Morgan Avenue in an urban area in the north end of the Borough of Brooklyn, Kings County. To the north of the property is a warehouse, to the east and south is the English Kills, a tributary to the Newtown Creek, and to the west the site is bordered by Morgan Avenue, between Ten Eyck Street and Stagg Street. Site Features: The site property is approximately 2.8 acres in area and is currently undeveloped with no standing structures. Current Zoning and Land Use: The site is currently vacant, and is zoned for industrial use. The surrounding parcels are currently used for a combination of commercial and industrial use. Past Use of the Site: The site was previously used as a scrap metal yard. The activities related to this type of business are the apparent source of site-wide PCB contamination. Scrap activities and the presence of historic fill material are believed to be the cause of the site-wide metals contamination. Site Geology and Hydrogeology: The site is approximately 13 feet above mean sea level. Depth to groundwater is approximately 11 feet below ground surface. The nearest water body is the English Kills, a tributary to the Newtown Creek, which abuts the eastern and south sides of the site.

FRITO LAY (Continued) **S109416391**

	Groundwater flow is to the southeast. The site soil is primarily fill material to the water table. Below the fill material the site is underlain by sand and gravel.
Env Problem:	The remedial plan for the site was implemented such that the site no longer presents a significant environmental threat due to the ongoing release of arsenic contamination from source areas in the soil to groundwater, as well as the high levels of PCBs and other metals, such as lead and mercury, in soil throughout the site.
Health Problem:	The site is fenced and covered with asphalt and concrete; therefore, people are not expected to come into contact with site-related contaminants in soil and groundwater unless they dig below the site cover system. People are not coming into contact with the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site buildings which are developed and occupied.
Dump:	False
Structure:	False
Lagoon:	False
Landfill:	False
Pond:	False
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	Not reported
Dell:	Not reported
Record Add:	2008-12-11 13:40:00
Record Upd:	2013-09-20 14:10:00
Updated By:	ldennist
Own Op:	Applicant/Requestor
Sub Type:	P03
Owner Name:	Keith Massa
Owner Company:	Rolling Frito-Lay Sales, LP
Owner Address:	7701 Legacy Drive
Owner Addr2:	Not reported
Owner City,St,Zip:	Plano, TX 75024-4099
Owner Country:	United States of America
Own Op:	Owner
Sub Type:	P03
Owner Name:	Cedric Robinson
Owner Company:	Rolling Frito-Lay Sales, LP
Owner Address:	7701 Legacy Drive
Owner Addr2:	Not reported
Owner City,St,Zip:	Plano, TX 75024-4099
Owner Country:	United States of America
Own Op:	Document Repository
Sub Type:	P03
Owner Name:	Patricia Sacco, Library Information Supervisor
Owner Company:	Brooklyn Public Library Bushwick Branch
Owner Address:	340 Bushwick Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11206

FRITO LAY (Continued) **S109416391**

Owner Country:	United States of America
HW Code:	C224133
Waste Type:	tetrachloroethene (PCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	ARSENIC
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	MERCURY
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	1,1 Dichloroethene
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	LEAD
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	POLYCHLORINATED BIPHENYLS (PCB)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	TETRACHLOROETHYLENE (PCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	VINYL CHLORIDE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	DICHLOROETHYLENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
Crossref ID:	2013000399904
Cross Ref Type Code:	25
Cross Ref Type:	County Recording Identifier
Record Added Date:	2013-10-11 11:05:00
Record Updated:	2013-10-11 11:05:00
Updated By:	KPSARNOW
Crossref ID:	C224133
Cross Ref Type Code:	22
Cross Ref Type:	BCP Site ID
Record Added Date:	2013-10-28 11:27:00
Record Updated:	2013-10-28 11:27:00
Updated By:	JEBROWN
Crossref ID:	A2-0622-0709
Cross Ref Type Code:	23
Cross Ref Type:	Agreement/Consent Order Number
Record Added Date:	2013-10-28 11:27:00
Record Updated:	2013-10-28 11:27:00
Updated By:	JEBROWN
Crossref ID:	08/20/2009
Cross Ref Type Code:	26

FRITO LAY (Continued) **S109416391**

Cross Ref Type:	Agreement/Consent Order Date
Record Added Date:	2013-10-28 11:26:00
Record Updated:	2013-10-28 11:26:00
Updated By:	JEBROWN
Crossref ID:	ER1609278
Cross Ref Type Code:	01
Cross Ref Type:	Spill No.
Record Added Date:	2018-04-13 15:49:00
Record Updated:	2018-04-13 15:49:00
Updated By:	CHPOST
Name:	FRITO LAY
Address:	202-218 MORGAN AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Site Code:	407689
HW Code:	C224133
Control Code:	22
Control Type:	ENG
Date Record Added:	10/22/2013
Date Rec Updated:	05/31/2017
Updated By:	CHPOST
Site Description:	Location: The site is located at 202-218 Morgan Avenue in an urban area in the north end of the Borough of Brooklyn, Kings County. To the north of the property is a warehouse, to the east and south is the English Kills, a tributary to the Newtown Creek, and to the west the site is bordered by Morgan Avenue, between Ten Eyck Street and Stagg Street. Site Features: The site property is approximately 2.8 acres in area and is currently undeveloped with no standing structures. Current Zoning and Land Use: The site is currently vacant, and is zoned for industrial use. The surrounding parcels are currently used for a combination of commercial and industrial use. Past Use of the Site: The site was previously used as a scrap metal yard. The activities related to this type of business are the apparent source of site-wide PCB contamination. Scrap activities and the presence of historic fill material are believed to be the cause of the site-wide metals contamination. Site Geology and Hydrogeology: The site is approximately 13 feet above mean sea level. Depth to groundwater is approximately 11 feet below ground surface. The nearest water body is the English Kills, a tributary to the Newtown Creek, which abuts the eastern and south sides of the site. Groundwater flow is to the southeast. The site soil is primarily fill material to the water table. Below the fill material the site is underlain by sand and gravel.
Env Problem:	The remedial plan for the site was implemented such that the site no longer presents a significant environmental threat due to the ongoing release of arsenic contamination from source areas in the soil to groundwater, as well as the high levels of PCBs and other metals, such as lead and mercury, in soil throughout the site.
Health Problem:	The site is fenced and covered with asphalt and concrete; therefore, people are not expected to come into contact with site-related contaminants in soil and groundwater unless they dig below the site cover system. People are not coming into contact with the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the

FRITO LAY (Continued) **S109416391**

movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site buildings which are developed and occupied.

Dump:	False
Structure:	False
Lagoon:	False
Landfill:	False
Pond:	False
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	Not reported
Dell:	Not reported
Record Add:	2008-12-11 13:40:00
Record Upd:	2013-09-20 14:10:00
Updated By:	ldennist
Own Op:	Applicant/Requestor
Sub Type:	P03
Owner Name:	Keith Massa
Owner Company:	Rolling Frito-Lay Sales, LP
Owner Address:	7701 Legacy Drive
Owner Addr2:	Not reported
Owner City,St,Zip:	Plano, TX 75024-4099
Owner Country:	United States of America
Own Op:	Owner
Sub Type:	P03
Owner Name:	Cedric Robinson
Owner Company:	Rolling Frito-Lay Sales, LP
Owner Address:	7701 Legacy Drive
Owner Addr2:	Not reported
Owner City,St,Zip:	Plano, TX 75024-4099
Owner Country:	United States of America
Own Op:	Document Repository
Sub Type:	P03
Owner Name:	Patricia Sacco, Library Information Supervisor
Owner Company:	Brooklyn Public Library Bushwick Branch
Owner Address:	340 Bushwick Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11206
Owner Country:	United States of America
HW Code:	C224133
Waste Type:	tetrachloroethene (PCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	ARSENIC
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	MERCURY
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	1,1 Dichloroethene
Waste Quantity:	UNKNOWN
Waste Code:	Not reported

FRITO LAY (Continued) **S109416391**

HW Code:	C224133
Waste Type:	LEAD
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	POLYCHLORINATED BIPHENYLS (PCB)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	TETRACHLOROETHYLENE (PCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	VINYL CHLORIDE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	DICHLOROETHYLENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
Crossref ID:	2013000399904
Cross Ref Type Code:	25
Cross Ref Type:	County Recording Identifier
Record Added Date:	2013-10-11 11:05:00
Record Updated:	2013-10-11 11:05:00
Updated By:	KPSARNOW
Crossref ID:	C224133
Cross Ref Type Code:	22
Cross Ref Type:	BCP Site ID
Record Added Date:	2013-10-28 11:27:00
Record Updated:	2013-10-28 11:27:00
Updated By:	JEBROWN
Crossref ID:	A2-0622-0709
Cross Ref Type Code:	23
Cross Ref Type:	Agreement/Consent Order Number
Record Added Date:	2013-10-28 11:27:00
Record Updated:	2013-10-28 11:27:00
Updated By:	JEBROWN
Crossref ID:	08/20/2009
Cross Ref Type Code:	26
Cross Ref Type:	Agreement/Consent Order Date
Record Added Date:	2013-10-28 11:26:00
Record Updated:	2013-10-28 11:26:00
Updated By:	JEBROWN
Crossref ID:	ER1609278
Cross Ref Type Code:	01
Cross Ref Type:	Spill No.
Record Added Date:	2018-04-13 15:49:00
Record Updated:	2018-04-13 15:49:00
Updated By:	CHPOST

INST CONTROL:

Name:	FRITO LAY
Address:	202-218 MORGAN AVENUE
City,State,Zip:	BROOKLYN, NY 11237
Site Code:	407689
Control Name:	Site Management Plan

FRITO LAY (Continued) **S109416391**

HW Code: C224133
Control Code: 32
Control Type: INST
Dt record added: 10/22/2013
Dt rec updated: 05/31/2017
Updated By: CHPOST
Site Code: 407689
Site Description: Location: The site is located at 202-218 Morgan Avenue in an urban area in the north end of the Borough of Brooklyn, Kings County. To the north of the property is a warehouse, to the east and south is the English Kills, a tributary to the Newtown Creek, and to the west the site is bordered by Morgan Avenue, between Ten Eyck Street and Stagg Street. Site Features: The site property is approximately 2.8 acres in area and is currently undeveloped with no standing structures. Current Zoning and Land Use: The site is currently vacant, and is zoned for industrial use. The surrounding parcels are currently used for a combination of commercial and industrial use. Past Use of the Site: The site was previously used as a scrap metal yard. The activities related to this type of business are the apparent source of site-wide PCB contamination. Scrap activities and the presence of historic fill material are believed to be the cause of the site-wide metals contamination. Site Geology and Hydrogeology: The site is approximately 13 feet above mean sea level. Depth to groundwater is approximately 11 feet below ground surface. The nearest water body is the English Kills, a tributary to the Newtown Creek, which abuts the eastern and south sides of the site. Groundwater flow is to the southeast. The site soil is primarily fill material to the water table. Below the fill material the site is underlain by sand and gravel.
Env Problem: The remedial plan for the site was implemented such that the site no longer presents a significant environmental threat due to the ongoing release of arsenic contamination from source areas in the soil to groundwater, as well as the high levels of PCBs and other metals, such as lead and mercury, in soil throughout the site.
Health Problem: The site is fenced and covered with asphalt and concrete; therefore, people are not expected to come into contact with site-related contaminants in soil and groundwater unless they dig below the site cover system. People are not coming into contact with the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site buildings which are developed and occupied.
Dump: False
Structure: False
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported

FRITO LAY (Continued) **S109416391**

Record Add: 2008-12-11 13:40:00
Record Upd: 2013-09-20 14:10:00
Updated By: ldennist
Own Op: Applicant/Requestor
Sub Type: P03
Owner Name: Keith Massa
Owner Company: Rolling Frito-Lay Sales, LP
Owner Address: 7701 Legacy Drive
Owner Addr2: Not reported
Owner City,St,Zip: Plano, TX 75024-4099
Owner Country: United States of America
Own Op: Owner
Sub Type: P03
Owner Name: Cedric Robinson
Owner Company: Rolling Frito-Lay Sales, LP
Owner Address: 7701 Legacy Drive
Owner Addr2: Not reported
Owner City,St,Zip: Plano, TX 75024-4099
Owner Country: United States of America
Own Op: Document Repository
Sub Type: P03
Owner Name: Patricia Sacco, Library Information Supervisor
Owner Company: Brooklyn Public Library Bushwick Branch
Owner Address: 340 Bushwick Avenue
Owner Addr2: Not reported
Owner City,St,Zip: Brooklyn, NY 11206
Owner Country: United States of America
HW Code: C224133
Waste Type: tetrachloroethene (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: ARSENIC
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: MERCURY
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: 1,1 Dichloroethene
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: LEAD
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: POLYCHLORINATED BIPHENYLS (PCB)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: TETRACHLOROETHYLENE (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: VINYL CHLORIDE

FRITO LAY (Continued) **S109416391**

Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: DICHLOROETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: 2013000399904
Cross Ref Type Code: 25
Cross Ref Type: County Recording Identifier
Record Added Date: 2013-10-11 11:05:00
Record Updated: 2013-10-11 11:05:00
Updated By: KPSARNOW
Crossref ID: C224133
Cross Ref Type Code: 22
Cross Ref Type: BCP Site ID
Record Added Date: 2013-10-28 11:27:00
Record Updated: 2013-10-28 11:27:00
Updated By: JEBROWN
Crossref ID: A2-0622-0709
Cross Ref Type Code: 23
Cross Ref Type: Agreement/Consent Order Number
Record Added Date: 2013-10-28 11:27:00
Record Updated: 2013-10-28 11:27:00
Updated By: JEBROWN
Crossref ID: 08/20/2009
Cross Ref Type Code: 26
Cross Ref Type: Agreement/Consent Order Date
Record Added Date: 2013-10-28 11:26:00
Record Updated: 2013-10-28 11:26:00
Updated By: JEBROWN
Crossref ID: ER1609278
Cross Ref Type Code: 01
Cross Ref Type: Spill No.
Record Added Date: 2018-04-13 15:49:00
Record Updated: 2018-04-13 15:49:00
Updated By: CHPOST

Name: FRITO LAY
Address: 202-218 MORGAN AVENUE
City,State,Zip: BROOKLYN, NY 11237
Site Code: 407689
Control Name: Monitoring Plan
HW Code: C224133
Control Code: 31
Control Type: INST
Dt record added: 10/22/2013
Dt rec updated: 05/31/2017
Updated By: CHPOST
Site Code: 407689
Site Description: Location: The site is located at 202-218 Morgan Avenue in an urban area in the north end of the Borough of Brooklyn, Kings County. To the north of the property is a warehouse, to the east and south is the English Kills, a tributary to the Newtown Creek, and to the west the site is bordered by Morgan Avenue, between Ten Eyck Street and Stagg Street. Site Features: The site property is approximately 2.8 acres in area and is currently undeveloped with no standing structures. Current Zoning and Land Use: The site is currently

FRITO LAY (Continued) **S109416391**

vacant, and is zoned for industrial use. The surrounding parcels are currently used for a combination of commercial and industrial use. Past Use of the Site: The site was previously used as a scrap metal yard. The activities related to this type of business are the apparent source of site-wide PCB contamination. Scrap activities and the presence of historic fill material are believed to be the cause of the site-wide metals contamination. Site Geology and Hydrogeology: The site is approximately 13 feet above mean sea level. Depth to groundwater is approximately 11 feet below ground surface. The nearest water body is the English Kills, a tributary to the Newtown Creek, which abuts the eastern and south sides of the site. Groundwater flow is to the southeast. The site soil is primarily fill material to the water table. Below the fill material the site is underlain by sand and gravel.

Env Problem: The remedial plan for the site was implemented such that the site no longer presents a significant environmental threat due to the ongoing release of arsenic contamination from source areas in the soil to groundwater, as well as the high levels of PCBs and other metals, such as lead and mercury, in soil throughout the site.

Health Problem: The site is fenced and covered with asphalt and concrete; therefore, people are not expected to come into contact with site-related contaminants in soil and groundwater unless they dig below the site cover system. People are not coming into contact with the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site buildings which are developed and occupied.

Dump: False
Structure: False
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported
Record Add: 2008-12-11 13:40:00
Record Upd: 2013-09-20 14:10:00
Updated By: ldennist
Own Op: Applicant/Requestor
Sub Type: P03
Owner Name: Keith Massa
Owner Company: Rolling Frito-Lay Sales, LP
Owner Address: 7701 Legacy Drive
Owner Addr2: Not reported
Owner City,St,Zip: Plano, TX 75024-4099
Owner Country: United States of America
Own Op: Owner
Sub Type: P03
Owner Name: Cedric Robinson
Owner Company: Rolling Frito-Lay Sales, LP

FRITO LAY (Continued) **S109416391**

Owner Address: 7701 Legacy Drive
Owner Addr2: Not reported
Owner City,St,Zip: Plano, TX 75024-4099
Owner Country: United States of America
Own Op: Document Repository
Sub Type: P03
Owner Name: Patricia Sacco, Library Information Supervisor
Owner Company: Brooklyn Public Library Bushwick Branch
Owner Address: 340 Bushwick Avenue
Owner Addr2: Not reported
Owner City,St,Zip: Brooklyn, NY 11206
Owner Country: United States of America
HW Code: C224133
Waste Type: tetrachloroethene (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: ARSENIC
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: MERCURY
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: 1,1 Dichloroethene
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: LEAD
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: POLYCHLORINATED BIPHENYLS (PCB)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: TETRACHLOROETHYLENE (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: VINYL CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: DICHLOROETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: 2013000399904
Cross Ref Type Code: 25
Cross Ref Type: County Recording Identifier
Record Added Date: 2013-10-11 11:05:00
Record Updated: 2013-10-11 11:05:00
Updated By: KPSARNOW
Crossref ID: C224133
Cross Ref Type Code: 22
Cross Ref Type: BCP Site ID

FRITO LAY (Continued) **S109416391**

Record Added Date: 2013-10-28 11:27:00
Record Updated: 2013-10-28 11:27:00
Updated By: JEBROWN
Crossref ID: A2-0622-0709
Cross Ref Type Code: 23
Cross Ref Type: Agreement/Consent Order Number
Record Added Date: 2013-10-28 11:27:00
Record Updated: 2013-10-28 11:27:00
Updated By: JEBROWN
Crossref ID: 08/20/2009
Cross Ref Type Code: 26
Cross Ref Type: Agreement/Consent Order Date
Record Added Date: 2013-10-28 11:26:00
Record Updated: 2013-10-28 11:26:00
Updated By: JEBROWN
Crossref ID: ER1609278
Cross Ref Type Code: 01
Cross Ref Type: Spill No.
Record Added Date: 2018-04-13 15:49:00
Record Updated: 2018-04-13 15:49:00
Updated By: CHPOST

Name: FRITO LAY
Address: 202-218 MORGAN AVENUE
City,State,Zip: BROOKLYN, NY 11237
Site Code: 407689
Control Name: Landuse Restriction
HW Code: C224133
Control Code: 25
Control Type: INST
Dt record added: 10/22/2013
Dt rec updated: 05/31/2017
Updated By: CHPOST
Site Code: 407689
Site Description: Location: The site is located at 202-218 Morgan Avenue in an urban area in the north end of the Borough of Brooklyn, Kings County. To the north of the property is a warehouse, to the east and south is the English Kills, a tributary to the Newtown Creek, and to the west the site is bordered by Morgan Avenue, between Ten Eyck Street and Stagg Street. Site Features: The site property is approximately 2.8 acres in area and is currently undeveloped with no standing structures. Current Zoning and Land Use: The site is currently vacant, and is zoned for industrial use. The surrounding parcels are currently used for a combination of commercial and industrial use. Past Use of the Site: The site was previously used as a scrap metal yard. The activities related to this type of business are the apparent source of site-wide PCB contamination. Scrap activities and the presence of historic fill material are believed to be the cause of the site-wide metals contamination. Site Geology and Hydrogeology: The site is approximately 13 feet above mean sea level. Depth to groundwater is approximately 11 feet below ground surface. The nearest water body is the English Kills, a tributary to the Newtown Creek, which abuts the eastern and south sides of the site. Groundwater flow is to the southeast. The site soil is primarily fill material to the water table. Below the fill material the site is underlain by sand and gravel.
Env Problem: The remedial plan for the site was implemented such that the site no

FRITO LAY (Continued) **S109416391**

longer presents a significant environmental threat due to the ongoing release of arsenic contamination from source areas in the soil to groundwater, as well as the high levels of PCBs and other metals, such as lead and mercury, in soil throughout the site.

Health Problem: The site is fenced and covered with asphalt and concrete; therefore, people are not expected to come into contact with site-related contaminants in soil and groundwater unless they dig below the site cover system. People are not coming into contact with the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site buildings which are developed and occupied.

Dump: False
Structure: False
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported
Record Add: 2008-12-11 13:40:00
Record Upd: 2013-09-20 14:10:00
Updated By: ldennist
Own Op: Applicant/Requestor
Sub Type: P03
Owner Name: Keith Massa
Owner Company: Rolling Frito-Lay Sales, LP
Owner Address: 7701 Legacy Drive
Owner Addr2: Not reported
Owner City,St,Zip: Plano, TX 75024-4099
Owner Country: United States of America
Own Op: Owner
Sub Type: P03
Owner Name: Cedric Robinson
Owner Company: Rolling Frito-Lay Sales, LP
Owner Address: 7701 Legacy Drive
Owner Addr2: Not reported
Owner City,St,Zip: Plano, TX 75024-4099
Owner Country: United States of America
Own Op: Document Repository
Sub Type: P03
Owner Name: Patricia Sacco, Library Information Supervisor
Owner Company: Brooklyn Public Library Bushwick Branch
Owner Address: 340 Bushwick Avenue
Owner Addr2: Not reported
Owner City,St,Zip: Brooklyn, NY 11206
Owner Country: United States of America
HW Code: C224133
Waste Type: tetrachloroethene (PCE)
Waste Quantity: UNKNOWN

FRITO LAY (Continued) **S109416391**

Waste Code: Not reported
HW Code: C224133
Waste Type: ARSENIC
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: MERCURY
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: 1,1 Dichloroethene
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: LEAD
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: POLYCHLORINATED BIPHENYLS (PCB)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: TETRACHLOROETHYLENE (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: VINYL CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: DICHLOROETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: 2013000399904
Cross Ref Type Code: 25
Cross Ref Type: County Recording Identifier
Record Added Date: 2013-10-11 11:05:00
Record Updated: 2013-10-11 11:05:00
Updated By: KPSARNOW
Crossref ID: C224133
Cross Ref Type Code: 22
Cross Ref Type: BCP Site ID
Record Added Date: 2013-10-28 11:27:00
Record Updated: 2013-10-28 11:27:00
Updated By: JEBROWN
Crossref ID: A2-0622-0709
Cross Ref Type Code: 23
Cross Ref Type: Agreement/Consent Order Number
Record Added Date: 2013-10-28 11:27:00
Record Updated: 2013-10-28 11:27:00
Updated By: JEBROWN
Crossref ID: 08/20/2009
Cross Ref Type Code: 26
Cross Ref Type: Agreement/Consent Order Date
Record Added Date: 2013-10-28 11:26:00
Record Updated: 2013-10-28 11:26:00
Updated By: JEBROWN

FRITO LAY (Continued) **S109416391**

Crossref ID: ER1609278
Cross Ref Type Code: 01
Cross Ref Type: Spill No.
Record Added Date: 2018-04-13 15:49:00
Record Updated: 2018-04-13 15:49:00
Updated By: CHPOST

Name: FRITO LAY
Address: 202-218 MORGAN AVENUE
City,State,Zip: BROOKLYN, NY 11237
Site Code: 407689
Control Name: Ground Water Use Restriction
HW Code: C224133
Control Code: 08
Control Type: INST
Dt record added: 10/22/2013
Dt rec updated: 05/31/2017
Updated By: CHPOST
Site Code: 407689
Site Description: Location: The site is located at 202-218 Morgan Avenue in an urban area in the north end of the Borough of Brooklyn, Kings County. To the north of the property is a warehouse, to the east and south is the English Kills, a tributary to the Newtown Creek, and to the west the site is bordered by Morgan Avenue, between Ten Eyck Street and Stagg Street. Site Features: The site property is approximately 2.8 acres in area and is currently undeveloped with no standing structures. Current Zoning and Land Use: The site is currently vacant, and is zoned for industrial use. The surrounding parcels are currently used for a combination of commercial and industrial use. Past Use of the Site: The site was previously used as a scrap metal yard. The activities related to this type of business are the apparent source of site-wide PCB contamination. Scrap activities and the presence of historic fill material are believed to be the cause of the site-wide metals contamination. Site Geology and Hydrogeology: The site is approximately 13 feet above mean sea level. Depth to groundwater is approximately 11 feet below ground surface. The nearest water body is the English Kills, a tributary to the Newtown Creek, which abuts the eastern and south sides of the site. Groundwater flow is to the southeast. The site soil is primarily fill material to the water table. Below the fill material the site is underlain by sand and gravel.
Env Problem: The remedial plan for the site was implemented such that the site no longer presents a significant environmental threat due to the ongoing release of arsenic contamination from source areas in the soil to groundwater, as well as the high levels of PCBs and other metals, such as lead and mercury, in soil throughout the site.
Health Problem: The site is fenced and covered with asphalt and concrete; therefore, people are not expected to come into contact with site-related contaminants in soil and groundwater unless they dig below the site cover system. People are not coming into contact with the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The potential

FRITO LAY (Continued) **S109416391**

exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site buildings which are developed and occupied.

Dump: False
Structure: False
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported
Record Add: 2008-12-11 13:40:00
Record Upd: 2013-09-20 14:10:00
Updated By: ldennist
Own Op: Applicant/Requestor
Sub Type: P03
Owner Name: Keith Massa
Owner Company: Rolling Frito-Lay Sales, LP
Owner Address: 7701 Legacy Drive
Owner Addr2: Not reported
Owner City,St,Zip: Plano, TX 75024-4099
Owner Country: United States of America
Own Op: Owner
Sub Type: P03
Owner Name: Cedric Robinson
Owner Company: Rolling Frito-Lay Sales, LP
Owner Address: 7701 Legacy Drive
Owner Addr2: Not reported
Owner City,St,Zip: Plano, TX 75024-4099
Owner Country: United States of America
Own Op: Document Repository
Sub Type: P03
Owner Name: Patricia Sacco, Library Information Supervisor
Owner Company: Brooklyn Public Library Bushwick Branch
Owner Address: 340 Bushwick Avenue
Owner Addr2: Not reported
Owner City,St,Zip: Brooklyn, NY 11206
Owner Country: United States of America
HW Code: C224133
Waste Type: tetrachloroethene (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: ARSENIC
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: MERCURY
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: 1,1 Dichloroethene
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: LEAD

FRITO LAY (Continued) **S109416391**

Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: POLYCHLORINATED BIPHENYLS (PCB)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: TETRACHLOROETHYLENE (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: VINYL CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: DICHLOROETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: 2013000399904
Cross Ref Type Code: 25
Cross Ref Type: County Recording Identifier
Record Added Date: 2013-10-11 11:05:00
Record Updated: 2013-10-11 11:05:00
Updated By: KPSARNOW
Crossref ID: C224133
Cross Ref Type Code: 22
Cross Ref Type: BCP Site ID
Record Added Date: 2013-10-28 11:27:00
Record Updated: 2013-10-28 11:27:00
Updated By: JEBROWN
Crossref ID: A2-0622-0709
Cross Ref Type Code: 23
Cross Ref Type: Agreement/Consent Order Number
Record Added Date: 2013-10-28 11:27:00
Record Updated: 2013-10-28 11:27:00
Updated By: JEBROWN
Crossref ID: 08/20/2009
Cross Ref Type Code: 26
Cross Ref Type: Agreement/Consent Order Date
Record Added Date: 2013-10-28 11:26:00
Record Updated: 2013-10-28 11:26:00
Updated By: JEBROWN
Crossref ID: ER1609278
Cross Ref Type Code: 01
Cross Ref Type: Spill No.
Record Added Date: 2018-04-13 15:49:00
Record Updated: 2018-04-13 15:49:00
Updated By: CHPOST

Name: FRITO LAY
Address: 202-218 MORGAN AVENUE
City,State,Zip: BROOKLYN, NY 11237
Site Code: 407689
Control Name: Soil Management Plan
HW Code: C224133
Control Code: 14
Control Type: INST

FRITO LAY (Continued) **S109416391**

Dt record added:	10/22/2013
Dt rec updated:	05/31/2017
Updated By:	CHPOST
Site Code:	407689
Site Description:	Location: The site is located at 202-218 Morgan Avenue in an urban area in the north end of the Borough of Brooklyn, Kings County. To the north of the property is a warehouse, to the east and south is the English Kills, a tributary to the Newtown Creek, and to the west the site is bordered by Morgan Avenue, between Ten Eyck Street and Stagg Street. Site Features: The site property is approximately 2.8 acres in area and is currently undeveloped with no standing structures. Current Zoning and Land Use: The site is currently vacant, and is zoned for industrial use. The surrounding parcels are currently used for a combination of commercial and industrial use. Past Use of the Site: The site was previously used as a scrap metal yard. The activities related to this type of business are the apparent source of site-wide PCB contamination. Scrap activities and the presence of historic fill material are believed to be the cause of the site-wide metals contamination. Site Geology and Hydrogeology: The site is approximately 13 feet above mean sea level. Depth to groundwater is approximately 11 feet below ground surface. The nearest water body is the English Kills, a tributary to the Newtown Creek, which abuts the eastern and south sides of the site. Groundwater flow is to the southeast. The site soil is primarily fill material to the water table. Below the fill material the site is underlain by sand and gravel.
Env Problem:	The remedial plan for the site was implemented such that the site no longer presents a significant environmental threat due to the ongoing release of arsenic contamination from source areas in the soil to groundwater, as well as the high levels of PCBs and other metals, such as lead and mercury, in soil throughout the site.
Health Problem:	The site is fenced and covered with asphalt and concrete; therefore, people are not expected to come into contact with site-related contaminants in soil and groundwater unless they dig below the site cover system. People are not coming into contact with the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site buildings which are developed and occupied.
Dump:	False
Structure:	False
Lagoon:	False
Landfill:	False
Pond:	False
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	Not reported
Dell:	Not reported
Record Add:	2008-12-11 13:40:00
Record Upd:	2013-09-20 14:10:00
Updated By:	ldennist

FRITO LAY (Continued) **S109416391**

Own Op: Applicant/Requestor
Sub Type: P03
Owner Name: Keith Massa
Owner Company: Rolling Frito-Lay Sales, LP
Owner Address: 7701 Legacy Drive
Owner Addr2: Not reported
Owner City,St,Zip: Plano, TX 75024-4099
Owner Country: United States of America
Own Op: Owner
Sub Type: P03
Owner Name: Cedric Robinson
Owner Company: Rolling Frito-Lay Sales, LP
Owner Address: 7701 Legacy Drive
Owner Addr2: Not reported
Owner City,St,Zip: Plano, TX 75024-4099
Owner Country: United States of America
Own Op: Document Repository
Sub Type: P03
Owner Name: Patricia Sacco, Library Information Supervisor
Owner Company: Brooklyn Public Library Bushwick Branch
Owner Address: 340 Bushwick Avenue
Owner Addr2: Not reported
Owner City,St,Zip: Brooklyn, NY 11206
Owner Country: United States of America
HW Code: C224133
Waste Type: tetrachloroethene (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: ARSENIC
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: MERCURY
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: 1,1 Dichloroethene
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: LEAD
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: POLYCHLORINATED BIPHENYLS (PCB)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: TETRACHLOROETHYLENE (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: VINYL CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133

FRITO LAY (Continued) **S109416391**

Waste Type: DICHLOROETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: 2013000399904
Cross Ref Type Code: 25
Cross Ref Type: County Recording Identifier
Record Added Date: 2013-10-11 11:05:00
Record Updated: 2013-10-11 11:05:00
Updated By: KPSARNOW
Crossref ID: C224133
Cross Ref Type Code: 22
Cross Ref Type: BCP Site ID
Record Added Date: 2013-10-28 11:27:00
Record Updated: 2013-10-28 11:27:00
Updated By: JEBROWN
Crossref ID: A2-0622-0709
Cross Ref Type Code: 23
Cross Ref Type: Agreement/Consent Order Number
Record Added Date: 2013-10-28 11:27:00
Record Updated: 2013-10-28 11:27:00
Updated By: JEBROWN
Crossref ID: 08/20/2009
Cross Ref Type Code: 26
Cross Ref Type: Agreement/Consent Order Date
Record Added Date: 2013-10-28 11:26:00
Record Updated: 2013-10-28 11:26:00
Updated By: JEBROWN
Crossref ID: ER1609278
Cross Ref Type Code: 01
Cross Ref Type: Spill No.
Record Added Date: 2018-04-13 15:49:00
Record Updated: 2018-04-13 15:49:00
Updated By: CHPOST

Name: FRITO LAY
Address: 202-218 MORGAN AVENUE
City,State,Zip: BROOKLYN, NY 11237
Site Code: 407689
Control Name: Environmental Easement
HW Code: C224133
Control Code: J
Control Type: INST
Dt record added: 10/22/2013
Dt rec updated: 05/31/2017
Updated By: CHPOST
Site Code: 407689
Site Description: Location: The site is located at 202-218 Morgan Avenue in an urban area in the north end of the Borough of Brooklyn, Kings County. To the north of the property is a warehouse, to the east and south is the English Kills, a tributary to the Newtown Creek, and to the west the site is bordered by Morgan Avenue, between Ten Eyck Street and Stagg Street. Site Features: The site property is approximately 2.8 acres in area and is currently undeveloped with no standing structures. Current Zoning and Land Use: The site is currently vacant, and is zoned for industrial use. The surrounding parcels are currently used for a combination of commercial and industrial use. Past Use of the Site: The site was previously used as a scrap metal

FRITO LAY (Continued) **S109416391**

yard. The activities related to this type of business are the apparent source of site-wide PCB contamination. Scrap activities and the presence of historic fill material are believed to be the cause of the site-wide metals contamination. Site Geology and Hydrogeology: The site is approximately 13 feet above mean sea level. Depth to groundwater is approximately 11 feet below ground surface. The nearest water body is the English Kills, a tributary to the Newtown Creek, which abuts the eastern and south sides of the site. Groundwater flow is to the southeast. The site soil is primarily fill material to the water table. Below the fill material the site is underlain by sand and gravel.

Env Problem: The remedial plan for the site was implemented such that the site no longer presents a significant environmental threat due to the ongoing release of arsenic contamination from source areas in the soil to groundwater, as well as the high levels of PCBs and other metals, such as lead and mercury, in soil throughout the site.

Health Problem: The site is fenced and covered with asphalt and concrete; therefore, people are not expected to come into contact with site-related contaminants in soil and groundwater unless they dig below the site cover system. People are not coming into contact with the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site buildings which are developed and occupied.

Dump: False
Structure: False
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported
Record Add: 2008-12-11 13:40:00
Record Upd: 2013-09-20 14:10:00
Updated By: ldennist
Own Op: Applicant/Requestor
Sub Type: P03
Owner Name: Keith Massa
Owner Company: Rolling Frito-Lay Sales, LP
Owner Address: 7701 Legacy Drive
Owner Addr2: Not reported
Owner City,St,Zip: Plano, TX 75024-4099
Owner Country: United States of America
Own Op: Owner
Sub Type: P03
Owner Name: Cedric Robinson
Owner Company: Rolling Frito-Lay Sales, LP
Owner Address: 7701 Legacy Drive
Owner Addr2: Not reported
Owner City,St,Zip: Plano, TX 75024-4099

FRITO LAY (Continued) **S109416391**

Owner Country: United States of America
Own Op: Document Repository
Sub Type: P03
Owner Name: Patricia Sacco, Library Information Supervisor
Owner Company: Brooklyn Public Library Bushwick Branch
Owner Address: 340 Bushwick Avenue
Owner Addr2: Not reported
Owner City,St,Zip: Brooklyn, NY 11206
Owner Country: United States of America
HW Code: C224133
Waste Type: tetrachloroethene (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: ARSENIC
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: MERCURY
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: 1,1 Dichloroethene
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: LEAD
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: POLYCHLORINATED BIPHENYLS (PCB)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: TETRACHLOROETHYLENE (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: VINYL CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: DICHLOROETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: 2013000399904
Cross Ref Type Code: 25
Cross Ref Type: County Recording Identifier
Record Added Date: 2013-10-11 11:05:00
Record Updated: 2013-10-11 11:05:00
Updated By: KPSARNOW
Crossref ID: C224133
Cross Ref Type Code: 22
Cross Ref Type: BCP Site ID
Record Added Date: 2013-10-28 11:27:00
Record Updated: 2013-10-28 11:27:00
Updated By: JEBROWN

FRITO LAY (Continued) **S109416391**

Crossref ID: A2-0622-0709
Cross Ref Type Code: 33
Cross Ref Type: Agreement/Consent Order Number
Record Added Date: 2013-10-28 11:27:00
Record Updated: 2013-10-28 11:27:00
Updated By: JEBROWN
Crossref ID: 08/20/2009
Cross Ref Type Code: 26
Cross Ref Type: Agreement/Consent Order Date
Record Added Date: 2013-10-28 11:26:00
Record Updated: 2013-10-28 11:26:00
Updated By: JEBROWN
Crossref ID: ER1609278
Cross Ref Type Code: 01
Cross Ref Type: Spill No.
Record Added Date: 2018-04-13 15:49:00
Record Updated: 2018-04-13 15:49:00
Updated By: CHPOST

Name: FRITO LAY
Address: 202-218 MORGAN AVENUE
City,State,Zip: BROOKLYN, NY 11237
Site Code: 407689
Control Name: IC/EC Plan
HW Code: C224133
Control Code: 34
Control Type: INST
Dt record added: 10/22/2013
Dt rec updated: 05/31/2017
Updated By: CHPOST
Site Code: 407689
Site Description: Location: The site is located at 202-218 Morgan Avenue in an urban area in the north end of the Borough of Brooklyn, Kings County. To the north of the property is a warehouse, to the east and south is the English Kills, a tributary to the Newtown Creek, and to the west the site is bordered by Morgan Avenue, between Ten Eyck Street and Stagg Street. Site Features: The site property is approximately 2.8 acres in area and is currently undeveloped with no standing structures. Current Zoning and Land Use: The site is currently vacant, and is zoned for industrial use. The surrounding parcels are currently used for a combination of commercial and industrial use. Past Use of the Site: The site was previously used as a scrap metal yard. The activities related to this type of business are the apparent source of site-wide PCB contamination. Scrap activities and the presence of historic fill material are believed to be the cause of the site-wide metals contamination. Site Geology and Hydrogeology: The site is approximately 13 feet above mean sea level. Depth to groundwater is approximately 11 feet below ground surface. The nearest water body is the English Kills, a tributary to the Newtown Creek, which abuts the eastern and south sides of the site. Groundwater flow is to the southeast. The site soil is primarily fill material to the water table. Below the fill material the site is underlain by sand and gravel.
Env Problem: The remedial plan for the site was implemented such that the site no longer presents a significant environmental threat due to the ongoing release of arsenic contamination from source areas in the soil to groundwater, as well as the high levels of PCBs and other metals,

FRITO LAY (Continued) **S109416391**

	such as lead and mercury, in soil throughout the site.
Health Problem:	The site is fenced and covered with asphalt and concrete; therefore, people are not expected to come into contact with site-related contaminants in soil and groundwater unless they dig below the site cover system. People are not coming into contact with the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site buildings which are developed and occupied.
Dump:	False
Structure:	False
Lagoon:	False
Landfill:	False
Pond:	False
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	Not reported
Dell:	Not reported
Record Add:	2008-12-11 13:40:00
Record Upd:	2013-09-20 14:10:00
Updated By:	ldennist
Own Op:	Applicant/Requestor
Sub Type:	P03
Owner Name:	Keith Massa
Owner Company:	Rolling Frito-Lay Sales, LP
Owner Address:	7701 Legacy Drive
Owner Addr2:	Not reported
Owner City,St,Zip:	Plano, TX 75024-4099
Owner Country:	United States of America
Own Op:	Owner
Sub Type:	P03
Owner Name:	Cedric Robinson
Owner Company:	Rolling Frito-Lay Sales, LP
Owner Address:	7701 Legacy Drive
Owner Addr2:	Not reported
Owner City,St,Zip:	Plano, TX 75024-4099
Owner Country:	United States of America
Own Op:	Document Repository
Sub Type:	P03
Owner Name:	Patricia Sacco, Library Information Supervisor
Owner Company:	Brooklyn Public Library Bushwick Branch
Owner Address:	340 Bushwick Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11206
Owner Country:	United States of America
HW Code:	C224133
Waste Type:	tetrachloroethene (PCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	ARSENIC

FRITO LAY (Continued) **S109416391**

Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: MERCURY
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: 1,1 Dichloroethene
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: LEAD
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: POLYCHLORINATED BIPHENYLS (PCB)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: TETRACHLOROETHYLENE (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: VINYL CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: DICHLOROETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: 2013000399904
Cross Ref Type Code: 25
Cross Ref Type: County Recording Identifier
Record Added Date: 2013-10-11 11:05:00
Record Updated: 2013-10-11 11:05:00
Updated By: KPSARNOW
Crossref ID: C224133
Cross Ref Type Code: 22
Cross Ref Type: BCP Site ID
Record Added Date: 2013-10-28 11:27:00
Record Updated: 2013-10-28 11:27:00
Updated By: JEBROWN
Crossref ID: A2-0622-0709
Cross Ref Type Code: 23
Cross Ref Type: Agreement/Consent Order Number
Record Added Date: 2013-10-28 11:27:00
Record Updated: 2013-10-28 11:27:00
Updated By: JEBROWN
Crossref ID: 08/20/2009
Cross Ref Type Code: 26
Cross Ref Type: Agreement/Consent Order Date
Record Added Date: 2013-10-28 11:26:00
Record Updated: 2013-10-28 11:26:00
Updated By: JEBROWN
Crossref ID: ER1609278
Cross Ref Type Code: 01
Cross Ref Type: Spill No.

FRITO LAY (Continued) **S109416391**

Record Added Date: 2018-04-13 15:49:00
Record Updated: 2018-04-13 15:49:00
Updated By: CHPOST

Name: FRITO LAY
Address: 202-218 MORGAN AVENUE
City,State,Zip: BROOKLYN, NY 11237
Site Code: 407689
Control Name: O&M Plan
HW Code: C224133
Control Code: 33
Control Type: INST
Dt record added: 10/22/2013
Dt rec updated: 05/31/2017
Updated By: CHPOST
Site Code: 407689
Site Description: Location: The site is located at 202-218 Morgan Avenue in an urban area in the north end of the Borough of Brooklyn, Kings County. To the north of the property is a warehouse, to the east and south is the English Kills, a tributary to the Newtown Creek, and to the west the site is bordered by Morgan Avenue, between Ten Eyck Street and Stagg Street. Site Features: The site property is approximately 2.8 acres in area and is currently undeveloped with no standing structures. Current Zoning and Land Use: The site is currently vacant, and is zoned for industrial use. The surrounding parcels are currently used for a combination of commercial and industrial use. Past Use of the Site: The site was previously used as a scrap metal yard. The activities related to this type of business are the apparent source of site-wide PCB contamination. Scrap activities and the presence of historic fill material are believed to be the cause of the site-wide metals contamination. Site Geology and Hydrogeology: The site is approximately 13 feet above mean sea level. Depth to groundwater is approximately 11 feet below ground surface. The nearest water body is the English Kills, a tributary to the Newtown Creek, which abuts the eastern and south sides of the site. Groundwater flow is to the southeast. The site soil is primarily fill material to the water table. Below the fill material the site is underlain by sand and gravel.
Env Problem: The remedial plan for the site was implemented such that the site no longer presents a significant environmental threat due to the ongoing release of arsenic contamination from source areas in the soil to groundwater, as well as the high levels of PCBs and other metals, such as lead and mercury, in soil throughout the site.
Health Problem: The site is fenced and covered with asphalt and concrete; therefore, people are not expected to come into contact with site-related contaminants in soil and groundwater unless they dig below the site cover system. People are not coming into contact with the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site buildings which are developed and occupied.

FRITO LAY (Continued) **S109416391**

Dump:	False
Structure:	False
Lagoon:	False
Landfill:	False
Pond:	False
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	Not reported
Dell:	Not reported
Record Add:	2008-12-11 13:40:00
Record Upd:	2013-09-20 14:10:00
Updated By:	ldennist
Own Op:	Applicant/Requestor
Sub Type:	P03
Owner Name:	Keith Massa
Owner Company:	Rolling Frito-Lay Sales, LP
Owner Address:	7701 Legacy Drive
Owner Addr2:	Not reported
Owner City,St,Zip:	Plano, TX 75024-4099
Owner Country:	United States of America
Own Op:	Owner
Sub Type:	P03
Owner Name:	Cedric Robinson
Owner Company:	Rolling Frito-Lay Sales, LP
Owner Address:	7701 Legacy Drive
Owner Addr2:	Not reported
Owner City,St,Zip:	Plano, TX 75024-4099
Owner Country:	United States of America
Own Op:	Document Repository
Sub Type:	P03
Owner Name:	Patricia Sacco, Library Information Supervisor
Owner Company:	Brooklyn Public Library Bushwick Branch
Owner Address:	340 Bushwick Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11206
Owner Country:	United States of America
HW Code:	C224133
Waste Type:	tetrachloroethene (PCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	ARSENIC
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	MERCURY
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	1,1 Dichloroethene
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	LEAD
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133

FRITO LAY (Continued) **S109416391**

Waste Type: POLYCHLORINATED BIPHENYLS (PCB)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: TETRACHLOROETHYLENE (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: VINYL CHLORIDE
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: C224133
Waste Type: DICHLOROETHYLENE
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: 2013000399904
Cross Ref Type Code: 25
Cross Ref Type: County Recording Identifier
Record Added Date: 2013-10-11 11:05:00
Record Updated: 2013-10-11 11:05:00
Updated By: KPSARNOW
Crossref ID: C224133
Cross Ref Type Code: 22
Cross Ref Type: BCP Site ID
Record Added Date: 2013-10-28 11:27:00
Record Updated: 2013-10-28 11:27:00
Updated By: JEBROWN
Crossref ID: A2-0622-0709
Cross Ref Type Code: 23
Cross Ref Type: Agreement/Consent Order Number
Record Added Date: 2013-10-28 11:27:00
Record Updated: 2013-10-28 11:27:00
Updated By: JEBROWN
Crossref ID: 08/20/2009
Cross Ref Type Code: 26
Cross Ref Type: Agreement/Consent Order Date
Record Added Date: 2013-10-28 11:26:00
Record Updated: 2013-10-28 11:26:00
Updated By: JEBROWN
Crossref ID: ER1609278
Cross Ref Type Code: 01
Cross Ref Type: Spill No.
Record Added Date: 2018-04-13 15:49:00
Record Updated: 2018-04-13 15:49:00
Updated By: CHPOST

BROWNFIELDS:
Name: FRITO LAY
Address: 202-218 MORGAN AVENUE
City,State,Zip: BROOKLYN, NY 11237
Program: BCP
Site Code: 407689
Acres: 2.76
HW Code: C224133
SWIS: 2401
Town: New York City
Record Added Date: 12/11/2008

FRITO LAY (Continued) **S109416391**

Record Updated Date:	03/20/2019
Update By:	GWBURKE
Site Description:	Location: The site is located at 202-218 Morgan Avenue in an urban area in the north end of the Borough of Brooklyn, Kings County. To the north of the property is a warehouse, to the east and south is the English Kills, a tributary to the Newtown Creek, and to the west the site is bordered by Morgan Avenue, between Ten Eyck Street and Stagg Street. Site Features: The site property is approximately 2.8 acres in area and is currently undeveloped with no standing structures. Current Zoning and Land Use: The site is currently vacant, and is zoned for industrial use. The surrounding parcels are currently used for a combination of commercial and industrial use. Past Use of the Site: The site was previously used as a scrap metal yard. The activities related to this type of business are the apparent source of site-wide PCB contamination. Scrap activities and the presence of historic fill material are believed to be the cause of the site-wide metals contamination. Site Geology and Hydrogeology: The site is approximately 13 feet above mean sea level. Depth to groundwater is approximately 11 feet below ground surface. The nearest water body is the English Kills, a tributary to the Newtown Creek, which abuts the eastern and south sides of the site. Groundwater flow is to the southeast. The site soil is primarily fill material to the water table. Below the fill material the site is underlain by sand and gravel.
Env Problem:	The remedial plan for the site was implemented such that the site no longer presents a significant environmental threat due to the ongoing release of arsenic contamination from source areas in the soil to groundwater, as well as the high levels of PCBs and other metals, such as lead and mercury, in soil throughout the site.
Health Problem:	The site is fenced and covered with asphalt and concrete; therefore, people are not expected to come into contact with site-related contaminants in soil and groundwater unless they dig below the site cover system. People are not coming into contact with the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The potential exists for the inhalation of site contaminants due to soil vapor intrusion for any future on-site buildings which are developed and occupied.
Dump:	False
Structure:	False
Lagoon:	False
Landfill:	False
Pond:	False
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	Not reported
Dell:	Not reported
Record Add:	2008-12-11 13:40:00
Record Upd:	2013-09-20 14:10:00
Updated By:	ldennist
Own Op:	Applicant/Requestor
Sub Type:	P03
Owner Name:	Keith Massa

FRITO LAY (Continued) **S109416391**

Owner Company:	Rolling Frito-Lay Sales, LP
Owner Address:	7701 Legacy Drive
Owner Addr2:	Not reported
Owner City,St,Zip:	Plano, TX 75024-4099
Owner Country:	United States of America
Own Op:	Owner
Sub Type:	P03
Owner Name:	Cedric Robinson
Owner Company:	Rolling Frito-Lay Sales, LP
Owner Address:	7701 Legacy Drive
Owner Addr2:	Not reported
Owner City,St,Zip:	Plano, TX 75024-4099
Owner Country:	United States of America
Own Op:	Document Repository
Sub Type:	P03
Owner Name:	Patricia Sacco, Library Information Supervisor
Owner Company:	Brooklyn Public Library Bushwick Branch
Owner Address:	340 Bushwick Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11206
Owner Country:	United States of America
HW Code:	C224133
Waste Type:	tetrachloroethene (PCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	ARSENIC
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	MERCURY
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	1,1 Dichloroethene
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	LEAD
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	POLYCHLORINATED BIPHENYLS (PCB)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	TETRACHLOROETHYLENE (PCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	VINYL CHLORIDE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	C224133
Waste Type:	DICHLOROETHYLENE
Waste Quantity:	UNKNOWN
Waste Code:	Not reported

FRITO LAY (Continued) **S109416391**

Crossref ID:	2013000399904
Cross Ref Type Code:	25
Cross Ref Type:	County Recording Identifier
Record Added Date:	2013-10-11 11:05:00
Record Updated:	2013-10-11 11:05:00
Updated By:	KPSARNOW
Crossref ID:	C224133
Cross Ref Type Code:	22
Cross Ref Type:	BCP Site ID
Record Added Date:	2013-10-28 11:27:00
Record Updated:	2013-10-28 11:27:00
Updated By:	JEBROWN
Crossref ID:	A2-0622-0709
Cross Ref Type Code:	23
Cross Ref Type:	Agreement/Consent Order Number
Record Added Date:	2013-10-28 11:27:00
Record Updated:	2013-10-28 11:27:00
Updated By:	JEBROWN
Crossref ID:	08/20/2009
Cross Ref Type Code:	26
Cross Ref Type:	Agreement/Consent Order Date
Record Added Date:	2013-10-28 11:26:00
Record Updated:	2013-10-28 11:26:00
Updated By:	JEBROWN
Crossref ID:	ER1609278
Cross Ref Type Code:	01
Cross Ref Type:	Spill No.
Record Added Date:	2018-04-13 15:49:00
Record Updated:	2018-04-13 15:49:00
Updated By:	CHPOST

AN273 **FRITO-LAY** **NY SWF/LF** **S108635814**
NW **202-218 MORGAN AVE** **NY Spills** **N/A**
1/4-1/2 **BROOKLYN, NY 11237** **NY MANIFEST**
0.280 mi.
1481 ft. **Site 2 of 2 in cluster AN**

Relative:
Lower

Actual:
13 ft.

SWF/LF:

Flag:	INACTIVE
Region Code:	2
Phone Number:	7183660717
Owner Name:	Not reported
Owner Type:	Not reported
Owner Address:	Not reported
Owner Addr2:	Not reported
Owner City,St,Zip:	Not reported
Owner Email:	Not reported
Owner Phone:	Not reported
Contact Name:	STANLEY K. HORNG
Contact Address:	Not reported
Contact Addr2:	Not reported
Contact City,St,Zip:	Not reported
Contact Email:	Not reported
Contact Phone:	Not reported
Activity Desc:	z Retired - Transfer station - permit
Activity Number:	[24T60]
Active:	No
East Coordinate:	589900

FRITO-LAY (Continued) **S108635814**

North Coordinate: 4507500
Accuracy Code: Not reported
Regulatory Status: Not reported
Waste Type: Not reported
Authorization #: 2-6101-00015
Authorization Date: Not reported
Expiration Date: Not reported
Operator Name: Not reported
Operator Type: Not reported
Laste Date: Not reported

SPILLS:

Name:	DRUM RUN
Address:	202 MORGAN AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0700119 / 2007-05-23
Facility ID:	0700119
Facility Type:	ER
DER Facility ID:	328885
Site ID:	379402
DEC Region:	2
Spill Cause:	Abandoned Drums
Spill Class:	C3
SWIS:	2401
Spill Date:	2007-04-04
Investigator:	SFRAHMAN
Referred To:	Not reported
Reported to Dept:	2007-04-04
CID:	444
Water Affected:	Not reported
Spill Source:	Institutional, Educational, Gov., Other
Spill Notifier:	Other
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2007-04-04
Spill Record Last Update:	2007-05-23
Spiller Name:	VICTOR LEE
Spiller Company:	ON SIDEWALK
Spiller Address:	202 MORGAN AV
Spiller Company:	001
Contact Name:	VICTOR LEE
DEC Memo:	"add to next drum run 05/23/07 Drum was not found on 05/22/07."
Remarks:	"DRUM ON SIDEWALK NEEDS TO BE PICKED UP"

All Materials:

Site ID:	379402
Operable Unit ID:	1136884
Operable Unit:	01
Material ID:	2126828
Material Code:	0022
Material Name:	waste oil/used oil
Case No.:	Not reported
Material FA:	Petroleum

FRITO-LAY (Continued) **S108635814**

Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

NY MANIFEST:

Country:	USA
EPA ID:	NYR000188193
Facility Status:	Not reported
Location Address 1:	202 MORGAN AVENUE
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYR000188193
Mailing Name:	FRITO-LAY
Mailing Contact:	BRYAN TISKOWITZ
Mailing Address 1:	202-218 MORGAN AVE
Mailing Address 2:	Not reported
Mailing City:	BROOKLYN
Mailing State:	NY
Mailing Zip:	11237
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	Not reported

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2013
Trans1 State ID:	NYR000159962
Trans2 State ID:	Not reported
Generator Ship Date:	03/06/2013
Trans1 Recv Date:	03/06/2013
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	03/07/2013
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYR000188193
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NYD049836679
TSDF ID 2:	Not reported
Manifest Tracking Number:	009979480JJK
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	Y
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N

FRITO-LAY (Continued) **S108635814**

Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H132
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	34519
Units:	K - Kilograms (2.2 pounds)
Number of Containers:	1
Container Type:	DT - Dump trucks
Handling Method:	L Landfill.
Specific Gravity:	1
Waste Code:	Not reported
Waste Code 1_2:	B007
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

AO274 **147 NOLL STREET** **NY LTANKS** **S104782243**
South **147 NOLL ST** **N/A**
1/4-1/2 **BROOKLYN, NY**
0.285 mi.
1503 ft. **Site 1 of 2 in cluster AO**

Relative: LTANKS:
Higher

Actual:
36 ft.

Name:	147 NOLL STREET
Address:	147 NOLL ST
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0006735 / 2002-12-06
Facility ID:	0006735
Site ID:	234507
Spill Date:	2000-09-07
Spill Cause:	Tank Failure
Spill Source:	Institutional, Educational, Gov., Other
Spill Class:	B3
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	SIGONA
Referred To:	Not reported
Reported to Dept:	2000-09-07
CID:	205
Water Affected:	Not reported
Spill Notifier:	Responsible Party
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0

147 NOLL STREET (Continued) **S104782243**

Date Entered In Computer:	2000-09-07
Spill Record Last Update:	2002-12-06
Spiller Name:	HELEN GITELSON
Spiller Company:	HPD
Spiller Address:	100 GOLD STREET
Spiller County:	001
Spiller Contact:	CALLER
Spiller Phone:	Not reported
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	193174
DEC Memo:	""
Remarks:	"CALLER DOING WORK ON VACANT LOT FOUND CONTAMINATION FROM 5,000 UST OIL TANK."

All Materials:

Site ID:	234507
Operable Unit ID:	827683
Operable Unit:	01
Material ID:	547843
Material Code:	0030A
Material Name:	lead
Case No.:	07439921
Material FA:	Hazardous Material
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

Site ID:	234507
Operable Unit ID:	827683
Operable Unit:	01
Material ID:	547845
Material Code:	0003A
Material Name:	#6 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

Site ID:	234507
Operable Unit ID:	827683
Operable Unit:	01
Material ID:	547846
Material Code:	0065A
Material Name:	unknown non-petro/non-haz material
Case No.:	Not reported
Material FA:	Other
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

Site ID:	234507
Operable Unit ID:	827683
Operable Unit:	01

147 NOLL STREET (Continued) **S104782243**

Material ID:	547844
Material Code:	0040A
Material Name:	tetrachloroethene (PCE)
Case No.:	00127184
Material FA:	Hazardous Material
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

275
ENE
1/4-1/2
0.293 mi.
1549 ft.

CAL OSTLUND INC
185 RANDOLPH STREET
BROOKLYN, NY 11237

NY LTANKS **1000126948**
RCRA NonGen / NLR **NYD001341908**
FINDS
ECHO
NY MANIFEST

Relative:
Lower

Actual:
14 ft.

LTANKS:

Name:	X
Address:	185 RANDOLPH STREET
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0212548 / 2005-12-07
Facility ID:	0212548
Site ID:	120041
Spill Date:	2003-03-20
Spill Cause:	Tank Test Failure
Spill Source:	Commercial/Industrial
Spill Class:	B3
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	rmpiper
Referred To:	Not reported
Reported to Dept:	2003-03-20
CID:	422
Water Affected:	Not reported
Spill Notifier:	Responsible Party
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	True
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	2003-03-20
Spill Record Last Update:	2005-12-07
Spiller Name:	Not reported
Spiller Company:	SAME
Spiller Address:	Not reported
Spiller County:	999
Spiller Contact:	ISSAC MUNGRA
Spiller Phone:	(718) 857-9800
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	104250
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was SAWYER 3/20/03, AUSTIN, DDO - TANK FAILED LOCATOR PLUS TEST (PASS/FAIL) - SENT OUT TTF LETTER 1/7/04-Vought-Spill transferred from Vought to Austin. 01/27/04 - Sawyer - Spill transferred from Austin to Sawyer. 11/25/05- DEc Piper sent out another ttf letter to Ken Kasper Mid-County Mechanical Inc. 121-06 89th Ave, Richmond hill,

CAL OSTLUND INC (Continued) **1000126948**

NY 11418 12/7/05- DEC Piper recieved sufficient evidence to close spill. Minor repairs made to tank, specifically vent line. No contaminated soil found during uncovering of top of tank. See e-docs if warranted."

Remarks: ""

All TTF:

Facility ID:	0212548
Spill Number:	0212548
Spill Tank Test:	1528116
Site ID:	120041
Tank Number:	Not reported
Tank Size:	3000
Material:	0001
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	99
Test Method 2:	Alternate Test per former 613.5(a)(2)(v)
Leak Rate:	.00
Gross Fail:	Not reported
Modified By:	Spills
Last Modified Date:	Not reported

All Materials:

Site ID:	120041
Operable Unit ID:	866004
Operable Unit:	01
Material ID:	512280
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

RCRA NonGen / NLR:

Date form received by agency:	01/01/2007
Facility name:	CAL OSTLUND INC
Facility address:	185 RANDOLPH ST BROOKLYN, NY 11237-1306
EPA ID:	NYD001341908
Mailing address:	PO BOX 412 BROOKLYN, NY 11237
Contact:	Not reported
Contact address:	PO BOX 412 BROOKLYN, NY 11237
Contact country:	US
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	02
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

CAL OSTLUND INC (Continued) **1000126948**

Owner/Operator Summary:
Owner/operator name: CAL OSTLUND
Owner/operator address: NOT REQUIRED
NOT REQUIRED, WY 99999
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: CAL OSTLUND
Owner/operator address: NOT REQUIRED
NOT REQUIRED, WY 99999
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2006
Site name: CAL OSTLUND INC
Classification: Not a generator, verified

Date form received by agency: 07/08/1999
Site name: CAL OSTLUND INC
Classification: Not a generator, verified

Date form received by agency: 12/14/1989
Site name: CAL OSTLUND INC
Classification: Small Quantity Generator

CAL OSTLUND INC (Continued) **1000126948**

Hazardous Waste Summary:

. Waste code: D000
. Waste name: Not Defined

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Violation Status: No violations found

FINDS:

Registry ID: 110004333908

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

FIS (New York - Facility Information System) is New York's Department of Environmental Conservation (DEC) information system for tracking environmental facility information found across the State.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid: 1000126948
Registry ID: 110004333908
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110004333908

CAL OSTLUND INC (Continued) **1000126948**

NY MANIFEST:

Country:	USA
EPA ID:	NYD001341908
Facility Status:	Not reported
Location Address 1:	185 RANDOLPH ST
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYD001341908
Mailing Name:	CAL OSTLUND INC
Mailing Contact:	THOMAS ROWINSKI
Mailing Address 1:	185 RANDOLPH STREET
Mailing Address 2:	Not reported
Mailing City:	BROOKLYN
Mailing State:	NY
Mailing Zip:	11237
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	7184566483

NY MANIFEST:

Document ID:	NJA1622904
Manifest Status:	C
seq:	Not reported
Year:	1994
Trans1 State ID:	NJDEPE086
Trans2 State ID:	Not reported
Generator Ship Date:	04/08/1994
Trans1 Recv Date:	04/08/1994
Trans2 Recv Date:	/ /
TSD Site Recv Date:	04/15/1994
Part A Recv Date:	04/20/1994
Part B Recv Date:	04/27/1994
Generator EPA ID:	NYD001341908
Trans1 EPA ID:	ILD984908202
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD002182897
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	F005 - UNKNOWN

CAL OSTLUND INC (Continued) **1000126948**

Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	00376
Units:	P - Pounds
Number of Containers:	001
Container Type:	DM - Metal drums, barrels
Handling Method:	B Incineration, heat recovery, burning.
Specific Gravity:	100

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

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276 **APT BUILDING TANK** **NY LTANKS** **S106972250**
North **85 MEADOW STREET** **N/A**
1/4-1/2 **BROOKLYN, NY**
0.298 mi.
1571 ft.

Relative: **Lower**

Actual: **6 ft.**

LTANKS:

Name:	APT BUILDING TANK
Address:	85 MEADOW STREET
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0504662 / 2005-12-09
Facility ID:	0504662
Site ID:	349596
Spill Date:	2005-07-19
Spill Cause:	Tank Failure
Spill Source:	Institutional, Educational, Gov., Other
Spill Class:	D4
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	SFRAHMAN
Referred To:	Not reported
Reported to Dept:	2005-07-19
CID:	444
Water Affected:	Not reported
Spill Notifier:	Other
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	2005-07-20
Spill Record Last Update:	2005-12-09
Spiller Name:	MR FRIEDMAN
Spiller Company:	GARAGE
Spiller Address:	84 MEADOW STREET
Spiller County:	001
Spiller Contact:	MR FRIEDMAN
Spiller Phone:	(718) 614-1896
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	296031
DEC Memo:	"Sangesland spoke to Vicky at Island Tank. This is a heating oil tank

APT BUILDING TANK (Continued) **S106972250**

in the garage area of an apartment building. Island Tank is already doing the dig out and knows to take the end point samples. No Tank Test Failure or Contaminated Soil letter was sent. 09.22.05 SR// Sharif spoke with Mr. Friedman . He informed me Island Tank took care of the problem. I tried to hold Vicky but not able. 12/09/05-Sharif// I rec'd report prepared by Island Tank.The UST was 3000 gallons and was removed from the property as clean scrap metal.Six end point samples were taken from the UST cavity. Approx. 26 yards of contaminated soil was removed from the hole.Soil analytical result came back almost clean with no significant contaminants left at the site.Disposal manifests are provided. NFA action required."

Remarks: "LINES ON 3000 GALLON TANK ARE ROTTED AND THEY NEED TO REMOVE SOME CONTAMINATED SOIL"

All Materials:

Site ID:	349596
Operable Unit ID:	1107185
Operable Unit:	01
Material ID:	2097080
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	Not reported
Units:	G
Recovered:	.00
Oxygenate:	Not reported

AO277 **GALANTE; INC.** **NY SWRCY** **U003386987**
South **144 NOLL STREET** **N/A**
1/4-1/2 **BROOKLYN, NY 11206**
0.307 mi.
1620 ft. **Site 2 of 2 in cluster AO**

Relative:
Higher

Actual:
39 ft.

SWRCY:

Region:	2
Facility Address 2:	Not reported
Phone Number:	7184974800
Owner Type:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Owner Email:	Not reported
Owner Phone:	Not reported
Contact Name:	WILLAIM GIOVE; JR.
Contact Address:	Not reported
Contact Address 2:	Not reported
Contact City,St,Zip:	Not reported
Contact Email:	Not reported
Contact Phone:	Not reported
Activity Desc:	z Retired - RHRF - registration
Activity Number:	[24M75]
Active:	No
East Coordinate:	590200
North Coordinate:	4506300
Accuracy Code:	Not reported

GALANTE; INC. (Continued) **U003386987**

Regulatory Status: Permit
Permit #: 2-6104-00119
Auth. Date: Not reported
Expiration Date: Not reported
Waste Types: Not reported
Operator Name: Not reported
Operator Type: Not reported
Last Date: Not reported

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278 SSW 1/4-1/2 0.311 mi. 1641 ft. **114 FORREST STREET** **NY LTANKS** **S107781792**
114 FORREST STREET **N/A**
BROOKLYN, NY

Relative: Higher

Actual: 34 ft.

LTANKS:

Name:	114 FORREST STREET
Address:	114 FORREST STREET
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0302890 / 2003-10-30
Facility ID:	0302890
Site ID:	200453
Spill Date:	2003-06-18
Spill Cause:	Tank Test Failure
Spill Source:	Private Dwelling
Spill Class:	B3
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	TJDEMEO
Referred To:	Not reported
Reported to Dept:	2003-06-18
CID:	204
Water Affected:	Not reported
Spill Notifier:	Tank Tester
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	2003-06-18
Spill Record Last Update:	2007-07-30
Spiller Name:	MR SCHWARTZ
Spiller Company:	114 FOREST STREET
Spiller Address:	114 FOREST STREET
Spiller County:	001
Spiller Contact:	KRISTEN CIABURRI
Spiller Phone:	(718) 981-5710
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	166810
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was DEMEO Sangesland DDO Tank Test Failure letter sent to: Schwartz Brothers Realty 114 Forest Street Brooklyn, NY 11206 10/30/03 TJD Passing tank test submitted. Vent line repaired. Spill closed."
Remarks:	"TANK TEST FAILURE"

All TTF:

Facility ID:	0302890

114 FORREST STREET (Continued) **S107781792**

Spill Number:	0302890
Spill Tank Test:	1528462
Site ID:	200453
Tank Number:	1
Tank Size:	2000
Material:	0001
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	03
Test Method 2:	Horner EZ Check I or II
Leak Rate:	.00
Gross Fail:	Not reported
Modified By:	Spills
Last Modified Date:	Not reported

All Materials:

Site ID:	200453
Operable Unit ID:	870620
Operable Unit:	01
Material ID:	507336
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

279
SSW
1/4-1/2
0.320 mi.
1687 ft.

RAM AUTO WRECKERS **NY SWF/LF** **S108146078**
230 COOK STREET **N/A**
BROOKLYN, NY 11206

Relative:
Higher

Actual:
26 ft.

SWF/LF:

Flag:	INACTIVE
Region Code:	2
Phone Number:	Not reported
Owner Name:	Not reported
Owner Type:	Not reported
Owner Address:	Not reported
Owner Addr2:	Not reported
Owner City,St,Zip:	Not reported
Owner Email:	Not reported
Owner Phone:	Not reported
Contact Name:	Not reported
Contact Address:	Not reported
Contact Addr2:	Not reported
Contact City,St,Zip:	Not reported
Contact Email:	Not reported
Contact Phone:	Not reported
Activity Desc:	z Retired - Vehicle Dismantling Facility
Activity Number:	Not reported

RAM AUTO WRECKERS (Continued) **S108146078**

Active:	No
East Coordinate:	590124
North Coordinate:	4506353
Accuracy Code:	Not reported
Regulatory Status:	Not reported
Waste Type:	Not reported
Authorization #:	Not reported
Authorization Date:	Not reported
Expiration Date:	Not reported
Operator Name:	Not reported
Operator Type:	Not reported
Laste Date:	Not reported

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280 NW 1/4-1/2 0.334 mi. 1764 ft.

APARTMENT BUILDING **NY LTANKS** **S107789405**
35 MEADOW STREET **N/A**
BROOKLYN, NY

Relative: Higher

Actual: 20 ft.

LTANKS:

Name:	APARTMENT BUILDING
Address:	35 MEADOW STREET
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0601731 / 2006-08-29
Facility ID:	0601731
Site ID:	364030
Spill Date:	2006-05-16
Spill Cause:	Tank Test Failure
Spill Source:	Private Dwelling
Spill Class:	C4
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	HRPATEL
Referred To:	Not reported
Reported to Dept:	2006-05-16
CID:	408
Water Affected:	Not reported
Spill Notifier:	Tank Tester
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	2006-05-16
Spill Record Last Update:	2006-08-29
Spiller Name:	DEREK DENCKLA
Spiller Company:	APARTMENT BUILDING
Spiller Address:	35 MEADOW STREET
Spiller County:	001
Spiller Contact:	DEREK DENCKLA
Spiller Phone:	(917) 674-9040
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	314232
DEC Memo:	"05/17/06-Hiralkumar Patel. Spoke to Jim at Protest. it was 1500 gal AST. tank was cleaned in past and doesn't have manhole. and Jim found dry leak and thinks it is from patch on top of tank. he hasn't find any oil stains on floor. he has send proposal to owner and planning

APARTMENT BUILDING (Continued) **S107789405**

to clean tank and to put manhole on tank. haven't found PBS number. Spoke to Derek. he is process of buying this property and gave current owner's name and number. Joseph Heimlich (718) 381-2405 As per Derek, he has closing of this property on Jun 30 2006. once he will get property on his name, he will remove tank and system. owner is not using tank currently. asked him to send tank test results and letter signed by current owner and purchaser stating that they will remove tank after closing and tank is not in use currently by end of tomorrow. told Derek that as this tank is more than 1100 gal capacity, it has to be registered with PBS eventhought they are planning to remove it after Jun. Spoke to Joseph. as per him, he has turn off boiler and tank is not in use currently. tank has oil less than half of the volume. told Joseph that if Department receive letter from him and Derek, Department can wait till they remove tank. but tank has to registered with PBS now. send out letter with tank registration requirement. faxed to Joseph and Derek. Joseph Heimlich 35 Meadow Street Brooklyn, NY 11206 FAX (718) 381-2875 05/19/06-Hiralkumar Patel. Received letter from Joseph and Derek. abstract: - owner is selling property and property is set to close on or about July 30, 2006. - heating season is over and boiler is currently turned off and will remain turned off through contract closing date - based on tank test, owner has cancelled all scheduled oil deliveries and suspended oil delivery service until further notice. 08/01/06-Hiralkumar Patel. spoke with Derek. he is no longer in process of buying this property. spoke with Joseph. owner has removed oil, clean tank and sealed it back. he didn't do any isolation test or system test after tank cleaning. asked Joseph to do system test again. he will call ABC tank for further testing. 08/02/06-Hiralkumar Patel. received call from Robert from ABC Tank. they will do system test probably next week. Robert will call once he gets test result. 08/29/06-Hiralkumar Patel. spoke with Donna at ABC Tank. they have changed rubber gasket on tank. she doesn't have any information about system test. she will check and call back. received call from Donna. she got test result and will fax it. got passing system test in fax. tank is registered now. PBS#: 2-610289 based on available informations, case closed."

Remarks: ""

All Materials:

Site ID:	364030
Operable Unit ID:	1122083
Operable Unit:	01
Material ID:	2111568
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

281
NNW
1/4-1/2
0.338 mi.
1785 ft.

METRO NEW YORK SERVICE CENTER
222 MORGAN AVE
BROOKLYN, NY 11237

NY SWF/LF
NY LTANKS
NY SPDES

S103592538
N/A

Relative:
Lower

Actual:
12 ft.

SWF/LF:

Flag:	INACTIVE
Region Code:	2
Phone Number:	7184973100
Owner Name:	Not reported
Owner Type:	Not reported
Owner Address:	Not reported
Owner Addr2:	Not reported
Owner City,St,Zip:	Not reported
Owner Email:	Not reported
Owner Phone:	Not reported
Contact Name:	LOUIS D'AMBROSIO
Contact Address:	Not reported
Contact Addr2:	Not reported
Contact City,St,Zip:	Not reported
Contact Email:	Not reported
Contact Phone:	Not reported
Activity Desc:	z Retired - C&D processing - registration
Activity Number:	[24W76]
Active:	No
East Coordinate:	590116
North Coordinate:	4507117
Accuracy Code:	Not reported
Regulatory Status:	Not reported
Waste Type:	Not reported
Authorization #:	2-6104-00097
Authorization Date:	Not reported
Expiration Date:	Not reported
Operator Name:	Not reported
Operator Type:	Not reported
Laste Date:	Not reported

Flag:	INACTIVE
Region Code:	2
Phone Number:	7184973100
Owner Name:	Not reported
Owner Type:	Not reported
Owner Address:	Not reported
Owner Addr2:	Not reported
Owner City,St,Zip:	Not reported
Owner Email:	Not reported
Owner Phone:	Not reported
Contact Name:	LOUIS D'AMBROSIO
Contact Address:	Not reported
Contact Addr2:	Not reported
Contact City,St,Zip:	Not reported
Contact Email:	Not reported
Contact Phone:	Not reported
Activity Desc:	z Retired - Transfer station - permit
Activity Number:	[24T76]
Active:	No
East Coordinate:	590116
North Coordinate:	4507117

METRO NEW YORK SERVICE CENTER (Continued) **S103592538**

Accuracy Code: Not reported
Regulatory Status: Not reported
Waste Type: Not reported
Authorization #: 2-6104-00097
Authorization Date: Not reported
Expiration Date: Not reported
Operator Name: Not reported
Operator Type: Not reported
Laste Date: Not reported

LTANKS:

Name:	QUATTRO PROPERTIES
Address:	222 MORGAN AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0009585 / 2003-08-28
Facility ID:	0009585
Site ID:	302888
Spill Date:	2000-11-21
Spill Cause:	Tank Failure
Spill Source:	Institutional, Educational, Gov., Other
Spill Class:	B3
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	SIGONA
Referred To:	Not reported
Reported to Dept:	2000-11-21
CID:	205
Water Affected:	Not reported
Spill Notifier:	Responsible Party
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	True
Remediation Phase:	0
Date Entered In Computer:	2000-11-21
Spill Record Last Update:	2003-08-28
Spiller Name:	JAMES JULIANO, PROP MGR
Spiller Company:	QUATTRO PROPERTIES, LLC
Spiller Address:	213-19 99TH AVENUE
Spiller County:	001
Spiller Contact:	CALLER
Spiller Phone:	Not reported
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	244717
DEC Memo:	""
Remarks:	"CALLER PULLED TANK AND FOUND CONTAMINATED SOIL.WOULD LIKE A CALL FROM DEC 11-21-00 TIS STRANGE BUT R. SPADALIK IS NO LONGER AT F&N WHEN I CALLED THE TEL#AND EXT,THATS WHAT THE PERSON AT THAT TEL#SAID ROBERT.L"

All Materials:

Site ID:	302888
Operable Unit ID:	830684
Operable Unit:	01
Material ID:	543525
Material Code:	0008

METRO NEW YORK SERVICE CENTER (Continued) **S103592538**

Material Name:	diesel
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

Name:	222 MORGAN AVENUE
Address:	222 MORGAN AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9312206 / 1994-01-17
Facility ID:	9312206
Site ID:	302889
Spill Date:	1994-01-17
Spill Cause:	Tank Overfill
Spill Source:	Commercial/Industrial
Spill Class:	C3
Cleanup Ceased:	1994-01-17
SWIS:	2401
Investigator:	SIGONA
Referred To:	Not reported
Reported to Dept:	1994-01-17
CID:	Not reported
Water Affected:	Not reported
Spill Notifier:	Fire Department
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	1994-01-20
Spill Record Last Update:	2003-08-28
Spiller Name:	Not reported
Spiller Company:	222 MORGAN AVENUE
Spiller Address:	222 MORGAN AVENUE
Spiller County:	001
Spiller Contact:	Not reported
Spiller Phone:	Not reported
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	244717
DEC Memo:	""
Remarks:	"FIRE @ PLANT NOTIFIED DEP, UNK. ACTIONS. 11/18 UPDATE ROBERT KEPICH / DEP 595-6777 / 50-60 GAL DIESSEL HYDRAULIC NO CALL BACK. 100PM SPOKE TO ENZO HE SAID FIRE DIESSEL HYDRAULIC OIL P/U DISPOSE INDRUM"

All Materials:

Site ID:	302889
Operable Unit ID:	990817
Operable Unit:	01
Material ID:	391198
Material Code:	0022
Material Name:	waste oil/used oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	20.00

METRO NEW YORK SERVICE CENTER (Continued) **S103592538**

Units: G
Recovered: .00
Oxygenate: Not reported

SPDES:

Permit Number: NYR00E651
State-Region: 02
Expiration Date: 09/30/2017
Current Major Minor Status: Minor
Primary Facility SIC Code: 4213
State Water Body Name: ENGLISH KILLS WATERWAY
Limit Set Status Flag: Active
Total Actual Average Flow(MGD): Not reported
Total App Design Flow(MGD): Not reported
UDF1: Not reported
Lat/Long: +40.712 / -73.933
DMR Cognizant Official: Not reported
UDF2: Not reported
UDF3: Not reported
FIPS County Code: NY047

Non-Gov Permit Affiliation Type Desc: DMR Mailing Address
Non-Gov Permit Org Formal Name: ELPIDIO BURGOS
Non-Gov Permit Street Address: METRO NEW YORK SERVICE CENTER
Non-Gov Permit Supplemental Location: 85 COMMERCE DR
Non-Gov Permit City: SOMERSET
Non-Gov Permit State Code: NJ
Non-Gov Permit Zip Code: 08878
Non-Gov Facility Affiliation Type Desc: Owner
Non-Gov Facility Org Formal Name: ROLLING FRITO-LAY SALES LP
Non-Gov Facility Street Address: METRO NEW YORK SERVICE CENTER
Non-Gov Facility Supplemental Location: 85 COMMERCE DR
Non-Gov Facility City: SOMERSET
Non-Gov Facility State Code: NJ
Non-Gov Facility Zip Code: 08873
State Water Body: Not reported

UDF2: Not reported
UDF3: Not reported
FIPS County Code: NY047

Non-Gov Permit Affiliation Type Desc: Permittee
Non-Gov Permit Org Formal Name: ROLLING FRITO-LAY SALES LP
Non-Gov Permit Street Address: 85 COMMERCE DR
Non-Gov Permit Supplemental Location: Not reported
Non-Gov Permit City: SOMERSET
Non-Gov Permit State Code: NJ
Non-Gov Permit Zip Code: 08872
Non-Gov Facility Affiliation Type Desc: Owner
Non-Gov Facility Org Formal Name: ROLLING FRITO-LAY SALES LP
Non-Gov Facility Street Address: METRO NEW YORK SERVICE CENTER
Non-Gov Facility Supplemental Location: 85 COMMERCE DR
Non-Gov Facility City: SOMERSET
Non-Gov Facility State Code: NJ
Non-Gov Facility Zip Code: 08873

METRO NEW YORK SERVICE CENTER (Continued) **S103592538**

State Water Body:	Not reported
UDF2:	Not reported
UDF3:	Not reported
FIPS County Code:	NY047
Non-Gov Permit Affiliation Type Desc:	Not reported
Non-Gov Permit Org Formal Name:	Not reported
Non-Gov Permit Street Address:	Not reported
Non-Gov Permit Supplemental Location:	Not reported
Non-Gov Permit City:	Not reported
Non-Gov Permit State Code:	Not reported
Non-Gov Permit Zip Code:	Not reported
Non-Gov Facility Affiliation Type Desc:	Owner
Non-Gov Facility Org Formal Name:	ROLLING FRITO-LAY SALES LP
Non-Gov Facility Street Address:	METRO NEW YORK SERVICE CENTER
Non-Gov Facility Supplemental Location:	85 COMMERCE DR
Non-Gov Facility City:	SOMERSET
Non-Gov Facility State Code:	NJ
Non-Gov Facility Zip Code:	08873
State Water Body:	Not reported

AP282 **COOPER TANK & WELDING COR** **NY LTANKS** **S106385393**
SW **215 MOORE STREET** **N/A**
1/4-1/2 **BROOKLYN, NY**
0.343 mi.
1810 ft. **Site 1 of 3 in cluster AP**

Relative: **Lower**

Actual: **18 ft.**

LTANKS:

Name:	COOPER TANK & WELDING COR
Address:	215 MOORE STREET
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0312904 / 2011-06-06
Facility ID:	0312904
Site ID:	305294
Spill Date:	2004-02-23
Spill Cause:	Tank Test Failure
Spill Source:	Commercial/Industrial
Spill Class:	D4
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	hrpatel
Referred To:	USTS REMOVED, ORC , GW MONTIORING- JUNE 07
Reported to Dept:	2004-02-23
CID:	444
Water Affected:	Not reported
Spill Notifier:	Tank Tester
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	True
UST Involvement:	True
Remediation Phase:	0
Date Entered In Computer:	2004-02-23
Spill Record Last Update:	2011-06-09
Spiller Name:	SHARIMA RYAN
Spiller Company:	COOPER TANK & WELDING COR
Spiller Address:	215 MOORE STREET
Spiller County:	001
Spiller Contact:	SHARIMA RYAN

COOPER TANK & WELDING COR (Continued) **S106385393**

Spiller Phone: (845) 348-6355
Spiller Extention: Not reported
DEC Region: 2
DER Facility ID: 246620
DEC Memo: "Prior to Sept, 2004 data translation this spill Lead_DEC Field was VOUGHT TTF letter sent 3/8/2004 Sangesland spoke to consultant (Sharima Ryan) with RND Services. They have pulled the tank and pulled approx 220 tons of contaminated soil. The soil is staged on site pending the return of lab results. End point samples were taken from the pit. A report with all work done will be forwarded to the DEC soon . 3/15/04-Vought-Spill transferred from Rommel to Vought. 9/12/05 - Obligado - file transferred from Vought to obligado 1/20/06 - Obligado - Review UST Closure Report, submitted by Sharima Ryan (845-348-6355) at RND Services Inc, August 4, 2004. On 2/25/04 one 1080 gallon diesel UST was excavated. 7 inches of residual product was removed from the UST and drummed for disposal. Excavation was observed to be visually contaminated with separate phase petroleum beneath western edge of UST. Minimal amount of produt was recovered. 220 tons of contaminated soil were removed. Final screening of the excavation indicated that some residual soil contamination may have remained in the excavation and that the groundwater may have been affected . Excavation was 23.5 ft by 18/7 ft by 11 feet deep, where gw encountered. Before excavation was backfilled on 3/2/04, 60 lbs of ORC was applied and slurried in the injection. 4 6-inch diameter sump wells were installed, screed 5 to 12 ft below grade. Seven post excavation sidewall samples were collected. Notable soil results in ppb: PE2 - 120 benzene, 6500 ethylbenzene, 33700 xylenes, PE5 - 14000 napthalene, 1930 xylenes Report recomends collection of one ground water sample. Called Sharima, left message to call DEC. 1/24/06 - Obligado - Called Adrian Cooper left message to call back the DEC. Send letter requiring GW sample. Due date of 3/1/06. 3/23/06 - Obligado - Called Adrian Cooper. Spoke with David Hillcoat. He said he is working with RND and they collected a sample and they will contact me. 3/28/06 - Obligado - Called RND Shamira Ryan, said they have been retained to do the work and would have the results by 4/28/06. 6/5/06 - Obligado - Reviewed Gw Sampling report. GW impacts in excess of standards in one ground water sample- MW4. Sent letter requiring sampling of all accessible ground water wells. Due date 9/5/06. 9/28/06 - Obligado - Called Sharima Ryan at RND. Left message to call the DEC. 10/23/06 - Obligado - Spoke to Sharima Ryan. They have not been able to sample yet, but they have been retained to do the work. Expects to do the sampling within 2 weeks and submit in 6 weeks. 12/4/06 - Obligado - Received 1 Quarterly Monitoring report. All 4 monitoring wells were sampled on 11/1/06. No LNAPL detected. Minor exceedences of ground water standards in 3 of 4 monitoring wells. BTEX - from ND (MW3) to 28 ppb (MW1). Napthalene 25 (MW3) to 72 ppb (MW24). Max total VOCs 137 ppb. 1/10/07 - Sent letter to Cooper requiring 2 additional rounds of sampling. follwoing additioanl sampling a petition for closure may be submitted with sensitive receptor survey. 1/17/07 - Obligado - Spoke with Sharima Ryan, they need an additional month to do the sampling. They will sample in March and submit the report by April. 4/27/07 - Obligado - Review April 07 monitoring report. minor VOC exceedences. max VOCs 123 ppb in MW2. No product detected. 11/19/07 - Obligado - I was informed by Kumar Patel that there was another spill in the vicinity of this site, sp#9911504, in which contaminated soil was found in a NYC utility excavation at the intersection of Moore and White St. I

COOPER TANK & WELDING COR (Continued) **S106385393**

called Sharima Ryan to see what was the status of the most recent sampling report. She said it was completed and she was reviewing it. I told her the Department needed a more complete site plan of the entire cooper property to show where the excavation is in relation to the intersection where the spill was found. She said she will go out to the site the week after Thanksgiving. 2/22/08 - Obligado - Review the January 17, 2008 monitoring report. GW levels of VOCs in all wells are in <100 ppb range, similar to previous sampling. Call Sharima Ryan to make sure she makes a gw flow determination for the sensitive receptor survey. The UST area is 250 ft from the corner of White and Moore street. 07/09/10-Hiralkumar Patel. while investigation spill near 236 Moore Street, found soil and groundwater contamination. based on groundwater flow direction, this contamination could be coming from the subject site. reviewed all previous documents from DDC regarding soil investigation as part of new water main installation in 2000/2001:
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COOPER TANK & WELDING COR (Continued) **S106385393**

Toluene----------500*
----------500*-------6,177
Ethylbenzene----------5,344----------95----------578--------2,
795------243,510
Xylene----------2,333---------104----------946--------1,
000------277,760
1,2,4-Trimethylbenzene------12,670----------2,
562------237,050
1,3,5-Trimethylbenzene---------728----------1,
484-------43,390
Naphthalene----------15,490---------126----------103-------29,
585------528,820 01/09/02 Spill Investigation report: (this report was prepared as flash fire occured in excavation near building 236 Moore Street) - two soil and one water sample collected from excavation soil results (VOCs by method 8015):
----------White-1----------White-2
Benzene----------3,180----------1,250
Toluene----------5,620----------63,800
Ethylbenzene----------48,700----------2,540
Xylene----------224,000----------112,980 TPH
Gasoline------3,610,000---------5,590,000 TPH
Diesel----------583----------247 soil results (VOCs by method 8260):
----------white-1-------white-2----------limit 8.1 ft 8.3 ft
Acetone----------76,000--------158,000----------200
Trichloroethene----------20,000----------700
Tetrachloroethene----------20,000----------1,400
Naphthalene----------15,800----------13,000
Ethylbenzene----------23,300---------27,500---------5,500
1,2,4-Trimethylbenzene-----95,200---------62,600--------10,000
1,3,5-Trimethylbenzene----105,000----------3,300
Xylene----------125,000---------52,400---------1,200
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COOPER TANK & WELDING COR (Continued) **S106385393**

----------PE-2-------PE-5
Benzene----------120 Toluene----------1,200
Ethylbenzene----------6,500--------680
Xylene----------33,700------1,930
1,2,4-Trimethylbenzene----57,000-----12,000
1,3,5-Trimethylbenzene----16,000------4,600
Naphthalene----------32,000-----14,000 2) 01/24/06: DEC sent letter requiring collection of one groundwater sample, based on observation of free product in excavation, in area of greatest suspected impact. 3) 05/12/06: Groundwater sample report: - water depth found at 4.5 ft bg (sump well screen starts at 5 ft bg) in two wells; other wells were not measured - water sample was collected from well MW-4, which is located vicinity of previous endpoint sample PE-3 on the west side of excavation (but contamination was found in samples PE-2 and PE-5) <---------- - site map in report shows that MW-4 is in between PE-2 and PE-3 - minor VOC contamination found in sample (maximum 67 ppb Naphthalene) 4) 06/05/06: DEC sent letter requiring second round of groundwater sampling from all wells. 5) 11/28/06: groundwater sample report: - all wells sampled on 11/01/06 - water was measured at 5.01 ft bg in MW-1, 5.0 ft bg in MW-2, 4.9 ft bg in MW-3 and 5.11 ft in MW-4 - no free phase product found in any well - minor VOC contamination found in all four wells (maximum 75 ppb Naphthalene in MW-4) 01/10/07: DEC sent letter requiring two more quarterly groundwater sampling. 6) 04/18/07: groundwater sample report (second round): - all wells sampled on 04/04/07 - water was measured at 5.29 ft bg in MW-1, 5.33 ft bg in MW-2, 5.26 ft bg in MW-3 and 5.5 ft in MW-4 - no free phase product found in any well - minor VOC contamination found in all four wells (maximum 67 ppb Naphthalene in MW-4) 7) 10/16/07: groundwater sample report (third round): - all wells sampled on 07/19/07 - water was measured at 4.20 ft bg in MW-1, 4.23 ft bg in MW-2, 4.09 ft bg in MW-3 and 4.36 ft in MW-4 - no free phase product found in any well - minor VOC contamination found in all four wells (maximum 76 ppb Naphthalene in MW-1) 8) 07/03/08: Sensitive Receptor Survey: - as per this report, wells in tank excavation were installed to approx. depth of 8 ft bg (but initial tank closure report says wells were installed to 12 ft bg) - groundwater flow in the general area is expected to be west by southwest toward the East River (site-specific groundwater flow direction was never defined) - previous tank was located about 250 ft away from the building corner at the intersection of Moore street and White street tank company could be using degreaser which could be source of TCE and PCE found in previous samples.
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COOPER TANK & WELDING COR (Continued) **S106385393**

under the intersection of White Street and Moore Street, the Department requires further soil and groundwater investigation at the site. Mr. Hillcoat asked to send letter at the site address. Mr. Hillcoat mentioned that they use organic cleaner to clean metal surface before painting and he has not knowledge of using any degreaser in past. 215 Moore Street Inc. **property owner** 215 Moore Street Brooklyn, NY 11206 Attn.: Adrienne Cooper **chief executive officer for 215 Moore Street, Inc.** Cooper Tank & Welding Corp. **business at the site** Attn.: David Hillcoat **general manager** PH. (718) 497-4431 Ext. 6 Fax (718) 497-7412 email: dhillcoat@coopertank.com from city record found that 215 Moore Street Inc. owns following sites: 1. Block/Lot: 3100/22 - 208 Seigel Street 2. Block/Lot: 3100/26 - 216-224 Seigel Street 3. Block/Lot: 3100/32 - 228-230 Seigel Street 4. Block/Lot: 3100/34 - 232 Seigel Street 5. Block/Lot: 3100/35 - 234 Seigel Street 6. Block/Lot: 3100/36 - 236 Seigel Street 7. Block/Lot: 3100/38 - 240 Seigel Street 8. Block/Lot: 3100/39 - 242 Seigel Street 9. Block/Lot: 3100/40 - 244 Seigel Street 10. Block/Lot: 3100/47- 225 Moore Street 11. Block/Lot: 3100/56- 207-219 Moore Street 12. Block/Lot: 3100/61- 203-205 Moore Street 13. Block/Lot: 3100/63- 201 Moore Street 14. Block/Lot: 3100/66- no street address 15. Block/Lot: 3100/67- no street address 16. Block/Lot: 3100/68- no street address no PBS record or other spill numbers found at any properties owned by 215 Moore Street, Inc. <--------- 4:23 PM:- left message for Sharima Ryan at RND. Sharima Ryan RND Services Inc. Ph. (845) 348-6355 Fax (845) 348-1791 email: spryan@rndservicesinc.com 07/13/10-Hiralkumar Patel. 9:01 AM:- received call from Ms. Ryan. informed her about required investigation. 07/15/10-Hiralkumar Patel. 11:51 PM:- sent letter to Mr. Cooper requiring Phase I, soil/gw delineation (via monitoring wells) around previously removed diesel UST and soil/gw investigation (via soil borings) in southeast corner of the property (as DDC found contamination under sidewalk near that corner). letter emailed to Mr. Hillcoat and Ms. Ryan. 12:27 PM:- received email from Mr. Hillcoat. he requested extension to submit report. 07/23/10-Hiralkumar Patel. 9:25 AM:- spoke with Mr. Hillcoat. informed him that deadline can be extended if project is in progress. Mr. Hillcoat mentioned that RND will visit site on 07/26/10 for further evaluation. Mr. Hillcoat also mentioned that they are using 35 gal aboveground drum of ZEP Z Green solution to clean metals before painting. 08/02/10-Hiralkumar Patel. 11:52 AM:- received call from Vincent from Gannett Fleming Engineers, consultant hired for future work. they are reviewing available information and will submit Phase I and work plan. he requested a deadline extension. asked him to send email with new proposed date. Vincent Frisina Gannett Fleming Engineers Ph. (516) 364-4140 Ext 1323 (516) 491-6541 (C) Fax (516) 921-1565 email: vfrisina@gfnet.com 08/04/10-Hiralkumar Patel. 1:21 PM:- received letter from Vincent requesting time extension until 09/30/10 to submit Phase I and investigation work plan. 08/06/10-Hiralkumar Patel. 11:35 AM:- sent email to Vincent approving time extension and asked to submit Phase I report and investigation work plan by end of 09/30/10. email copied to Mr. Hillcoat. 09/28/10-Hiralkumar Patel. 3:15 PM:- received email from Vincent with copy of Phase I and work plan. abstract of Phase I: - subject property is approx. 18 ft above mean sea level - depth to groundwater at the site is approx. 10 to 15 ft bg - nearest water body is Newtown Creek, which is located 0.39 mile from the subject site to the northeast - East river is located approx. 1.5 miles from the site to the west - according to sanborn map from 1933, the

COOPER TANK & WELDING COR (Continued) **S106385393**

subject site included 70-car capacity garage with associated gasoline tank - according to sanborn map from 1933, surrounding properties included: auto painting, junk yards (one junkyard includes a gasoline tank), 50-car capacity garage with associated gasoline tank, 40-car capacity garage with associated gasoline tank, a filling station with three gasoline tanks, small ice cream factory - according to sanborn map from 1951, site had two private garages - according to sanborn map from 1951, the ice cream factory in neighbourhood was replaced with a 40-car capacity garage with associated gasoline tank - according to sanborn map from 1965, trucking garage in neighbourhood was replaced with an auto repair shop and private garage and the junk yard in neighbourhood was replaced with a parking lot - according to sanborn map from 1979, parking lot in neighbourhood was converted to auto wrecking Vincent proposed to install four borings: one in each corner of the property. he also proposed to convert these borings into 2 inch wells and collect two soil and one groundwater sample from each boring. the proposed work plan is not acceptable, as proposed borings are more than 200 ft away from previous tank location and from each other. also, the proposed work plan doesn't include the work schedule. 09/30/10-Hiralkumar Patel. 2:57 PM:- sent email to Vincent. asked him to submit block/lot numbers of adjacent properties which included junk yards, garage, auto repair shop, gasoline tanks, filling station etc. also, asked him to submit a revised work plan including installation of minimum of three wells within 20 ft distance from the former tank location and installation of boring(s) in southeast corner of the property. informed Vincent that revised work plan must include a work schedule. asked Vincent to submit required documents by end of 10/08/10. email copied to Mr. Hillcoat. 10/04/10-Hiralkumar Patel. 2:11 PM:- received message from Vincent. 10/05/10-Hiralkumar Patel. 2:30 PM:- left message for Vincent. 10/08/10-Hiralkumar Patel. 10:44 AM:- spoke with Vincent. he mentioned that to find out block/lot numbers of all properties in neighbourhood with history of junk yard/garage/gasoline tanks etc. will require lots of effort and it will be time consuming. aksed Vincent to find out these block/lot numbers, if possible, quickly. informed Vincent that the department may require these block/lot numbers after reviewing results of Phase II report. also, asked him to install well within 20 ft distance from the former tank location. Vincent mentioned that they want to keep well location proposed in property corners and will add wells around tank. also asked to collect at least one groundwater sample in southeast corner of the property and couple of soil borings around that area. asked Vincent to submit work plan by end of 10/12/10. 10/12/10-Hiralkumar Patel. 1:07 PM:- received email from Vincent including revised work plan. Vincent propose to install total of eight borings (three around former tanks, three in southeastern corner, one in northeastern and one in northwestern corner) and six of these borings (three around former tanks, one in southeastern corner, one in northeastern corner and one in northwestern corner) will be converted into 2 inch diameter wells. two soil samples will be collected from each borings. all soil and groundwater samples will be analyzed for full list VOCs + chlorinated solvents and STARS 8270. Vincent also mentioned that after defining site specific groundwater flow direction, they will look for potential off-site sources listed in phase I report (junk yards/gas station/gasoline takns/garage etc.) 1:45 PM:- sent work plan approval letter to Mr. Cooper and asked to submit report by end of 11/30/10. letter emailed to Mr. Hillcoat and Vincent.

COOPER TANK & WELDING COR (Continued) **S106385393**

11/22/10-Hiralkumar Patel. 2:26 PM:- received email from Vincent. due to holidays, he will submit report by 12/10/10. 12/10/10-Hiralkumar Patel. 3:48 PM:- received email from Vincent with report. abstract: - site lies approx. 18 ft above mean sea level - found groundwater from approx. 5.7 to 9.5 ft bg (9.18 to 10.97 ft above mean sea level) - well survey indicated a predominant groundwater flow direction of north-northeast <----- - installed eight borings: three borings were advanced within 20 ft of the former UST location, three within the site's southeastern corner, one in site's northeastern corner and one in site's northwestern corner - six of these borings, exclusive of two within the southeastern corner, were convereted to monitoring wells - 2 inch diameter wells were installed with 10 ft of screen - each boring was advanced to approx. 5 ft below the groundwater interface - two soil samples were collected from each borings: one with highest PID or representative of upper soil horizon and second sample from deepest dry zone - during borings, groundwater was found below 6 ft depth, so screens were installed from 5 ft depth, but after a week, water was found above the screen level in wells around the former diesel UST - no odors or sheen observed on water in any well - based on groundwater flow direction, well MW-NE-7 is downgradient from the former diesel tank area - based on water elevation data, groundwater in well MW-UST-1 was found 1.7 ft deeper than well MW-UST-2 and these two wells are about 25-30 ft apart from each other <-------- - found VOC contamination (Xylene: 1,440, 1,2,4-Trimethylbenzene: 16,000 ppb) in soil sample from SB-UST-3S (6-8.75 ft bg) only, no contamination found in sample SB-UST-3D (8.75-10 ft bg) - no VOC contamination found in any other soil sample - found SVOC contamination only in samples SB-SE-6D (5-5.75 ft bg), SB-NE-7S (2-6 ft bg) and SB-UST-2S (4-6 ft bg); backfill material found in all borings - no chlorinated compounds found in any soil sample <---------- - found minor VOC contamination (maximum 110 ppb of Ethylbenzene) in groundwater sample from well SB-SE-6 in southeast corner of the property (close to 236 Moore Street) - found chlorinated compounds (TCE - 8.4 ppb, PCE - 19 ppb) in groundwater sample from MW-NW-8, well installed in northwest corner of the property <---------- - no PID readings found in borings SB-UST-2, SB-NE-7 and SB-NW-8 - minor PID readings found in SB-UST-1 (max 65.5 ppm at 6-8 ft) and SB-UST-3 (max 80.1 at 8.75-10 ft) - heavy PID readings and strong odors noticed in borings installed in southeast corner (towards the 236 Moore Street) except boring SB-SE-4 where refusal found at 8 ft depth PID readings in SB-SE-5 and SB-SE-6 (depth in ft and PID in ppm): boring------water-----PID starting-------PID at-------highest PID---------PID at depth depth water table with depth boring end SB-SE-5-------6--------86.7 at 6-7--------86.7--------1,426 at 14-15----1,426 at 14-15 SB-SE-6-------6--------50.1 at 6-7--------50.1--------1,221 at 12-13----1,221 at 12-13 - in both borings in southeast corner, soil samples were collected above water table where no PID was recorded and no soil sample collected below water table where more than 1,000 ppm recorded on PID and strong odors noted 12/22/10-Hiralkumar Patel. 4:14 PM:- spoke with Vincent. due to 1.7 ft difference in water table in wells MW-UST-1 and MW-UST-2 and due to well screen about 3.7 ft below water table in well MW-UST-1, asked Vincent to re-survey and re-sample all six wells. 4:19 PM:- left message for Mr. Hillcoat requiring re-survey and re-sampling of all wells. 4:43 PM:- sent email to Mr. Hillcoat requiring re-survey and re-sampling of all six wells. asked him to analyze water samples for CP-51 list +

COOPER TANK & WELDING COR (Continued) **S106385393**

chlorinated compounds. email copied to Vincent. 12/23/10-Hiralkumar Patel. 3:29 PM:- received email from Mr. Hillcoat. he mentioned that Vincent will submit schedule for re-survey and re-sampling in first week of January. 01/06/11-Hiralkumar Patel. 11:04 PM:- received message from Vincent. 11:55 PM:- spoke with Vincent. he inquired about what needs to be done: re-survey or gauging only. asked him to re-survey all wells to confirm previous data. 02/08/11-Hiralkumar Patel. 10:05 AM:- sent email to Vincent inquiring updates regarding re-survey and re-sampling of all existing wells on the property. email copied to Mr. Hillcoat. 10:12 AM:- received email from Vincent. he will submit amended report by 02/10/11. 02/11/11-Hiralkumar Patel. 3:06 PM:- received email from Vincent including report. all wells were re-surveyed and re-sampled. groundwater found flowing towards south-southeast direction. minor VOC contamination found in well MW-3 (near former diesel tank) and MW-6 (in southeast corner). during re-survey, found about 2 ft of difference in water table in wells MW-7 and MW-8. minor changes observed in reamining wells. there is still about 1.5 ft difference in water level in wells MW-1 and MW-2. 4:36 PM:- spoke with Vincent. as two different groundwater flow direction found, asked him to regauge wells again. Vincent mentioned that he did re-gauging last week and found groundwater flow direction returning to the northeast direction as found in first round. Vincent also mentioned that wells MW-7 and MW-8 are located in backyard where most of the snow was and some may have melted and raised the water table. asked Vincent to send summary letter with the result of third gauging event. 02/15/11-Hiralkumar Patel. 2:30 PM:- spoke with Mr. Hillcoat. Mr. Hillcoat mentioned that previous diesel tanks had direct fill and there was no dispenser island, but they were using hand pump to fill tanks on machinery. based on available information and based on groundwater flow fluctuation, asked him to investigate soil and groundwater under the Moore Strete sidewalk which will cover the south side of the previous diesel tanks. also asked him to find out location of gasoline tank which is reported on 1933 Sanborn Map. 2:58 PM:- left message for Vincent to submit result of third gauging event. 3:04 PM:- sent email to Mr. Hillcoat requiring soil/groundwater investigation under the Moore street sidewalk, south of the former diesel tank area. also asked him to find out location of the former gasoline tank which is reported on the 1933 Sanborn Map. asked Mr. Frisina to submit schedule for additional investigation by 02/25/11. email copied to Vincent. 02/16/11-Hiralkumar Patel. 9:32 AM:- left message for Mr. Hillcoat. 9:39 AM:- received call from Vincent inquiring how many borings needed on Moore street sidewalk, south of the former diesel tanks. asked him to install about 3 to 4 borings on sidewalk and convert one of the boring into permanent well. asked him to collect soil and groundwater samples from each boring. as chlorinated compounds were not found in groundwater samples from wells around the former diesel tank area, asked him to analyze new soil/groundwater samples for STARS VOCs only and not for chlorinated solvents, except a groundwater sample from a well that will be installed on the sidewalk. asked Vincent to send site map with proposed boring locations. 3:50 PM:- received email from Vincent including result of third gauging event. during re-gauging on 02/04/11, groundwater found flowing towards the East. 02/17/11-Hiralkumar Patel. 2:36 PM:- received email from Vincent. he mentioned that the lot # 47 (on which the sanborn maps shows gasoline tank) was occupied by truck rental firm up until 1981. Cooper Tank baught this lot # 47 in Nov. 1981.

COOPER TANK & WELDING COR (Continued) **S106385393**

Vincent also sent copy of deed document. Vincent mentioned that cooper only conducted welding operation on this lot. reviewed Phase I. garage with capacity of 70 cars was located on lot 47, which is at the intersection of White Street and Moore Street, from 1933 to 1979. reviewed old NYC DDC reports for spill #: 9911504. - as per report dated 12/20/1999, more than 1,000 ppm was recorded on PID from 11 to 15 ft depth in boring SB-3 which was installed next to Cooper Tank; groundwater found at about 9 ft depth; found TCE (18.9 ppb) and PCE (6.2 ppb) in groundwater sample from SB-3; no borings were done by Mr. Farhi's property; two borings were done close to former ice-cream factory and no contmaination found - during further investigation by NYC DDC, heavy soil contamination was found in soil sample at 4-8 ft depth (borings MW-1, MW-15 and MW-18) in the northwestern corner of the intersection of the White Street and Moore Street; these borings were installed on western sidewalk of White Street, along lot # 47 of Cooper tank where gasoline tank was located 02/18/11-Hiralkumar Patel. 10:12 AM:- received message from Mr. Hillcoat. he mentioned that they baught a lot in 1981 and then between 1981 and 1984, on-site structures were demolished and the current structure was built. 3:52 PM:- received email from Vincent including work plan from additional investigation. 02/28/11-Hiralkumar Patel. discussed with DEC Austin. based on history of gasoline tank on lot # 47 and soil contamination found by NYC DDC along lot # 47, Austin mentioned that further investigation is needed at the site. 11:55 AM:- sent email to Vincent and informed him to wait for work plan approval as currently reviewing old data. email copied to Mr. Hillcoat. 03/02/11-Hiralkumar Patel. discussed with DEC Mark and DEC Austin. 03/22/11-Hiralkumar Patel. 11:02 AM:- sent email to Mr. Hillcoat and Vincent requesting a meeting. 03/24/11-Hiralkumar Patel. scheduled a meeting in office at 3 PM on 03/31/11. 03/31/11-Hiralkumar Patel. after reviewing old data and historical use of the property, requires soil investigation on south side of the former diesel tank area (on north sidewalk of Moore Street - based on contamination found in SB-UST-3) and soil/groundwater investigation on Lot 47 and west sidewalk of White Street near Lot 47 (based on gasoline tanks on Lot 47). investigation on Lot 47 and outside of Lot 47 must include installation of minimum of three monitoring wells and complete horizontal and vertical delineation (as found high PID at 14 ft depth in SB-SE-5 and SB-SE-6). 2:30 PM:- met with Mr. Hillcoat, Vincent and Mr. Inyard (Gannett Fleming) in office. based on available information, asked Mr. Hillcoat to investigate soil under the north sidewalk of Moore Street (south of former diesel tank area). asked him to install two soil borings (instead of three as proposed in work plan dated 02/18/11) down to water table and collect soil and groundwater sample. also discussed about historical gasoline tank on Lot 47. based on soil sample results during NYC DDC work in the street and gasoline tank on lot 47, asked Mr. Hillcoat for soil and groundwater investigation inside the property (on lot 47) and also on the west sidewalk of White Street (along lot 47). informed Mr. Hillcoat that the Department requires minimum of three monitoring wells inside the lot 47 and these wells must be installed around the location of former gasoline tanks. Mr. Hillcoat mentioned that they will do GPR survey to locate old tank location, but if could not find it, they will use location showed on Sanborn Map (which is along the south wall of building on lot 47). also asked for soil and groundwater investigation along the west sidewalk of White street as DDC found contamination in 1999/2000. suggest Mr. Hillcoat to install two more

COOPER TANK & WELDING COR (Continued) **S106385393**

wells on the west sidewalk of White street as they will have all equipments on-site for investigation. asked to collect two soil samples (one with the highest PID and one deepest clean) and groundwater samples from each borings/wells. asked to continue delineation below water table, if finds contamination below water table. asked to analyze all soil and groundwater samples via full list of VOCs and STARs list of SVOCs for the first round of sampling. if finds any chlorinated solvents, then further investigation is needed. if no other VOCs found other than STARs VOCs then future samples can be analyzed for STARs list only. informed Mr. Hillcoat that a new spill number will be generated for the site because of suspected gasoline contamination. 3:29 PM:- sent work plan approval letter to Mr. Hillcoat. asked him for investigation under the north sidewalk of the Moore Street (south of the former diesel tank area). asked him to install soil boring at the proposed SB-UST4 and SB/MW-UST-5 locations. suggested him to install a monitoring well at SB/MW-UST-5 for future monitoring, if needed. asked to submit investigation report by 05/06/11. letter emailed to Mr. Hillcoat and Vincent. 04/20/11-Hiralkumar Patel. 3:22 PM:- received call from Vincent. they have scheduled boring/well installation in middle of next week (04/27 or 04/28). they will install one permanent well and will collect groundwater sample once well developed. 05/02/11-Hiralkumar Patel. 2:06 PM:- received call from Vincent. they installed boring/well on south side of former diesel tank area and will submit report by end of 05/25/11. 05/26/11-Hiralkumar Patel. received report from Vincent (at 5:07 PM on 05/25/11). two borings installed on north sidewalk of Moore Street, south of former diesel tank area. less than 15 ppm recorded on PID. one soil sample at the highest PID reading was collected from each boring. one boring converted to a 2 inch permanent well with 10 ft screen from 2 to 12 ft bg. no VOC contamination found in soil samples. found some SVOC contamination in one soil sample where some coal found in soil. 7.9 ppb Benzene found in groundwater sample collected from well installed on sidewalk. report missing lab data. 06/06/11-Hiralkumar Patel. 2:22 PM:- received missing lab data. based on available information, case closed. 06/09/11-Hiralkumar Patel. 10:57 AM:- sent spill closure letter to Mr. Cooper. letter emailed to Mr. Hillcoat and Vincent. **refer to spill #: 0751350 and 1100020 also.**"

Remarks: "TEST WAS ALERT 1000, AND SHOWED A TANK TEST FAILURE, WILL FURTHER INVESTIGATE: "

All TTF:

Facility ID:	0312904
Spill Number:	0312904
Spill Tank Test:	1528991
Site ID:	305294
Tank Number:	1
Tank Size:	1000
Material:	0008
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	00
Test Method 2:	Unknown
Leak Rate:	.00
Gross Fail:	Not reported
Modified By:	Spills

COOPER TANK & WELDING COR (Continued) **S106385393**

Last Modified Date: Not reported

All Materials:
Site ID: 305294
Operable Unit ID: 878146
Operable Unit: 01
Material ID: 498079
Material Code: 0008
Material Name: diesel
Case No.: Not reported
Material FA: Petroleum
Quantity: .00
Units: L
Recovered: .00
Oxygenate: Not reported

AP283 **CRESCENT SMELTING WORKS** **SEMS-ARCHIVE** **1018149160**
WSW **232 SEIGEL** **LEAD SMELTERS** **NYN000206604**
1/4-1/2 **BROOKLYN, NY 11206**
0.344 mi.
1814 ft. **Site 2 of 3 in cluster AP**

Relative:
Lower

Actual:
18 ft.

SEMS Archive:
Site ID: 0206604
EPA ID: NYN000206604
Cong District: Not reported
FIPS Code: 36047
FF: N
NPL: Not on the NPL
Non NPL Status: Removal Only Site (No Site Assessment Work Needed)

SEMS Archive Detail:
Region: 02
Site ID: 0206604
EPA ID: NYN000206604
Site Name: CRESCENT SMELTING WORKS
NPL: N
FF: N
OU: 00
Action Code: RS
Action Name: RV ASSESS
SEQ: 1
Start Date: 2014-09-30 04:00:00
Finish Date: 2016-11-15 05:00:00
Qual: Not reported
Current Action Lead: EPA Perf

Lead Smelter Sites:
Site ID: 206604
Facility Region Id: 2
Latitude: Not reported
Longitude: Not reported
CoC Ind: Not reported
Contaminant Name: Not reported
FF Ind: N

CRESCENT SMELTING WORKS (Continued) **1018149160**

NAI:	N
Non-Primary Site-Sub Type:	Not reported
NPL:	Not on the NPL
Primary Site-Sub Type:	Metal fabrication/finishing/coating and allied industries (Manufacturing/Processing/Maintenance)
Special Initiative:	Unrecognized Smelter per 2001 Report

284
North
1/4-1/2
0.346 mi.
1826 ft.

WMNY VARICK 1 TRANSFER STATION **NY SWF/LF** **S102632777**
215 VARICK AVENUE **NY Financial Assurance** **N/A**
BROOKLYN, NY 11237

Relative:
Lower

Actual:
11 ft.

SWF/LF:

Flag:	ACTIVE
Region Code:	2
Phone Number:	7185335266
Owner Name:	Waste Management of NY; LLC
Owner Type:	Private
Owner Address:	215 Varick Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11237
Owner Email:	Not reported
Owner Phone:	7185335310
Contact Name:	Jay Kaplan
Contact Address:	215 Varick Avenue
Contact Addr2:	Not reported
Contact City,St,Zip:	Brooklyn, NY 11237
Contact Email:	jkaplan2@wm.com
Contact Phone:	7185335310
Activity Desc:	z Retired - Transfer station - permit
Activity Number:	[24T66]
Active:	Yes
East Coordinate:	590479
North Coordinate:	4507435
Accuracy Code:	4.2 - Utilization of GIS and existing spatial data
Regulatory Status:	Permit
Waste Type:	Yard Waste;MSW (Residential/Institutional & Commercial)
Authorization #:	2-6104-00010/00002
Authorization Date:	10/21/2014
Expiration Date:	10/21/2019
Operator Name:	Waste Management of NY; LLC
Operator Type:	Private
Laste Date:	Not reported

NY Financial Assurance 1:

Owner Name:	Waste Management of NY; LLC
Region:	2
Estimate Type:	Closure
Estimate Amount:	705500
Estimate Date:	03/01/2001
Mechanism:	Surety bond - Performance
Mechanism Amount:	729170
Issue Date:	Not reported
Expiration Date:	Not reported
Activity Number:	24T66
Activity Description:	Transfer station - permit

285
NNE
1/4-1/2
0.356 mi.
1882 ft.

CASALINO INTERIOR DEMOLITION
213 MEADOW ST
BROOKLYN, NY 11237

NY SWF/LF **S105841899**
NY Spills **N/A**

Relative:
Lower

Actual:
14 ft.

SWF/LF:

Flag:	INACTIVE
Region Code:	2
Phone Number:	7184782292
Owner Name:	Not reported
Owner Type:	Not reported
Owner Address:	Not reported
Owner Addr2:	Not reported
Owner City,St,Zip:	Not reported
Owner Email:	Not reported
Owner Phone:	Not reported
Contact Name:	CASALINO; ANTHONY OWNER
Contact Address:	Not reported
Contact Addr2:	Not reported
Contact City,St,Zip:	Not reported
Contact Email:	Not reported
Contact Phone:	Not reported
Activity Desc:	z Retired - C&D processing - registration
Activity Number:	[24W33]
Active:	No
East Coordinate:	590550
North Coordinate:	4507452
Accuracy Code:	Not reported
Regulatory Status:	Not reported
Waste Type:	Not reported
Authorization #:	2-6104-00009
Authorization Date:	Not reported
Expiration Date:	Not reported
Operator Name:	Not reported
Operator Type:	Not reported
Laste Date:	Not reported

SPILLS:

Name:	213 MEADOW ST.
Address:	213 MEADOW ST
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9315532 / 1994-03-31
Facility ID:	9315532
Facility Type:	ER
DER Facility ID:	177864
Site ID:	214676
DEC Region:	2
Spill Cause:	Unknown
Spill Class:	C4
SWIS:	2401
Spill Date:	1994-03-31
Investigator:	CAMMISA
Referred To:	Not reported
Reported to Dept:	1994-03-31
CID:	Not reported
Water Affected:	Not reported
Spill Source:	Tank Truck
Spill Notifier:	Responsible Party

CASALINO INTERIOR DEMOLITION (Continued) **S105841899**

Cleanup Ceased:	1994-03-31
Cleanup Meets Std:	True
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	1994-04-05
Spill Record Last Update:	2004-09-30
Spiller Name:	Not reported
Spiller Company:	WHALECO
Spiller Address:	Not reported
Spiller Company:	001
Contact Name:	Not reported
DEC Memo:	""
Remarks:	"SPILL CONTAINED ON CONCRETE PIER - CLEAN UP IN PROGRESS BY WHALECO."

All Materials:

Site ID:	214676
Operable Unit ID:	997568
Operable Unit:	01
Material ID:	387281
Material Code:	0008
Material Name:	diesel
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	-5.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

AQ286 **MARC KATZMAN** **NY LTANKS** **S106737658**
WSW **255 MCKIBBON ST** **N/A**
1/4-1/2 **BROOKLYN, NY**
0.357 mi.
1887 ft. **Site 1 of 2 in cluster AQ**

Relative: **Lower**
Actual: **17 ft.**

LTANKS:

Name:	APARTMENT
Address:	255 MCKIBBON ST
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0407643 / 2005-11-30
Facility ID:	0407643
Site ID:	332168
Spill Date:	2004-10-09
Spill Cause:	Tank Test Failure
Spill Source:	Private Dwelling
Spill Class:	D4
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	rmpiper
Referred To:	Not reported
Reported to Dept:	2004-10-09
CID:	72
Water Affected:	Not reported
Spill Notifier:	Tank Tester
Last Inspection:	Not reported
Recommended Penalty:	False

MARC KATZMAN (Continued) **S106737658**

Meets Standard:	True
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	2004-10-12
Spill Record Last Update:	2006-09-20
Spiller Name:	Not reported
Spiller Company:	Not reported
Spiller Address:	Not reported
Spiller County:	001
Spiller Contact:	ALEX - COSMOS ENVIRONMENT
Spiller Phone:	(516) 374-7890
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	267329
DEC Memo:	"09/19/05- Spoke to Alex from Cosmos Environmental. He will send me the owners name and asddress. Cosmos recommended closing the tanks and he gave an estimate, but the owner never signed the contract. Need to follow up on this. S. Scharf 11/30/05- DEC PIPER received proper documentation from Managing co. see e-docs. 11/17/05- Integrity of the tank failed. The client did not sign the contract.Refer back to Region 2 for closure as this was cross-referenced with spill No. 0410531- S. Scharf"
Remarks:	""

All TTF:

Facility ID:	0407643
Spill Number:	0407643
Spill Tank Test:	1548235
Site ID:	332168
Tank Number:	001
Tank Size:	5000
Material:	Not reported
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	03
Test Method 2:	Horner EZ Check I or II
Leak Rate:	.00
Gross Fail:	F
Modified By:	Watchdog
Last Modified Date:	Not reported

Name:	MARC KATZMAN
Address:	255 MCKIBBON ST
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0410531 / 2005-11-30
Facility ID:	0410531
Site ID:	335506
Spill Date:	2004-12-22
Spill Cause:	Tank Test Failure
Spill Source:	Commercial/Industrial
Spill Class:	D4
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	rmpiper
Referred To:	Not reported

MARC KATZMAN (Continued) **S106737658**

Reported to Dept:	2004-12-22
CID:	407
Water Affected:	Not reported
Spill Notifier:	Tank Tester
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	True
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	2004-12-22
Spill Record Last Update:	2006-09-20
Spiller Name:	MARC KATZMAN
Spiller Company:	MARC KATZMAN
Spiller Address:	255 MCKIBBON ST
Spiller County:	001
Spiller Contact:	MARC KATZMAN
Spiller Phone:	(212) 472-1100
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	267329
DEC Memo:	"ttf ltr sent 1/14/2005 11/14/05- DEc Piper Contacted Property owner, Zumck Realty Co., 516-829-2428 Lucy Quiceno- (Book keeper) . Supposedly, tank is out of service. ABC Tank?? filed application. No records found. Lucy will follow up. 11/17/05- Integrity of the tank failed. The client did not sign the contract.Refer back to Region 2 for closure as this was cross-referenced with spill No. 0407643. 11/30/05 DEC Piper received proper documentation from Management co. see e-docs."
Remarks:	"PBS No: 2-259527"

All TTF:

Facility ID:	0410531
Spill Number:	0410531
Spill Tank Test:	1548434
Site ID:	335506
Tank Number:	1
Tank Size:	5000
Material:	Not reported
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	03
Test Method 2:	Horner EZ Check I or II
Leak Rate:	.00
Gross Fail:	F
Modified By:	Watchdog
Last Modified Date:	Not reported

287
ESE
1/4-1/2
0.362 mi.
1911 ft.

AAA ALLOYS OF AMERICA
12 WYCKOFF AVE
BROOKLYN, NY 11237

SEMS-ARCHIVE **1014201490**
LEAD SMELTERS **NYN000206663**

Relative:
Higher

Actual:
21 ft.

SEMS Archive:

Site ID:	0206663
EPA ID:	NYN000206663
Cong District:	Not reported
FIPS Code:	36047
FF:	N
NPL:	Not on the NPL
Non NPL Status:	Removal Only Site (No Site Assessment Work Needed)

SEMS Archive Detail:

Region:	02
Site ID:	0206663
EPA ID:	NYN000206663
Site Name:	AAA ALLOYS OF AMERICA
NPL:	N
FF:	N
OU:	00
Action Code:	RS
Action Name:	RV ASSESS
SEQ:	1
Start Date:	2014-07-21 04:00:00
Finish Date:	2014-07-21 04:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf

Lead Smelter Sites:

Site ID:	206663
Facility Region Id:	2
Latitude:	Not reported
Longitude:	Not reported
CoC Ind:	Not reported
Contaminant Name:	Not reported
FF Ind:	N
NAI:	N
Non-Primary Site-Sub Type:	Not reported
NPL:	Not on the NPL
Primary Site-Sub Type:	Batteries/scrap metals/secondary smelting/precious metal recovery (Recycling)
Special Initiative:	Unrecognized Smelter per 2001 Report
Site number:	227
Street map and/or aerial photo:	Y
Sanborn fire ins map ref.:	Brooklyn 1904-8 v.1 # 42, 55
Comments:	SMD1963
DJS match to SMD 48-49:	Not reported

288
West
1/4-1/2
0.362 mi.
1912 ft.

CLOSED-LACKOF RECENT INFO
268 JOHNSON AVENUE
BROOKLYN, NY

NY LTANKS **U001839163**
NY Spills **N/A**

Relative:
Higher

Actual:
23 ft.

LTANKS:

Name:	CLOSED-LACKOF RECENT INFO
Address:	268 JOHNSON AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	8904846 / 2008-05-06
Facility ID:	8904846
Site ID:	148418
Spill Date:	1989-08-14
Spill Cause:	Tank Test Failure
Spill Source:	Commercial/Industrial
Spill Class:	A3
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	hrpatel
Referred To:	Not reported
Reported to Dept:	1989-08-15
CID:	Not reported
Water Affected:	Not reported
Spill Notifier:	Tank Tester
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	True
Remediation Phase:	0
Date Entered In Computer:	1989-08-25
Spill Record Last Update:	2008-05-06
Spiller Name:	Not reported
Spiller Company:	MYRON LUMBER YARD
Spiller Address:	268 JOHNSON AVENUE
Spiller County:	001
Spiller Contact:	Not reported
Spiller Phone:	Not reported
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	126314
DEC Memo:	"refer to Spill #: 9913444. will be investigated."
Remarks:	"2K TANK FAILED 10 LB AIR PRESSURE TEST- 1/2LB/1/2HR. CLOSED DUE TO LACK OF ANY RECENT INFO - DOES NOT MEET ANY CLEANUP REQUIREMENTS."

All TTF:

Facility ID:	8904846
Spill Number:	8904846
Spill Tank Test:	1535856
Site ID:	148418
Tank Number:	Not reported
Tank Size:	0
Material:	0008
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	00
Test Method 2:	Unknown
Leak Rate:	.00

CLOSED-LACKOF RECENT INFO (Continued) **U001839163**

Gross Fail: Not reported
Modified By: Spills
Last Modified Date: Not reported

All Materials:
Site ID: 148418
Operable Unit ID: 930103
Operable Unit: 01
Material ID: 448877
Material Code: 0008
Material Name: diesel
Case No.: Not reported
Material FA: Petroleum
Quantity: -1.00
Units: L
Recovered: .00
Oxygenate: Not reported

Name: MIRON LUMBER
Address: 268 JOHNSON AVENUE
City,State,Zip: BROOKLYN, NY
Spill Number/Closed Date: 9913444 / 2009-01-14
Facility ID: 9913444
Site ID: 195776
Spill Date: 2000-02-28
Spill Cause: Tank Test Failure
Spill Source: Commercial/Industrial
Spill Class: B3
Cleanup Ceased: Not reported
SWIS: 2401
Investigator: hrpatel
Referred To: Not reported
Reported to Dept: 2000-02-28
CID: 257
Water Affected: Not reported
Spill Notifier: Tank Tester
Last Inspection: Not reported
Recommended Penalty: False
Meets Standard: False
UST Involvement: True
Remediation Phase: 0
Date Entered In Computer: 2000-02-28
Spill Record Last Update: 2009-01-21
Spiller Name: Not reported
Spiller Company: MIRON LUMBER
Spiller Address: 268 JOHNSON AVE
Spiller County: 001
Spiller Contact: MIKE MIRON
Spiller Phone: (718) 497-1111
Spiller Extention: Not reported
DEC Region: 2
DER Facility ID: 126314
DEC Memo: "Prior to Sept, 2004 data translation this spill Lead_DEC Field was ROMMEL 4/12/04-Vought-Spill transferred from Tomasello to Rommel as per Rommel. 3/28/05 - also see spill # 0103036 (found contaminated soil). KST July 2005 - Spill assigned to Maloney as part of the

CLOSED-LACKOF RECENT INFO (Continued) **U001839163**

Spills Initiative 7/28/05 - Spoke with Peter Reimann of Miron Lumber. He faxed over report of soil sampling (referenced in spill # 0103036) that was sent to EPA. Report indicated a clay/silt layer (above the water table) that had high levels of BTEX. -Maloney 8/1/05 - Spoke with Paul Sherwood of Phoenix Environmental Tech, Inc (author of the previously cited report). He stated that as far as he knew, no further work was done on the site. -Maloney 10/05 - Site was sent back to the Region for follow-up. - Maloney Albany review (above) - kamalone 1/29/07 - Austin - Transferred from Albany assignment to Patel in R-2 office for further work - end 03/02/07-Hiralkumar Patel. found soil investigation report. Phoenix Envinronmental submitted soil investigation report on 06/22/01. abstract: - did four borings around abandoned underground gasoline tank - borings B1 through B3 were advanced to 12 ft bg and B4 was advanced to approx. 16 ft bg - in borings B1, B2 and B3, the soil sample from 8 to 10 ft bg was collected for analysis - in boring B4, the sample exhibiting highest PID reading (7-8 ft, 1185 ppm) and the deepest sample (14-16 ft) were collected for analysis. - based on regional groundwater elevation and topographics maps, depth to groundwater is estimated to be approx. 25 ft - result for sample B4 (7-8 ft): ----------B4 benzene----------400 toluene----------19,000 ethylbenzene----------17,000 total xylene----------94,000 1,2,4 trimethylbenzene----23,000 1,3,5 trimethylbenzene----73,000 naphthalene----------17,000 03/09/07-Hiralkumar Patel. visited site on 03/08/07. met Manny at site. site occupies by Miron Lumber. currently site has following tanks at site (PBS #: 2-016217): 4000 gal gasoline UST 2000 gal diesel UST 275 gal lube oil AST in contact of soil 200 gal other oil AST on leg Owner of property: Darek Messing Miron Lumber Co. Inc. 268 Johnson Avenue Brooklyn, NY 11206-9028 PH. (718) 497-1111 Ext. 201 Fax (718) 366-0357 spoke with Manny today. he mentioned that current owner baught this property in 2003 and as per his knowledge they are using only one 2000 gal diesel tank. he doesn't know anything about 4000 gal gasoline UST. asked Manny to send scaled site plan for entire site including each tank location. also asked him to change PBS record information. sent subsurface investigation report to Manny (mannymiron2000@aol.com) which was submitted by PEI on 06/22/01. 03/13/07-Hiralkumar Patel. sent letter to Mr. Messing requiring soil/groundwater delineation, tank registration and surrounding area site plan with locations of all former/current USTs and associated pipings. letter faxed to Mr. Messing. 03/19/07-Hiralkumar Patel. received message from John Servider, owner's attorney. left message for John. John Servider Ph. (718) 894-6300 (O) (914) 879-5857 (C) Fax (718) 894-4417 03/23/07-Hiralkumar Patel. received call from John. he told that they have done phase II investigation before current owner baught this property. he will check record and will submit copy of that report. if no report found, owner will hire contractor for required work. 04/05/07-Hiralkumar Patel. received letter from John with copy of Phase II report, which was originally submitted by Phoenix envinromental. John requesting closure of spill based on findings in report (groundwater at about 25 ft, no contamination found in sample B4 at 14-16 ft, which found contaminated at depth 7-8 ft). left message for John requiring further work as per letter sent on 03/13/07. 04/19/07-Hiralkumar Patel. received message from John. spoke with John. explained him that DEC requires soil/groundwater delineation based on phase II report. he mentioned that they have done another Phase I recently, which he will send copy to DEC.

CLOSED-LACKOF RECENT INFO (Continued) **U001839163**

06/14/07-Hiralkumar Patel. left message for Mr. Messing to submit investigation report. 06/22/07-Hiralkumar Patel. received message from John Servinder, owner's attorney. left message for John. 07/25/07-Hiralkumar Patel. left message for John and Mr. Messing. 10/11/07-Hiralkumar Patel. left message for John and Mr. Messing. 11/02/07-Hiralkumar Patel. found PBS expired. <---------- sent CSL with STIP to Mr. Messing, after discussing with DEC Austin and DEC Urda. STIP faxed to Mr. Messing. 11/13/07-Hiralkumar Patel. received fax from John including signed STIP and cathodic protection survey result. 11/19/07-Hiralkumar Patel. sent copy of fully executed STIP to Mr. Messing. faxed copy to Mr. Messing and Mr. Servider. 01/22/08-Hiralkumar Patel. received call from Ted Yen (631-321-4670) from Protest asking regarding work required. explained Ted to find number of tanks at site and register any unregistered tank. second has to test each tank system for any leak. if testing not possible or finds leak, then requires soil and/or groundwater delineation and based on investigation report, may require RAP. asked Ted to talk to owner and ask to submit work plan for approval, prior to any work. 02/20/08-Hiralkumar Patel. left message for Mr. Messing. spoke with Bob at Protest. they sent proposal yesterday and waiting to hear back. 03/20/08-Hiralkumar Patel. spoke with Bob at Protest. they just got proposal signed. during conversation, Bob mentioned that Pheonix environmental called two spill reports for same problem; one after subsurface investigation and one after soil excavation. as per Bob, second spill number, which was reported during excavation, was closed out based on submitted documents. asked Bob to provide spill number. found following spill cases reported to subject site: 1. 8904846: reported on 08/15/1989 after tank test failure for 2000 gal diesel tank. case closed in lack of sufficient information 2. 0103036: reported on 06/19/2001 after findings of contaminated soil. case closed and referred to this open case. there are no reports submitted to above both cases and no proper cleanup/remediation performed after cases reported. during earlier site visit, owner's representative (Manny) mentioned that they are currently using one 2000 gal diesel tank only. now based on earlier cases, requires complete delienation around diesel tank also (as reported leaking before). spoke with Bob again. mentioned him that old closed cases were closed administratively and doesn't mean they satisfied state's requirements. Bob mentioned that all the tanks that are registered under 268 Johnson ave site, are actually spread in multiple parcels with different addresses. asked Bob to submit site map with all building and locations of tank, dispenser island and fill ports, before drafting work plan. alternate addresses: 264-266 Johnson Ave 268 Johnson Ave 270-272 Johnson Ave 274-278 Johnson Ave 300 Johnson Ave 04/08/08-Hiralkumar Patel. received fax from Bob from Protest including site map showing tank locations in reference to building addresses. as per fax from protest, site has total of five tanks as follow: - one 4000 gal diesel UST at 272 Johnson Ave, which is in service as per PBS record (PBS record shows it is gasoline tank) <----- - one 2000 gal diesel UST at 256 Johnson Ave, which is in service as per PBS record - one 200 gal hydraulic oil AST at 256 Johnson Ave, which is in service as per PBS record - one 300 gal motor oil AST at 256 Johnson Ave, which is in service as per PBS record (PBS record shows 275 gal AST) - one 1000 gal UST at 256 Johnson AVe, which is not in PBS list site map shows one 1000 gal UST at 256 Johnson ave, which is not listed in PBS record and PBS record shows one 550 gasoline UST which was closed-in place in 2000 and is

CLOSED-LACKOF RECENT INFO (Continued) **U001839163**

not included on map. left message for Bob at Protest. PBS registration hasn't renewed yet (04/08/08). received call from Bob. he mentioned that tank size information on map is what he got from owner. he hasn't measure any tank. so the tank which is abandoned in place could be 550 gal, which is recorded on PBS file. Bob mentioned that 2000 gal diesel tank at 256 Johnson ave is not in service, but not closed out properly. asked Bob for following work: - tightness test for 2000 gal diesel tank (as tank test failure reported earlier). if tank fails, he will pump out any product from tank. - regardless of tank test result, soil investigation around 2000 gal diesel UST - soil investigation along underground lines for 2000 gal diesel UST - soil investigation at remote fill port and dispenser island for 2000 gal diesel UST - soil investigation around 1000 (could be 550) gal abandoned tank also asked Bob to check whether 1000 gal tank was abandoned properly or not. and asked to find dispenser island and fill port for abandoned gasoline tank and if finds, then soil investigation at those locations also. Bob will submit proposal for required work. asked Bob to inform about proposal approval by April 18, 2008. 05/15/08-Hiralkumar Patel. received fax from Bob from Protest. they will do tank test for existing in-use tank and will investigate soil around tanks, lines, remote fill port and dispenser islands. will inspect previously abandoned tank also. work will start from May 30, 2008. 06/16/08-Hiralkumar Patel. received fax from Protest. they tested 2000 gal diesel tank and found wet leak. they also found oil/water separator while digging up the 1000 gal UST. found contaminated soil and liquid oil inside oil/water separator. couldn't inspect bottom of separator. found 1000 gal UST abandoned properly with concrete. spoke with Bob at protest. as per him, 2000 gal diesel tank doesn't have any product, but only contains sludge at bottom. will do isolation test once gets authorization. spoke with Anthony at Miron Lumber, who is handling site. asked Anthony to finish isolation test. Anthony Montalbano General Manager Miron Lumber Ph. (718) 497-1111 Ext. 202 (347) 219-0606 (C) fax (718) 418-4088 email: amontalbano@mironsupply.com 07/08/08-Hiralkumar Patel. spoke with Anthony. he mentioned that RAM did test. Anthony will call back with contact info at RAM. asked Anthony about soil investigation around tanks. he mentioned that they have signed contract with Protest and waiting for them. spoke with Bob at Protest. asked him about status of soil investigation. they were waiting for response from owner regarding isolation test and removal of oil/water seperator and other work, but hasn't heard yet. asked Bob to call back by end of tomorrow (07/09/08) to cofirm about futher work. 07/10/08-Hiralkumar Patel. received call from Bob from Protest. he tried to contact Anthony, but no success. 07/11/08-Hiralkumar Patel. spoke with Tom at Protest and Anthony at MIron Lumber. they had some miscommunication regarding signing contract and payment. Tom will submit work plan for soil delineation and schedule for such work, including isolation test, by end of 07/18/08. 07/21/08-Hiralkumar Patel. received email from DEC Urda with copy of Commissioner's order to Miron Lumber. the order was drafted on July 15, 2008 and as per the order, respondent must submit soil/groundwater delineation report within 30 days after service of this order. DEC Jacob mentioned that current gasoline tank at the site is totally illegal if single wall tank installed in 1989. he mentioned that if PBS record is accurate then tank must be pulled out immediately. he asked for meeting with responsible party. spoke with DEC Urda. he mentioned that responsible party has 30 days to respond

CLOSED-LACKOF RECENT INFO (Continued) **U001839163**

and if no response within 30 days, then legal will work on this case. he also mentioned that this is final order from Commissioner and doesn't need to send any further letter. 07/28/08-Hiralkumar Patel. received message from Bob from Protest. spoke with Bob. they tested 2000 gal diesel tank only and it passed. they also found vent and dispenser lines tight. found leak in remote fill line. will do soil investigation along fill line and also around tank. suggest Bob to go through Commissioner's order that responsible party might have by now. received fax from Bob with 2000 gal diesel tank isolation test record updates. 08/12/08-Hiralkumar Patel. spoke with Bob at Protest. they did soil delineation and will submit report by tomorrow. Bob spoke with owner regarding commissioner's order and owner mentioned to Bob that owner's attorney will work on it. Bob will ask owner to call the department regarding commissioner's order. 08/18/08-Hiralkumar Patel. spoke with Mr. Montalbano regarding commissioner's order. Mr. Montalbano mentioned that he didn't received any documents. got Mr. Montalbano's email address. spoke with DEC John. asked him if it is ok to send email to Mr. Montalbano with copy of commissioner's order. John asked to hold any action and he will talk to person in Albany. John will call back. 08/19/08-Hiralkumar Patel. received call from DEC Urda. he spoke with person in Albany and found that commissioner's order was served to site owner as well as their attroney and as they didn't responded within 30 days, they are in violation. Urda asked to send copy of Commissioner's order to Anthony via email and asked them to contact the department regarding payment of penalties and submission of investigation report. sent email to Anthony with copy of commissioner's order. asked him to contact me regarding investigation of spill incident and storage tank and to DEC Urda regarding violations. 08/22/08-Hiralkumar Patel. received call from DEC Urda. he asked to hand deliver commissioner's order to Anthony. visited site. hand delivered commissioner's order to Anthony. also asked him to contact DEC Jacob regarding tank registration information. 08/29/08-Hiralkumar Patel. received report from Protest. abstract: - did isolation test on 2000 gal diesel UST system: tank only, vent line and dispenser line passed - found removed fill line corroded at the connection to the tank and fill line failed test - tank was pumped and cleaned and the excavation was back filled in anticipation of legally abandoning the tank - performed soil delineation around 2000 gal diesel UST and 1000 gal previously abandoned UST, along length of the remote fill line every 5 ft - samples along fill line were collected from depth of 5 to 6 ft bg - samples around two tanks were collected from depth of 10 to 12 ft bg - tested 4000 gal diesel UST at 272 Johnson ave and system passed - no contamination found in any samples report missing following: - boring logs - sampling between tanks and remote fill for diesel tank - scaled site map with north arrow summary: - Bob from Protest mentioned on 06/16/08 that there was wet leak found in 2000 gal diesel UST. they also found oil/water separator while digging up the 1000 gal UST and found contamianted soil and liquid inside this oil/water separator. no information available regarding condition of oil/water separator bottom - according to subsurface investigation report from Phoenix, contamination was found in soil at boring B-4 in northwest corner of 1000 gal abandoned UST, at depth of 7-8 ft bg, but clean soil was found at 14-16 ft depth 09/05/08-Hiralkumar Patel. spoke with Bob at Protest regarding wet leak in 2000 gal tank, oil/water separator and sampling between tank and fill line location. Bob mentioned that they

CLOSED-LACKOF RECENT INFO (Continued) **U001839163**

found wet leak when they tested entire system for 2000 gal diesel tank, but during isolation test, they found that tank had about 8 inches of sludge and fill line was running to depth 6 inches above tank bottom (means fill line end was inside sludge) and as fill line had holes in it, it resulted into wet leak. regarding sampling between tank and remote fill line location, Bob told that remote fill line runs inside concrete conduit and there is no room for sampling between this concrete conduit and tank location. regarding oil/water separator, after removing oily water, Bob found concrete box in good condition with no cracks. Bob mentioned that oil/water separator is still open and they have proposed to abandon it properly with concrete slurry. asked Bob to submit boring logs and scaled site map (with location of oil/water separator and distance between tanks and remote fill line). 09/09/08-Hiralkumar Patel. signed affidavit of service (for delivery of commissioner's order), prepared by DEC Urda. 09/18/08-Hiralkumar Patel. left message for Bob to submit missing documents. 10/09/08-Hiralkumar Patel. received boring logs and site map (including oil/water seperator). boring log missing PID readings. spoke with Bob at Protest. asked him to submit boring log with PID values during borings. 10/14/08-Hiralkumar Patel. received borings logs from Bob. no high PID values found during borings. previous report from 2001 showed contamination in sample B-4 at 7-8 ft bg and that sample was taken between 1000 gal UST and oil/water seperator. during recent investigation, Protest did soil boring B-17 in same area to depth of 13 ft, but no contamination found. based on recent investigation report, no further action requires in terms of spill investigation or cleanup. 01/14/09-Hiralkumar Patel. discussed with DEC Urda. he asked to close case and he will follow up with property owner regarding violations. case closed."

Remarks: "test was aborted and near started"

All Materials:

Site ID:	195776
Operable Unit ID:	1087974
Operable Unit:	01
Material ID:	295292
Material Code:	0009
Material Name:	gasoline
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

SPILLS:

Name:	MIRON LUMBER
Address:	268 JOHNSON AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0103036 / 2005-03-28
Facility ID:	0103036
Facility Type:	ER
DER Facility ID:	126314
Site ID:	195775
DEC Region:	2
Spill Cause:	Unknown

CLOSED-LACKOF RECENT INFO (Continued) **U001839163**

Spill Class:	B3
SWIS:	2401
Spill Date:	2001-05-24
Investigator:	JMROMMEL
Referred To:	Not reported
Reported to Dept:	2001-06-19
CID:	281
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Other
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2001-06-19
Spill Record Last Update:	2005-03-28
Spiller Name:	PETER REIMANN
Spiller Company:	MIRON LUMBER
Spiller Address:	268 JOHNSON AVE
Spiller Company:	001
Contact Name:	PAUL SHERWOOD
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was ROMMEL See also 8904846. 3/28/05 - spill closed, refer to 9913444 for tracking. KST"
Remarks:	"SOIL SAMPLING AT ABOVE LOCATION REVEALS CONTAMINATION. PROBLEM APPEARS TO BE MINIMAL CALLER WILL FOLLOW UP WITH THE DEC REGIONAL OFFICE WITH FURTHER INFORMATION."

All Materials:

Site ID:	195775
Operable Unit ID:	841724
Operable Unit:	01
Material ID:	535134
Material Code:	0009
Material Name:	gasoline
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

289
NW
1/4-1/2
0.365 mi.
1929 ft.

345 TENEYCK STREET
345 TENEYCK STREET
BROOKLYN, NY

NY LTANKS **S102672003**
N/A

Relative:
Higher

Actual:
19 ft.

LTANKS:

Name:	345 TENEYCK STREET
Address:	345 TENEYCK STREET
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9210082 / 1992-12-01
Facility ID:	9210082
Site ID:	300237

345 TENEYCK STREET (Continued) **S102672003**

Spill Date:	1992-12-01
Spill Cause:	Tank Overfill
Spill Source:	Commercial/Industrial
Spill Class:	C3
Cleanup Ceased:	1992-12-01
SWIS:	2401
Investigator:	CAMMISA
Referred To:	Not reported
Reported to Dept:	1992-12-01
CID:	Not reported
Water Affected:	Not reported
Spill Notifier:	Other
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	True
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	1992-12-02
Spill Record Last Update:	1992-12-02
Spiller Name:	Not reported
Spiller Company:	Not reported
Spiller Address:	Not reported
Spiller County:	001
Spiller Contact:	Not reported
Spiller Phone:	Not reported
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	242863
DEC Memo:	""
Remarks:	"FAULTY PETROMETER-OIL OUT FILL PIPE TO CONCRETE SIDEWALK-SPEEDI-DRI APPLIED-SPILL TEAM ENROUTE TO P/U AND DISPOSE"

All Materials:

Site ID:	300237
Operable Unit ID:	974178
Operable Unit:	01
Material ID:	407093
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	5.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

AP290 **COOPER TANK RECYCLING** **NY SWF/LF** **S110367565**
WSW **201-203 MOORE STREET** **N/A**
1/4-1/2 **BROOKLYN, NY 11206**
0.374 mi.
1975 ft. **Site 3 of 3 in cluster AP**

Relative:
Lower

Actual:
18 ft.

SWF/LF:

Flag:	INACTIVE
Region Code:	2
Phone Number:	7184974431
Owner Name:	Not reported

COOPER TANK RECYCLING (Continued) **S110367565**

Owner Type:	Not reported
Owner Address:	Not reported
Owner Addr2:	Not reported
Owner City,St,Zip:	Not reported
Owner Email:	Not reported
Owner Phone:	Not reported
Contact Name:	Not reported
Contact Address:	Not reported
Contact Addr2:	Not reported
Contact City,St,Zip:	Not reported
Contact Email:	Not reported
Contact Phone:	Not reported
Activity Desc:	z Retired - Other - registration
Activity Number:	[24MG1]
Active:	No
East Coordinate:	589820
North Coordinate:	4506492
Accuracy Code:	1 - No accuracy stated
Regulatory Status:	Registration
Waste Type:	Not reported
Authorization #:	24MG1
Authorization Date:	Not reported
Expiration Date:	Not reported
Operator Name:	Not reported
Operator Type:	Not reported
Laste Date:	Not reported

AR291 **MESEROLE STREET RECYCLING INC./FILIBERTO RECYCLING** **NY SWRCY** **S105838144**
NE **568 MESEROLE STREET** **N/A**
1/4-1/2 **BROOKLYN, NY 11237**
0.377 mi.
1988 ft. **Site 1 of 2 in cluster AR**

Relative: **Lower**

Actual: **14 ft.**

SWRCY:

Region:	2
Facility Address 2:	Not reported
Phone Number:	7184565000
Owner Type:	Private
Owner Name:	Filiberto Recycling
Owner Address:	568 Meserole Street
Owner Address 2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11237
Owner Email:	Not reported
Owner Phone:	Not reported
Contact Name:	RUDOLPH FILIBERTO
Contact Address:	Not reported
Contact Address 2:	Not reported
Contact City,St,Zip:	Not reported
Contact Email:	Not reported
Contact Phone:	Not reported
Activity Desc:	z Retired - RHRF - registration
Activity Number:	[24MB5]
Active:	No
East Coordinate:	590803
North Coordinate:	4507257
Accuracy Code:	4.3 - Utilization of Digital Orthophoto Quads
Regulatory Status:	Permit
Permit #:	2-6104-00214

MESEROLE STREET RECYCLING INC./FILIBERTO RECYCLING (Continued) **S105838144**

Auth. Date: 03/21/2005
Expiration Date: 03/21/2010
Waste Types: Not reported
Operator Name: Not reported
Operator Type: Not reported
Last Date: Not reported

AQ292 **ANCHOR METAL CO.** **SEMS-ARCHIVE** **1014201493**
WSW **244 BOERUM STREET** **LEAD SMELTERS** **NYN000206652**
1/4-1/2 **BROOKLYN, NY 11206**
0.383 mi.
2021 ft. **Site 2 of 2 in cluster AQ**

Relative:
Lower

Actual:
17 ft.

SEMS Archive:
Site ID: 0206652
EPA ID: NYN000206652
Cong District: Not reported
FIPS Code: 36047
FF: N
NPL: Not on the NPL
Non NPL Status: Removal Only Site (No Site Assessment Work Needed)

SEMS Archive Detail:
Region: 02
Site ID: 0206652
EPA ID: NYN000206652
Site Name: ANCHOR METAL CO.
NPL: N
FF: N
OU: 00
Action Code: RS
Action Name: RV ASSESS
SEQ: 1
Start Date: 2014-06-10 05:00:00
Finish Date: 2014-06-10 05:00:00
Qual: Not reported
Current Action Lead: EPA Perf

Lead Smelter Sites:
Site ID: 206652
Facility Region Id: 2
Latitude: Not reported
Longitude: Not reported
CoC Ind: Not reported
Contaminant Name: Not reported
FF Ind: N
NAI: N
Non-Primary Site-Sub Type: Not reported
NPL: Not on the NPL
Primary Site-Sub Type: Batteries/scrap metals/secondary smelting/precious metal recovery (Recycling)
Special Initiative: Unrecognized Smelter per 2001 Report

Site number: 230
Street map and/or aerial photo: Y
Sanborn fire ins map ref.: Brooklyn 1904-8 v.9 # 35, 36
Comments: SMD1954

ANCHOR METAL CO. (Continued) **1014201493**

DJS match to SMD 48-49: Not reported

AS293 **BAYSIDE FUEL OIL DEPOT CORP.** **NY MOSF UST** **S102633581**
NNW **1100 GRAND STREET** **NY MOSF AST** **N/A**
1/4-1/2 **BROOKLYN, NY 11211**
0.397 mi.
2098 ft. **Site 1 of 2 in cluster AS**

Relative: **Lower**
Actual: **14 ft.**

MOSF UST:

Id/Status:	2-1280 / ACTIVE FACILITY
SWIS Code:	61
Facility Town:	NEW YORK CITY
Contact Phone:	(718) 387-6641
Emergency Contact:	VINCENT ALLEGRETTI
Emergency Telephone:	(718) 372-9800
CBS Number:	Not reported
SPDES Num:	0-007641
Total Tanks:	8
Total Capacity:	1651241
Avg Throughput:	130000
License Stat:	1
Facility Type:	STORAGE TERMINAL/PETROLEUM DISTRIBUTOR
Prod Xfer Options:	AC
Expiration Date:	03/31/2002
Applic Rcvd:	01/05/2001
Operator:	VINCENT ALLEGRETTI
Owner Name:	BAYSIDE FUEL OIL DEPOT CORP.
Owner Address:	1776 SHORE PARKWAY
Owner City,St,Zip:	BROOKLYN, NY 11214-
Owner Telephone:	(718) 372-9800
Owner Type:	Corporate/Commercial
Owner Status:	1
Owner Mark:	Second Owner
Mail To Name:	BAYSIDE FUEL OIL DEPOT CORP.
Mail To Address:	1776 SHORE PARKWAY
Mail To Address 2:	PO BOX 140128
Mail City,St,Zip:	BROOKLYN, NY 11214-0002
Mail To Contact:	VINCENT ALLEGRETTI
Mail To Telephone:	(718) 372-9800
Legal Agent Name:	ALFRED ALLEGRETTI
Legal Agent Address:	1776 SHORE PARKWAY
Legal Agent City,St,Zip:	BROOKLYN, NY 11214-
Date Filed:	03/65
Latitude:	14|42|45
Longitude:	73|55|45

Tank ID:	001
Tank Location:	UNDERGROUND
Install Date:	12/37
Capacity (Gal):	99960
Product:	NOS 1,2, OR 4 FUEL OIL
Tank Status:	In Service
Tank Type:	Steel/carbon steel
Tank Internal:	Epoxy Liner
Tank External:	Impressed Current
Pipe Location:	Aboveground
Pipe Type:	STEEL/IRON
Pipe Internal:	None

BAYSIDE FUEL OIL DEPOT CORP. (Continued) **S102633581**

Pipe External:	Painted/Asphalt Coating
Second Contain:	None
Leak Detection:	Groundwater Well
Overfill Protection:	42
Dispenser:	Suction
Test Date:	03/96
Date Closed:	Not reported
Status of Data:	Complete
Inspected Date:	07/13/1999
Inspector Initials:	GN
Inspector Status:	Not reported
Pipe Flag:	False
License Issued:	04/01/2001
Vessel Id:	Not reported
Renew Flag:	True
Renew Date:	10/31/2001
Federal Id No:	Not reported
COI Date:	/ /

Tank ID:	002
Tank Location:	UNDERGROUND
Install Date:	12/37
Capacity (Gal):	249984
Product:	NOS 1,2, OR 4 FUEL OIL
Tank Status:	In Service
Tank Type:	Steel/carbon steel
Tank Internal:	Epoxy Liner
Tank External:	Impressed Current
Pipe Location:	Aboveground
Pipe Type:	STEEL/IRON
Pipe Internal:	None
Pipe External:	Painted/Asphalt Coating
Second Contain:	None
Leak Detection:	Groundwater Well
Overfill Protection:	42
Dispenser:	Suction
Test Date:	03/96
Date Closed:	Not reported
Status of Data:	Complete
Inspected Date:	07/13/1999
Inspector Initials:	GN
Inspector Status:	Not reported
Pipe Flag:	False
License Issued:	04/01/2001
Vessel Id:	Not reported
Renew Flag:	True
Renew Date:	10/31/2001
Federal Id No:	Not reported
COI Date:	/ /

Tank ID:	003
Tank Location:	UNDERGROUND
Install Date:	12/37
Capacity (Gal):	149982
Product:	NOS 1,2, OR 4 FUEL OIL

BAYSIDE FUEL OIL DEPOT CORP. (Continued) **S102633581**

Tank Status:	In Service
Tank Type:	Steel/carbon steel
Tank Internal:	Epoxy Liner
Tank External:	Impressed Current
Pipe Location:	Aboveground
Pipe Type:	STEEL/IRON
Pipe Internal:	None
Pipe External:	Painted/Asphalt Coating
Second Contain:	None
Leak Detection:	Groundwater Well
Overfill Protection:	42
Dispenser:	Suction
Test Date:	03/96
Date Closed:	Not reported
Status of Data:	Complete
Inspected Date:	07/13/1999
Inspector Initials:	GN
Inspector Status:	Not reported
Pipe Flag:	False
License Issued:	04/01/2001
Vessel Id:	Not reported
Renew Flag:	True
Renew Date:	10/31/2001
Federal Id No:	Not reported
COI Date:	/ /

Tank ID:	004
Tank Location:	UNDERGROUND
Install Date:	12/37
Capacity (Gal):	249984
Product:	DIESEL
Tank Status:	In Service
Tank Type:	Steel/carbon steel
Tank Internal:	Epoxy Liner
Tank External:	Impressed Current
Pipe Location:	Aboveground
Pipe Type:	STEEL/IRON
Pipe Internal:	None
Pipe External:	Painted/Asphalt Coating
Second Contain:	None
Leak Detection:	Groundwater Well
Overfill Protection:	42
Dispenser:	Suction
Test Date:	03/96
Date Closed:	Not reported
Status of Data:	Complete
Inspected Date:	07/13/1999
Inspector Initials:	GN
Inspector Status:	Not reported
Pipe Flag:	False
License Issued:	04/01/2001
Vessel Id:	Not reported
Renew Flag:	True
Renew Date:	10/31/2001
Federal Id No:	Not reported
COI Date:	/ /

BAYSIDE FUEL OIL DEPOT CORP. (Continued) **S102633581**

Tank ID:	005
Tank Location:	UNDERGROUND
Install Date:	12/37
Capacity (Gal):	249984
Product:	DIESEL
Tank Status:	In Service
Tank Type:	Steel/carbon steel
Tank Internal:	Epoxy Liner
Tank External:	Impressed Current
Pipe Location:	Aboveground
Pipe Type:	STEEL/IRON
Pipe Internal:	None
Pipe External:	Painted/Asphalt Coating
Second Contain:	None
Leak Detection:	Groundwater Well
Overfill Protection:	42
Dispenser:	Suction
Test Date:	03/96
Date Closed:	Not reported
Status of Data:	Complete
Inspected Date:	07/13/1999
Inspector Initials:	GN
Inspector Status:	Not reported
Pipe Flag:	False
License Issued:	04/01/2001
Vessel Id:	Not reported
Renew Flag:	True
Renew Date:	10/31/2001
Federal Id No:	Not reported
COI Date:	/ /

Tank ID:	00A
Tank Location:	UNDERGROUND
Install Date:	12/65
Capacity (Gal):	550
Product:	EMPTY
Tank Status:	In Service
Tank Type:	Steel/carbon steel
Tank Internal:	None
Tank External:	None
Pipe Location:	Underground
Pipe Type:	STEEL/IRON
Pipe Internal:	None
Pipe External:	None
Second Contain:	None
Leak Detection:	Groundwater Well
Overfill Protection:	None
Dispenser:	Suction
Test Date:	01/88
Date Closed:	00/00
Status of Data:	Complete
Inspected Date:	07/13/1999
Inspector Initials:	GN
Inspector Status:	Not reported
Pipe Flag:	False
License Issued:	04/01/2001

BAYSIDE FUEL OIL DEPOT CORP. (Continued) **S102633581**

Vessel Id: Not reported
Renew Flag: True
Renew Date: 10/31/2001
Federal Id No: Not reported
COI Date: / /

Tank ID: 00B
Tank Location: UNDERGROUND
Install Date: 12/65
Capacity (Gal): 550
Product: EMPTY
Tank Status: In Service
Tank Type: Steel/carbon steel
Tank Internal: None
Tank External: None
Pipe Location: Underground
Pipe Type: STEEL/IRON
Pipe Internal: None
Pipe External: None
Second Contain: None
Leak Detection: Groundwater Well
Overfill Protection: None
Dispenser: Suction
Test Date: 01/88
Date Closed: 00/00
Status of Data: Complete
Inspected Date: 07/13/1999
Inspector Initials: GN
Inspector Status: Not reported
Pipe Flag: False
License Issued: 04/01/2001
Vessel Id: Not reported
Renew Flag: True
Renew Date: 10/31/2001
Federal Id No: Not reported
COI Date: / /

Tank ID: 00C
Tank Location: UNDERGROUND
Install Date: 12/65
Capacity (Gal): 550
Product: EMPTY
Tank Status: In Service
Tank Type: Steel/carbon steel
Tank Internal: None
Tank External: None
Pipe Location: Underground
Pipe Type: STEEL/IRON
Pipe Internal: None
Pipe External: None
Second Contain: None
Leak Detection: Groundwater Well
Overfill Protection: None
Dispenser: Suction
Test Date: 01/88

BAYSIDE FUEL OIL DEPOT CORP. (Continued) **S102633581**

Date Closed: 00/00
Status of Data: Complete
Inspected Date: 07/13/1999
Inspector Initials: GN
Inspector Status: Not reported
Pipe Flag: False
License Issued: 04/01/2001
Vessel Id: Not reported
Renew Flag: True
Renew Date: 10/31/2001
Federal Id No: Not reported
COI Date: / /

Tank ID: 00D
Tank Location: UNDERGROUND
Install Date: 12/65
Capacity (Gal): 550
Product: EMPTY
Tank Status: In Service
Tank Type: Steel/carbon steel
Tank Internal: None
Tank External: None
Pipe Location: Underground
Pipe Type: STEEL/IRON
Pipe Internal: None
Pipe External: None
Second Contain: None
Leak Detection: Groundwater Well
Overfill Protection: None
Dispenser: Suction
Test Date: 01/88
Date Closed: 00/00
Status of Data: Complete
Inspected Date: 07/13/1999
Inspector Initials: GN
Inspector Status: Not reported
Pipe Flag: False
License Issued: 04/01/2001
Vessel Id: Not reported
Renew Flag: True
Renew Date: 10/31/2001
Federal Id No: Not reported
COI Date: / /

Tank ID: OBF1
Tank Location: UNDERGROUND
Install Date: 00/00
Capacity (Gal): 2000
Product: EMPTY
Tank Status: In Service
Tank Type: Steel/carbon steel
Tank Internal: None
Tank External: None
Pipe Location: Underground
Pipe Type: STEEL/IRON

BAYSIDE FUEL OIL DEPOT CORP. (Continued) **S102633581**

Pipe Internal:	None
Pipe External:	None
Second Contain:	None
Leak Detection:	Groundwater Well
Overfill Protection:	None
Dispenser:	Not reported
Test Date:	Not reported
Date Closed:	00/00
Status of Data:	Minor Errors
Inspected Date:	07/13/1999
Inspector Initials:	GN
Inspector Status:	Not reported
Pipe Flag:	False
License Issued:	04/01/2001
Vessel Id:	Not reported
Renew Flag:	True
Renew Date:	10/31/2001
Federal Id No:	Not reported
COI Date:	/ /

Tank ID:	OPS
Tank Location:	UNDERGROUND
Install Date:	00/00
Capacity (Gal):	7200
Product:	EMPTY
Tank Status:	In Service
Tank Type:	Steel/carbon steel
Tank Internal:	None
Tank External:	None
Pipe Location:	Underground
Pipe Type:	STEEL/IRON
Pipe Internal:	None
Pipe External:	None
Second Contain:	None
Leak Detection:	Groundwater Well
Overfill Protection:	None
Dispenser:	Not reported
Test Date:	Not reported
Date Closed:	00/00
Status of Data:	Minor Errors
Inspected Date:	07/13/1999
Inspector Initials:	GN
Inspector Status:	Not reported
Pipe Flag:	False
License Issued:	04/01/2001
Vessel Id:	Not reported
Renew Flag:	True
Renew Date:	10/31/2001
Federal Id No:	Not reported
COI Date:	/ /

MOSF AST:

MOSF Number:	2-1280
SWIS Code:	61
Facility Town:	NEW YORK CITY
Facility Phone:	(718) 387-6641

BAYSIDE FUEL OIL DEPOT CORP. (Continued) **S102633581**

Emergency Contact Name:	VINCENT ALLEGRETTI
Emergency Contact Phone:	(718) 372-9800
Total Tanks:	8
Total Capacity:	1651241
Daily Throughput:	130000
License Status:	1
Facility Type:	STORAGE TERMINAL/PETROLEUM DISTRIBUTOR
Product Transfer Operation:	AC
Facility Status:	IN SERVICE
Operator Name:	VINCENT ALLEGRETTI
Owner Name:	BAYSIDE FUEL OIL DEPOT CORP.
Owner Address:	1776 SHORE PARKWAY
Owner City,St,Zip:	BROOKLYN, NY 11214-
Owner Phone:	(718) 372-9800
Owner Type:	Corporate/Commercial
Owner Status:	1
Owner Mark:	Second Owner
Mailing Name:	BAYSIDE FUEL OIL DEPOT CORP.
Mailing Address:	1776 SHORE PARKWAY
Mailing Address 2:	PO BOX 140128
Mailing City,St,Zip:	BROOKLYN, NY 11214-0002
Mailing Contact:	VINCENT ALLEGRETTI
Mailing Phone:	(718) 372-9800
Legal Agent Name:	ALFRED ALLEGRETTI
Legal Agent Address:	1776 SHORE PARKWAY
Legal Agent City,St,Zip:	BROOKLYN, NY 11214-
LIC Expires:	03/31/2002

Tank ID:	000
Tank Location:	ABOVEGROUND ON SADDLES LEGS, STILTS, RACK, OR CRADLE
Install Date:	12/88
Product:	EMPTY
Tank Type:	Steel/carbon steel
Tank Internal:	None
Tank External:	CATHODIC PROTECTION
Pipe Location:	Aboveground
Pipe Type:	Steel/Iron
Pipe Internal:	None
Pipe External:	Painted/Asphalt Coating
Secondary Containment:	None
Leak Detection:	Concrete Pad w/channels
Overfill Protection:	None
Dispensing Mthd:	Gravity
Test Date:	Not reported
Date Closed:	00/00
Status of Data:	Complete
Capacity (gal):	5000
Lat/Long:	14|42|45 / 73|55|45
Federal ID:	Not reported
Inspected Date:	07/13/1999
Inspector:	GN
Renew Date:	10/31/2001
Inspected State:	Not reported
Pipe Flag:	False
Vessel ID:	Not reported
Reserve Flag:	True
Tank Status:	In Service

BAYSIDE FUEL OIL DEPOT CORP. (Continued) **S102633581**

COI Date: / /
Date License Issued: 04/01/2001
Date License Application Received: 01/05/2001
Chemical Bulk Storage Number: Not reported
Pollution Discharge Elimination System Num: 0-007641
Date Legal Agent Filed with Secretary of State: 03/65

Tank ID: OBF
Tank Location: ABOVEGROUND ON SADDLES LEGS, STILTS, RACK, OR CRADLE
Install Date: 08/92
Product: NOS 1,2, OR 4 FUEL OIL
Tank Type: Steel/carbon steel
Tank Internal: None
Tank External: CATHODIC PROTECTION
Pipe Location: Aboveground
Pipe Type: Steel/Iron
Pipe Internal: None
Pipe External: Painted/Asphalt Coating
Secondary Containment: 81
Leak Detection: 53
Overfill Protection: 64
Dispensing Mthd: Suction
Test Date: Not reported
Date Closed: 08/92
Status of Data: Complete
Capacity (gal): 1080
Lat/Long: 14|42|45 / 73|55|45
Federal ID: Not reported
Inspected Date: 07/13/1999
Inspector: GN
Renew Date: 10/31/2001
Inspected State: Not reported
Pipe Flag: False
Vessel ID: Not reported
Reserve Flag: True
Tank Status: In Service
COI Date: / /
Date License Issued: 04/01/2001
Date License Application Received: 01/05/2001
Chemical Bulk Storage Number: Not reported
Pollution Discharge Elimination System Num: 0-007641
Date Legal Agent Filed with Secretary of State: 03/65

Tank ID: OBF-2
Tank Location: ABOVEGROUND
Install Date: 11/99
Product: NOS 1,2, OR 4 FUEL OIL
Tank Type: Steel/carbon steel
Tank Internal: None
Tank External: CATHODIC PROTECTION
Pipe Location: Aboveground
Pipe Type: Steel/Iron
Pipe Internal: None
Pipe External: Painted/Asphalt Coating
Secondary Containment: Impervious Underlayment

BAYSIDE FUEL OIL DEPOT CORP. (Continued) **S102633581**

Leak Detection:	None
Overfill Protection:	Vent Whistle
Dispensing Mthd:	Gravity
Test Date:	Not reported
Date Closed:	Not reported
Status of Data:	Complete
Capacity (gal):	275
Lat/Long:	14|42|45 / 73|55|45
Federal ID:	Not reported
Inspected Date:	07/13/1999
Inspector:	GN
Renew Date:	10/31/2001
Inspected State:	Not reported
Pipe Flag:	False
Vessel ID:	Not reported
Reserve Flag:	True
Tank Status:	In Service
COI Date:	/ /
Date License Issued:	04/01/2001
Date License Application Received:	01/05/2001
Chemical Bulk Storage Number:	Not reported
Pollution Discharge Elimination System Num:	0-007641
Date Legal Agent Filed with Secretary of State:	03/65

Tank ID:	006
Tank Location:	ABOVEGROUND
Install Date:	12/72
Product:	NOS 1,2, OR 4 FUEL OIL
Tank Type:	Steel/carbon steel
Tank Internal:	Epoxy Liner
Tank External:	FIBERGLASS REINFORCED PLASTIC
Pipe Location:	Aboveground
Pipe Type:	Steel/Iron
Pipe Internal:	None
Pipe External:	Painted/Asphalt Coating
Secondary Containment:	75
Leak Detection:	53
Overfill Protection:	42
Dispensing Mthd:	Suction
Test Date:	06/01
Date Closed:	Not reported
Status of Data:	Complete
Capacity (gal):	649992
Lat/Long:	14|42|45 / 73|55|45
Federal ID:	Not reported
Inspected Date:	07/13/1999
Inspector:	GN
Renew Date:	10/31/2001
Inspected State:	Not reported
Pipe Flag:	False
Vessel ID:	Not reported
Reserve Flag:	True
Tank Status:	In Service
COI Date:	/ /
Date License Issued:	04/01/2001
Date License Application Received:	01/05/2001

BAYSIDE FUEL OIL DEPOT CORP. (Continued) **S102633581**

Chemical Bulk Storage Number: Not reported
Pollution Discharge Elimination System Num: 0-007641
Date Legal Agent Filed with Secretary of State: 03/65

AS294 **BAYSIDE FUEL OIL DEPOT CORP.** **NY MOSF** **S102150611**
NNW **1100 GRAND STREET** **NY Spills** **N/A**
1/4-1/2 **BROOKLYN, NY 11211** **NY SPDES**
0.397 mi.
2098 ft. **Site 2 of 2 in cluster AS**

Relative:
Lower

Actual:
14 ft.

MOSF:
Name: BAYSIDE FUEL OIL DEPOT CORP.
Address: 1100 GRAND STREET
City,State,Zip: BROOKLYN, NY 11211
Facility ID: 2-1280
Program Type: MOSF
Tank Status: Active
Expiration Date: 03/31/2020
Dec Region: 2
UTMX: 590199.08129
UTMY: 4507510.10481

SPILLS:
Name: CIBRO TERMINAL
Address: 1100 GRAND STREET
City,State,Zip: BROOKLYN, NY
Spill Number/Closed Date: 9505983 / 2009-03-25
Facility ID: 9505983
Facility Type: ER
DER Facility ID: 119283
Site ID: 280171
DEC Region: 2
Spill Cause: Unknown
Spill Class: C3
SWIS: 2401
Spill Date: 1995-08-15
Investigator: LXZIELIN
Referred To: Not reported
Reported to Dept: 1995-08-15
CID: Not reported
Water Affected: Not reported
Spill Source: Major Facility (MOSF) > 400,000 gal
Spill Notifier: Responsible Party
Cleanup Ceased: Not reported
Cleanup Meets Std: False
Last Inspection: Not reported
Recommended Penalty: False
UST Trust: False
Remediation Phase: 0
Date Entered In Computer: 1995-09-11
Spill Record Last Update: 2009-03-25
Spiller Name: Not reported
Spiller Company: UNKNOWN
Spiller Address: Not reported
Spiller Company: 999
Contact Name: Not reported
DEC Memo: "03/25/09 - LZ According to Anna-Marie Franzese of Bayside Fuel Oil

BAYSIDE FUEL OIL DEPOT CORP. (Continued) **S102150611**

Depot, who inquired a facility's employee, during removal of an UST, contaminated soil of unknown quantity was disposed of. The spill case is closed. Prior to Sept, 2004 data translation this spill Lead_DEC Field was BREEN "

Remarks: "TANK REMOVAL - FOUND SOME CONTAMINATED SOIL - ESTIMATING SOME AMOUNT - GEORGE BREEN FROM DEC ON SITE"

All Materials:

Site ID:	280171
Operable Unit ID:	1020784
Operable Unit:	01
Material ID:	363971
Material Code:	0002A
Material Name:	#4 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	10.00
Units:	G
Recovered:	10.00
Oxygenate:	Not reported

Name:	CIBRO TERMINALS
Address:	1100 GRAND STREET
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9007551 / 2009-03-25
Facility ID:	9007551
Facility Type:	ER
DER Facility ID:	119283
Site ID:	139620
DEC Region:	2
Spill Cause:	Equipment Failure
Spill Class:	A3
SWIS:	2401
Spill Date:	1990-10-10
Investigator:	LXZIELIN
Referred To:	Not reported
Reported to Dept:	1990-10-10
CID:	Not reported
Water Affected:	KILLS
Spill Source:	Major Facility (MOSF) > 400,000 gal
Spill Notifier:	Responsible Party
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	1990-10-10
Spill Record Last Update:	2009-03-25
Spiller Name:	Not reported
Spiller Company:	CIBRO
Spiller Address:	Not reported
Spiller Company:	001
Contact Name:	Not reported
DEC Memo:	"03/25/09 - LZ The spill has been contained by employing booms and cleaned up. The spill case is closed. Prior to Sept, 2004 data translation this spill Lead_DEC Field was BREEN DEC SIGONA REASSIGNED

BAYSIDE FUEL OIL DEPOT CORP. (Continued) **S102150611**

TO GEORGE BREEN ON 1/23/98"
Remarks: "TANK OVERFILL, BARGE UNLOADING INTO 200K TANK, HUMAN ERROR CAUSED OVERFILL, AAA IS ON SITE TO CLEAN UP BOOMS HAVE BEEN DEPLOYED, USCG HAS BEEN NOTIFIED, NYCDEP & NYCFD ALSO NOTIFIED."

All Materials:
Site ID: 139620
Operable Unit ID: 948205
Operable Unit: 01
Material ID: 431403
Material Code: 0001A
Material Name: #2 fuel oil
Case No.: Not reported
Material FA: Petroleum
Quantity: 5000.00
Units: G
Recovered: .00
Oxygenate: Not reported

Name: CIBRO TERMINALS
Address: 1100 GRAND STREET
City,State,Zip: BROOKLYN, NY
Spill Number/Closed Date: 9104487 / 2009-03-25
Facility ID: 9104487
Facility Type: ER
DER Facility ID: 119283
Site ID: 139621
DEC Region: 2
Spill Cause: Equipment Failure
Spill Class: B3
SWIS: 2401
Spill Date: 1991-07-26
Investigator: LXZIELIN
Referred To: Not reported
Reported to Dept: 1991-07-26
CID: Not reported
Water Affected: Not reported
Spill Source: Major Facility (MOSF) > 400,000 gal
Spill Notifier: Responsible Party
Cleanup Ceased: Not reported
Cleanup Meets Std: False
Last Inspection: Not reported
Recommended Penalty: False
UST Trust: False
Remediation Phase: 0
Date Entered In Computer: 1991-07-29
Spill Record Last Update: 2009-03-25
Spiller Name: Not reported
Spiller Company: CIBRO
Spiller Address: Not reported
Spiller Company: 999
Contact Name: Not reported
DEC Memo: "03/25/09 - LZ Free product of unknown quantity has been extracted from the well. Presently, no monitoring well at the facility indicates the presence of free product (based on weekly and monthly reports on gauging of monitoring wells). The spill case is closed. . Prior to Sept, 2004 data translation this spill Lead_DEC Field was

BAYSIDE FUEL OIL DEPOT CORP. (Continued) **S102150611**

BREEN 11/18/94: REASSIGNED FROM SIGONA TO BREEN ON 11/18/94.
10/10/95: This is additional information about material spilled from
the translation of the old spill file: WEATHERED #2F.0."

Remarks: "DISCOVERED IN 4 SITE WELL #2"

All Materials:

Site ID:	139621
Operable Unit ID:	955257
Operable Unit:	01
Material ID:	423551
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

Name:	DRILL 1
Address:	1100 GRAND ST
City,State,Zip:	BROOKLYN, NY 11207
Spill Number/Closed Date:	1701952 / 2017-05-30
Facility ID:	1701952
Facility Type:	ER
DER Facility ID:	503704
Site ID:	550075
DEC Region:	2
Spill Cause:	Unknown
Spill Class:	E5
SWIS:	2401
Spill Date:	2017-05-30
Investigator:	RMPIPER
Referred To:	Not reported
Reported to Dept:	2017-05-30
CID:	Not reported
Water Affected:	NEW TOWN CREEK
Spill Source:	Chemical Bulk Storage Facility
Spill Notifier:	Other
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2017-05-30
Spill Record Last Update:	2017-05-30
Spiller Name:	DRILL FRANK
Spiller Company:	DRILL
Spiller Address:	1100 GRAND ST
Spiller Company:	999
Contact Name:	DRILL FRANK
DEC Memo:	"**********DRILL**********"
Remarks:	"DRILL DRILL DRILL"

All Materials:

Site ID:	550075

BAYSIDE FUEL OIL DEPOT CORP. (Continued) **S102150611**

Operable Unit ID:	1298154
Operable Unit:	01
Material ID:	2304303
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	2000.00
Units:	G
Recovered:	Not reported
Oxygenate:	Not reported

SPDES:

Permit Number:	NY0007641
State-Region:	2
Expiration Date:	12/31/2020
Current Major Minor Status:	Minor
Primary Facility SIC Code:	5171
State Water Body Name:	ENGLISH KILLS
Limit Set Status Flag:	Active
Total Actual Average Flow(MGD):	5.00000000
Total App Design Flow(MGD):	Not reported
UDF1:	DMR
Lat/Long:	40.713760 / 73.9320435
DMR Cognizant Official:	SCOTT VITELLO
UDF2:	001702
UDF3:	SD
FIPS County Code:	NY047

Non-Gov Permit Affiliation Type Desc:	Permittee
Non-Gov Permit Org Formal Name:	BAYSIDE FUEL OIL DEPOT CORPORATION
Non-Gov Permit Street Address:	1776 SHORE PKWY
Non-Gov Permit Supplemental Location:	Not reported
Non-Gov Permit City:	BROOKLYN
Non-Gov Permit State Code:	NY
Non-Gov Permit Zip Code:	11214
Non-Gov Facility Affiliation Type Desc:	Mailing Address
Non-Gov Facility Org Formal Name:	BAYSIDE FUEL OIL DEPOT CORP
Non-Gov Facility Street Address:	BAYSIDE FUEL OIL DEPOT-1100 GRAND STREET
Non-Gov Facility Supplemental Location:	1100 GRAND STREET
Non-Gov Facility City:	BROOKLYN
Non-Gov Facility State Code:	NY
Non-Gov Facility Zip Code:	11211
State Water Body:	02030201010

295
NNW
1/4-1/2
0.398 mi.
2103 ft.

DURITE S&V & MAINT. CORP. **NY SWF/LF** **S105841904**
250 MORGAN AVE **N/A**
BROOKLYN, NY 11237

Relative:
Lower

Actual:
16 ft.

SWF/LF:

Flag:	INACTIVE
Region Code:	2
Phone Number:	7184177271
Owner Name:	Not reported

DURITE S&V & MAINT. CORP. (Continued) **S105841904**

Owner Type:	Not reported
Owner Address:	Not reported
Owner Addr2:	Not reported
Owner City,St,Zip:	Not reported
Owner Email:	Not reported
Owner Phone:	Not reported
Contact Name:	STEVE RUSSEL; OWNER
Contact Address:	Not reported
Contact Addr2:	Not reported
Contact City,St,Zip:	Not reported
Contact Email:	Not reported
Contact Phone:	Not reported
Activity Desc:	z Retired - C&D processing - registration
Activity Number:	[24W67]
Active:	No
East Coordinate:	589000
North Coordinate:	4507200
Accuracy Code:	Not reported
Regulatory Status:	Permit
Waste Type:	Not reported
Authorization #:	2-6104-00016
Authorization Date:	05/21/1991
Expiration Date:	05/31/1996
Operator Name:	Not reported
Operator Type:	Not reported
Laste Date:	Not reported

AT296 **COMMERCIAL PROPERTY** **NY LTANKS** **S105998592**
West **1-7 BUSHWICK PLACE** **NY Spills** **N/A**
1/4-1/2 **BROOKLYN, NY**
0.400 mi.
2111 ft. **Site 1 of 2 in cluster AT**

Relative: **Higher**

Actual: **38 ft.**

LTANKS:

Name:	SPILL NUMBER 0300112
Address:	1-7 BUSHWICK PLACE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0300112 / 2004-03-24
Facility ID:	0300112
Site ID:	80495
Spill Date:	2003-04-02
Spill Cause:	Tank Test Failure
Spill Source:	Private Dwelling
Spill Class:	B3
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	SMSANGES
Referred To:	Not reported
Reported to Dept:	2003-04-03
CID:	205
Water Affected:	Not reported
Spill Notifier:	Responsible Party
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	2003-04-03

COMMERCIAL PROPERTY (Continued) **S105998592**

Spill Record Last Update:	2004-03-24
Spiller Name:	BRUCE FIFFER
Spiller Company:	1-7 BUSHWICK PL
Spiller Address:	1-7 BUSHWICK PL
Spiller County:	001
Spiller Contact:	CALLER
Spiller Phone:	Not reported
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	172718
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was SANGESLAND Cross Ref Spill #0311991 CALLED BRUCE FEFFER, WHO CONFIRMED TANK TEST FAILURE. REQUEST TANK TEST FAILURE LETTER BE ADDRESSED TO HIM, AT 61 BROADWAY SUITE # 1050 NEW YORK, NY 10006 Called Marc Ricciardi, who confirm tank test failure. However could not say whether tank is registered. Did give on- site contact person as Steffen, # (516) 790-5535. Tank Test failure letter was sent to BRUCE FEFFER, ON 4/3/2003. PS This tank is UNREGISTERED, Application Form was sent, so that tank can be REGISTERED. E.R. 10/15/2003 Charlie Schmidgall of Aggressive Envir. 5,000 gal Tank will be pulled within 60 days and DEC asked for 4 sidewall and 2 bottom samples. 3/24/2004 Sangesland spoke to Carla Weinpahl of ERM (212-447-1900) She said the client dropped Aggressive Environmental and switched over to ERM in late January 2004. Ms. Weinpahl stated that Aggressive had pulled the tank, did one round of samples, pulled more soil and did another round of samples. Results show some exceedences of PAH (SVOCs), but the argument is made that this is consistant with industrial fill in this part of Brooklyn. The DEC reviewed these numbers and compared them to the RSCO values on TAGM 4046. Based on this information and the present site use, the spill number 0300112 associated with the petroleum spill from the tank is closed out. Spill number 0311991 was associated with contamination found in another portion of the property. Organic Compounds identified as Chlorinated Solvents and Pesticides were found in sample R3656. Based on DEC Policy, the property owner and/or their consultant is directed to the state Brownfield Program. Not a spill report - property owner and/or consultant is referred to the Brownfield Cleanup Program website for futher information in having the DEC review the results from this site investigation See www.dec.state.ny.us/website/der/bcp/ "
Remarks:	""

All TTF:

Facility ID:	0300112
Spill Number:	0300112
Spill Tank Test:	1528229
Site ID:	80495
Tank Number:	1
Tank Size:	5000
Material:	0001
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	00
Test Method 2:	Unknown
Leak Rate:	.00
Gross Fail:	Not reported

COMMERCIAL PROPERTY (Continued) **S105998592**

Modified By: Spills
Last Modified Date: Not reported

All Materials:
Site ID: 80495
Operable Unit ID: 868416
Operable Unit: 01
Material ID: 508188
Material Code: 0001A
Material Name: #2 fuel oil
Case No.: Not reported
Material FA: Petroleum
Quantity: .00
Units: G
Recovered: .00
Oxygenate: Not reported

SPILLS:
Name: COMMERCIAL PROPERTY
Address: 1-7 BUSHWICK PLACE
City,State,Zip: BROOKLYN, NY
Spill Number/Closed Date: 0311991 / 2004-03-24
Facility ID: 0311991
Facility Type: ER
DER Facility ID: 172718
Site ID: 208165
DEC Region: 2
Spill Cause: Unknown
Spill Class: D4
SWIS: 2401
Spill Date: 2004-01-26
Investigator: SMSANGES
Referred To: Not reported
Reported to Dept: 2004-01-26
CID: 403
Water Affected: Not reported
Spill Source: Commercial/Industrial
Spill Notifier: Other
Cleanup Ceased: Not reported
Cleanup Meets Std: False
Last Inspection: Not reported
Recommended Penalty: False
UST Trust: False
Remediation Phase: 0
Date Entered In Computer: 2004-01-26
Spill Record Last Update: 2004-03-24
Spiller Name: Not reported
Spiller Company: Not reported
Spiller Address: Not reported
Spiller Company: 001
Contact Name: BRUCE FEFFER
DEC Memo: "Prior to Sept, 2004 data translation this spill Lead_DEC Field was SANGESLAND 1/26/2004 Sangesland spoke to Charlie Schmidgall of Agressive Environmental. There was a tank on one side of the property that failed a tank test (see spill #0300112). This tank was

COMMERCIAL PROPERTY (Continued) **S105998592**

registered and then pulled. After tank pull, minor oil contamination was found and removed. New problem appears to be heavy pesticides & solvents found in endpoints. 253 tons of soil have been pulled. PERC is present along with a hit for Dichlorobenzene (28,000ppb) There is no history of dry cleaners at/near the site, also no history of solvents. Sangesland spoke to Austin who said that there may have been a lab mixup. He suggested that another round of samples may be appropriate. This message was left on Agressive Environmental's answering machine. 3/24/2004 Sangesland spoke to Carla Weinpahl of ERM (212-447-1900) She said the client dropped Aggressive Environmental and switched over to ERM in late January 2004. Ms. Weinpahl stated that Aggressive had pulled the tank, did one round of samples, pulled more soil and did another round of samples. Results show some exceedences of PAH (SVOCs), but the argument is made that this is consistant with industrial fill in this part of Brooklyn. The DEC reviewed these numbers and compared them to the RSCO values on TAGM 4046. Based on this information and the present site use, the spill number 0300112 associated with the petroleum spill from the tank is closed out. Spill number 0311991 was associated with contamination found in another portion of the property. Organic Compounds identified as Chlorinated Solvents and Pesticides were found in sample R3656. Based on DEC Policy, the property owner and/or their consultant is directed to the state Brownfield Program: Not a spill report - property owner and/or consultant is referred to the Brownfield Cleanup Program website for further information in having the DEC review the results from this site investigation See: www.dec.state.ny.us/website/der/bcp/ "

Remarks: "an unknow amount of pseticides and solents spilled. none of it has been cleaned up. it was detected in the stars soil sample labrotory narrative."

All Materials:

Site ID:	208165
Operable Unit ID:	877222
Operable Unit:	01
Material ID:	497228
Material Code:	0057A
Material Name:	pesticides
Case No.:	Not reported
Material FA:	Other
Quantity:	.00
Units:	L
Recovered:	.00
Oxygenate:	Not reported

Site ID:	208165
Operable Unit ID:	877222
Operable Unit:	01
Material ID:	497229
Material Code:	0059A
Material Name:	solvents
Case No.:	Not reported
Material FA:	Other
Quantity:	.00
Units:	L
Recovered:	.00
Oxygenate:	Not reported

297
ENE
1/4-1/2
0.400 mi.
2112 ft.

F & W WOODWORK CO
1267 FLUSHING AVE
BROOKLYN, NY 11237

NY LTANKS **1000554921**
NY Spills **NYD986974129**
RCRA NonGen / NLR
NY MANIFEST

Relative:
Lower

Actual:
17 ft.

LTANKS:

Name:	1267 FLUSHING AVENUE
Address:	1267 FLUSHING AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9308847 / 1993-10-21
Facility ID:	9308847
Site ID:	60933
Spill Date:	1993-10-21
Spill Cause:	Tank Overfill
Spill Source:	Private Dwelling
Spill Class:	C3
Cleanup Ceased:	1993-10-21
SWIS:	2401
Investigator:	CAMMISA
Referred To:	Not reported
Reported to Dept:	1993-10-21
CID:	Not reported
Water Affected:	Not reported
Spill Notifier:	Responsible Party
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	True
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	1993-10-21
Spill Record Last Update:	2004-09-30
Spiller Name:	Not reported
Spiller Company:	BAERENKLAU FUEL OIL CO.
Spiller Address:	740 JAMAICA AVENUE
Spiller County:	001
Spiller Contact:	Not reported
Spiller Phone:	Not reported
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	59401
DEC Memo:	""
Remarks:	"SPEEDY DRY USED."

All Materials:

Site ID:	60933
Operable Unit ID:	987772
Operable Unit:	01
Material ID:	570164
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	2.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

F & W WOODWORK CO (Continued) **1000554921**

SPILLS:

Name:	1267 FLUSHING AVE/C F & W
Address:	1267 FLUSHING AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9110833 / 2001-11-07
Facility ID:	9110833
Facility Type:	ER
DER Facility ID:	59401
Site ID:	72106
DEC Region:	2
Spill Cause:	Human Error
Spill Class:	C4
SWIS:	2401
Spill Date:	1991-08-23
Investigator:	TOMASELLO
Referred To:	Not reported
Reported to Dept:	1992-01-17
CID:	Not reported
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Other
Cleanup Ceased:	2001-11-07
Cleanup Meets Std:	True
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	1992-02-06
Spill Record Last Update:	2001-11-07
Spiller Name:	Not reported
Spiller Company:	Not reported
Spiller Address:	Not reported
Spiller Company:	001
Contact Name:	Not reported
DEC Memo:	""
Remarks:	"TONE CLEANING; NYCDEP ISSUED CLEANUP ORDER."

RCRA NonGen / NLR:

Date form received by agency:	01/01/2007
Facility name:	F & W WOODWORK CO
Facility address:	1267 FLUSHING AVE BROOKLYN, NY 11237-2302
EPA ID:	NYD986974129
Mailing address:	FLUSHING AVE BROOKLYN, NY 11237
Contact:	Not reported
Contact address:	FLUSHING AVE BROOKLYN, NY 11237
Contact country:	US
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	02
Land type:	Facility is not located on Indian land. Additional information is not known.
Classification:	Non-Generator
Description:	Handler: Non-Generators do not presently generate hazardous waste

F & W WOODWORK CO (Continued) **1000554921**

Owner/Operator Summary:
Owner/operator name: FRANZ FISCHER
Owner/operator address: UNKNOWN
UNKNOWN, NY 99999
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: FRANZ FISCHER
Owner/operator address: UNKNOWN
UNKNOWN, NY 99999
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2006
Site name: F & W WOODWORK CO
Classification: Not a generator, verified

Date form received by agency: 07/08/1999
Site name: F & W WOODWORK CO
Classification: Not a generator, verified

Date form received by agency: 08/21/1991
Site name: F & W WOODWORK CO
Classification: Large Quantity Generator

F & W WOODWORK CO (Continued) **1000554921**

Hazardous Waste Summary:

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Violation Status: No violations found

Evaluation Action Summary:
Evaluation date: 12/16/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

NY MANIFEST:
Country: USA
EPA ID: NYD986974129
Facility Status: Not reported
Location Address 1: 1267 FLUSHING AVE
Code: BP
Location Address 2: Not reported
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: 11237
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYD986974129
Mailing Name: F W WOODWORK
Mailing Contact: RAY CRUZ
Mailing Address 1: 1267 FLUSHING AVE
Mailing Address 2: Not reported
Mailing City: BROOKLYN
Mailing State: NY
Mailing Zip: 11237
Mailing Zip 4: Not reported
Mailing Country: USA
Mailing Phone: 7188211300

NY MANIFEST:
Document ID: NYB8567568
Manifest Status: Not reported
seq: 01
Year: 2001

F & W WOODWORK CO (Continued) **1000554921**

Trans1 State ID:	AE53109PA
Trans2 State ID:	Not reported
Generator Ship Date:	05/04/2001
Trans1 Recv Date:	05/04/2001
Trans2 Recv Date:	05/08/2001
TSD Site Recv Date:	05/10/2001
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYD986974129
Trans1 EPA ID:	PAD987358587
Trans2 EPA ID:	FLD980559728
TSDF ID 1:	GAD093380814
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	F003 - UNKNOWN
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	00030
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	001
Container Type:	DM - Metal drums, barrels
Handling Method:	B Incineration, heat recovery, burning.
Specific Gravity:	01.00

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

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298 **TECHNICAL METAL FINISHERS** **SEMS-ARCHIVE** **1003864057**
ESE **214 STARR STREET** **NY SHWS** **NYD980780894**
1/4-1/2 **BROOKLYN, NY 11237**
0.405 mi.
2141 ft.

Relative:
Higher

Actual:
34 ft.

SEMS Archive:

Site ID:	0202279
EPA ID:	NYD980780894
Cong District:	11
FIPS Code:	36047
FF:	N
NPL:	Not on the NPL
Non NPL Status:	NFRAP-Site does not qualify for the NPL based on existing information

SEMS Archive Detail:

TECHNICAL METAL FINISHERS (Continued) **1003864057**

Region:	02
Site ID:	0202279
EPA ID:	NYD980780894
Site Name:	TECHNICAL METAL FINISHERS
NPL:	N
FF:	N
OU:	00
Action Code:	VS
Action Name:	ARCH SITE
SEQ:	1
Start Date:	Not reported
Finish Date:	1997-09-30 04:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf In-Hse

Region:	02
Site ID:	0202279
EPA ID:	NYD980780894
Site Name:	TECHNICAL METAL FINISHERS
NPL:	N
FF:	N
OU:	00
Action Code:	SI
Action Name:	SI
SEQ:	1
Start Date:	1985-05-01 05:00:00
Finish Date:	1985-05-31 05:00:00
Qual:	L
Current Action Lead:	St Perf

Region:	02
Site ID:	0202279
EPA ID:	NYD980780894
Site Name:	TECHNICAL METAL FINISHERS
NPL:	N
FF:	N
OU:	00
Action Code:	DS
Action Name:	DISCVRY
SEQ:	1
Start Date:	1984-09-01 05:00:00
Finish Date:	1984-09-01 05:00:00
Qual:	Not reported
Current Action Lead:	St Perf

Region:	02
Site ID:	0202279
EPA ID:	NYD980780894
Site Name:	TECHNICAL METAL FINISHERS
NPL:	N
FF:	N
OU:	00
Action Code:	PA
Action Name:	PA
SEQ:	1
Start Date:	Not reported
Finish Date:	1984-09-01 05:00:00

TECHNICAL METAL FINISHERS (Continued) **1003864057**

Qual: L
Current Action Lead: St Perf

SHWS:
Name: TECHNICAL METAL FINISHERS
Address: 214 STARR STREET
City,State,Zip: BROOKLYN, NY
Program: HW
Site Code: 57764
Classification: C
Region: 2
Acres: Not reported
HW Code: 224008
Record Add: 11/18/1999
Record Upd: 03/23/2007
Updated By: dcwalsh
Site Description: The Technical Metal Finishers Company was a plating company located in a light industrial/residential area. The company is out of business and the site is abandoned. The site was discovered in June 1982 when a fire occurred at the abandoned plant. The facility contained waste acids, caustics and cyanides stored in tanks and drums. The wastes contained in the tanks and drums were removed by a contractor hired by NYC Dept. of Environmental Protection. Clean up has been initiated by NYC Dept. of Environmental Protection through contract with Radiac Research Corporation. All tanks and debris have been removed from site and soil has been excavated. The building was demolished, and all work has been completed.
Env Problem: The site was delisted from the Registry as removal action conducted at the site has removed all hazardous waste.
Health Problem: NYSDOH has insufficient information to fully evaluate the potential for human exposures.
Dump: False
Structure: True
Lagoon: False
Landfill: False
Pond: False
Disp Start: unknown
Disp Term: unknown
Lat/Long: 40:42:22:0 / 73:55:22:0
Dell: False
Record Add: 1999-11-18 12:00:00
Record Upd: 1999-11-18 12:00:00
Updated By: INITIAL
Own Op: Disp. Owner
Sub Type: NNN
Owner Name: Not reported
Owner Company: AL ROZELL
Owner Address: Not reported
Owner Addr2: Not reported
Owner City,St,Zip: ZZ
Owner Country: United States of America
Own Op: Owner
Sub Type: C01
Owner Name: Not reported
Owner Company: AL ROZELL
Owner Address: Not reported

TECHNICAL METAL FINISHERS (Continued) **1003864057**

Owner Addr2:	Not reported
Owner City,St,Zip:	ZZ
Owner Country:	United States of America
HW Code:	224008
Waste Type:	POSSIBLE CONTAMINATED FLOOR BOARDS
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	224008
Waste Type:	AND SOIL AT SITE.
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
Crossref ID:	11
Cross Ref Type Code:	15
Cross Ref Type:	Congressional District
Record Added Date:	1999-11-18 12:00:00
Record Updated:	2005-02-24 15:54:00
Updated By:	INITIAL
Crossref ID:	NYD980780894
Cross Ref Type Code:	05
Cross Ref Type:	EPA Site ID
Record Added Date:	1999-11-18 12:00:00
Record Updated:	2001-05-10 16:31:00
Updated By:	REGTRANS
Crossref ID:	020
Cross Ref Type Code:	13
Cross Ref Type:	Senate District
Record Added Date:	1999-11-18 12:00:00
Record Updated:	2005-02-24 15:54:00
Updated By:	INITIAL

AR299 **ALLOCCO RECYCLING (606 MESEROLE)** **NY SWRCY** **S121133113**
NE **606 MESEROLE STREET** **N/A**
1/4-1/2 **BROOKLYN, NY 11237**
0.409 mi.
2162 ft. **Site 2 of 2 in cluster AR**

Relative:
Lower

Actual:
14 ft.

SWRCY:

Region:	2
Facility Address 2:	Not reported
Phone Number:	7183493094
Owner Type:	Private
Owner Name:	Michael ALLOCCO
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Owner Email:	MIKE@alloccorecycling.com
Owner Phone:	7183493097
Contact Name:	Michael Allocco
Contact Address:	540 Kingsland Avenue
Contact Address 2:	Not reported
Contact City,St,Zip:	Brooklyn, NY 11222
Contact Email:	Not reported
Contact Phone:	7183493094
Activity Desc:	z Retired - RHRF - registration
Activity Number:	[24MH2]
Active:	Yes
East Coordinate:	11111
North Coordinate:	11111

ALLOCCO RECYCLING (606 MESEROLE) (Continued) **S121133113**

Accuracy Code:	1 - No accuracy stated
Regulatory Status:	Registration
Permit #:	Not reported
Auth. Date:	Not reported
Expiration Date:	Not reported
Waste Types:	Not reported
Operator Name:	Not reported
Operator Type:	Not reported
Last Date:	2017-10-03 00:00:00

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300 NW 1/4-1/2 0.413 mi. 2182 ft.

308 MAUJER ST
308 MAUJER ST
BROOKLYN, NY

NY LTANKS **S105999626**
N/A

Relative: Higher

Actual: 29 ft.

LTANKS:

Name:	308 MAUJER ST
Address:	308 MAUJER ST
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0305120 / 2006-01-31
Facility ID:	0305120
Site ID:	144741
Spill Date:	2003-08-14
Spill Cause:	Tank Test Failure
Spill Source:	Commercial/Industrial
Spill Class:	B3
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	JBLISTER
Referred To:	Not reported
Reported to Dept:	2003-08-14
CID:	216
Water Affected:	Not reported
Spill Notifier:	Responsible Party
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	2003-08-14
Spill Record Last Update:	2006-01-31
Spiller Name:	Not reported
Spiller Company:	FRED GELFAR
Spiller Address:	Not reported
Spiller County:	001
Spiller Contact:	FRED GELFAR
Spiller Phone:	(516) 455-4775
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	123363
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was SANGESLAND Will send a TTF as soon as RP provides a proper mailing address 8/19/2003 TTF Letter sent to: Fred Gelfar 2941 Charlotte Drive Merrick, NY 11566 1/31/06 Received copy of 10/04/04 tighteness report showing tank passed. Closed spill out based on report. J Lister"
Remarks:	"TANK TEST FAILURE THEY WILL RETEST "

308 MAUJER ST (Continued) **S105999626**

All TTF:

Facility ID:	0305120
Spill Number:	0305120
Spill Tank Test:	1528589
Site ID:	144741
Tank Number:	1
Tank Size:	2000
Material:	Not reported
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	03
Test Method 2:	Horner EZ Check I or II
Leak Rate:	.00
Gross Fail:	Not reported
Modified By:	Spills
Last Modified Date:	Not reported

AU301 **NEW TOWN AUTO SALES & AUTO PARTS INC** **NY SWF/LF** **S108146024**
NNW **1074 GRAND STREET** **NY SPDES** **N/A**
1/4-1/2 **BROOKLYN, NY 11211**
0.416 mi.
2197 ft. **Site 1 of 2 in cluster AU**

Relative:
Lower

Actual:
13 ft.

SWF/LF:

Flag:	ACTIVE
Region Code:	2
Phone Number:	7185992300
Owner Name:	New Town Used Auto Sales & Auto Parts Inc
Owner Type:	Private
Owner Address:	1074 Grand Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11211
Owner Email:	Not reported
Owner Phone:	7185992300
Contact Name:	Frederick Kirschbaum
Contact Address:	Not reported
Contact Addr2:	Not reported
Contact City,St,Zip:	NY
Contact Email:	Not reported
Contact Phone:	7185992300
Activity Desc:	z Retired - Vehicle Dismantling Facility
Activity Number:	[7096848]
Active:	Yes
East Coordinate:	590144
North Coordinate:	4507507
Accuracy Code:	Not reported
Regulatory Status:	Not reported
Waste Type:	Not reported
Authorization #:	Not reported
Authorization Date:	Not reported
Expiration Date:	Not reported
Operator Name:	Not reported
Operator Type:	Not reported
Laste Date:	Not reported

NEW TOWN AUTO SALES & AUTO PARTS INC (Continued) **S108146024**

SPDES:

Permit Number:	NYR00E019
State-Region:	02
Expiration Date:	09/30/2017
Current Major Minor Status:	Minor
Primary Facility SIC Code:	5015
State Water Body Name:	ENGLISH KILLS
Limit Set Status Flag:	Active
Total Actual Average Flow(MGD):	Not reported
Total App Design Flow(MGD):	Not reported
UDF1:	Not reported
Lat/Long:	+40.713 / -73.933
DMR Cognizant Official:	Not reported
UDF2:	Not reported
UDF3:	Not reported
FIPS County Code:	NY047
Non-Gov Permit Affiliation Type Desc:	DMR Mailing Address
Non-Gov Permit Org Formal Name:	TABS CONSULTING GROUP INC
Non-Gov Permit Street Address:	NEW TOWN USED AUTO SALES & PARTS INC
Non-Gov Permit Supplemental Location:	2 52ND ST, BOX B11
Non-Gov Permit City:	BROOKLYN
Non-Gov Permit State Code:	NY
Non-Gov Permit Zip Code:	11223
Non-Gov Facility Affiliation Type Desc:	Owner
Non-Gov Facility Org Formal Name:	NEW TOWN USED AUTO SALES & PARTS INC
Non-Gov Facility Street Address:	NEW TOWN USED AUTO SALES & PARTS INC
Non-Gov Facility Supplemental Location:	1074 GRAND ST
Non-Gov Facility City:	BROOKLYN
Non-Gov Facility State Code:	NY
Non-Gov Facility Zip Code:	11211
State Water Body:	Not reported
UDF2:	Not reported
UDF3:	Not reported
FIPS County Code:	NY047
Non-Gov Permit Affiliation Type Desc:	Permittee
Non-Gov Permit Org Formal Name:	NEW TOWN USED AUTO SALES AND AUTO PARTS INC
Non-Gov Permit Street Address:	1074 GRAND ST
Non-Gov Permit Supplemental Location:	Not reported
Non-Gov Permit City:	BROOKLYN
Non-Gov Permit State Code:	NY
Non-Gov Permit Zip Code:	11211
Non-Gov Facility Affiliation Type Desc:	Owner
Non-Gov Facility Org Formal Name:	NEW TOWN USED AUTO SALES & PARTS INC
Non-Gov Facility Street Address:	NEW TOWN USED AUTO SALES & PARTS INC
Non-Gov Facility Supplemental Location:	1074 GRAND ST
Non-Gov Facility City:	BROOKLYN
Non-Gov Facility State Code:	NY
Non-Gov Facility Zip Code:	11211
State Water Body:	Not reported
UDF2:	Not reported
UDF3:	Not reported
FIPS County Code:	NY047

NEW TOWN AUTO SALES & AUTO PARTS INC (Continued) **S108146024**

Non-Gov Permit Affiliation Type Desc:	Not reported
Non-Gov Permit Org Formal Name:	Not reported
Non-Gov Permit Street Address:	Not reported
Non-Gov Permit Supplemental Location:	Not reported
Non-Gov Permit City:	Not reported
Non-Gov Permit State Code:	Not reported
Non-Gov Permit Zip Code:	Not reported
Non-Gov Facility Affiliation Type Desc:	Owner
Non-Gov Facility Org Formal Name:	NEW TOWN USED AUTO SALES & PARTS INC
Non-Gov Facility Street Address:	NEW TOWN USED AUTO SALES & PARTS INC
Non-Gov Facility Supplemental Location:	1074 GRAND ST
Non-Gov Facility City:	BROOKLYN
Non-Gov Facility State Code:	NY
Non-Gov Facility Zip Code:	11211
State Water Body:	Not reported

AV302 **BROWNING FERRIS** **NY SWF/LF** **S102639161**
ENE **72 SCOTT AVE** **NY LTANKS** **N/A**
1/4-1/2 **BROOKLYN, NY 11237** **NY CBS**
0.422 mi. **NY CBS AST**
2229 ft. **Site 1 of 3 in cluster AV** **NY SWRCY**
NY Spills
Relative: **NY MANIFEST**
Lower **NY SPDES**

Actual:
15 ft.

SWF/LF:

Flag:	INACTIVE
Region Code:	2
Phone Number:	7184974000
Owner Name:	Not reported
Owner Type:	Not reported
Owner Address:	Not reported
Owner Addr2:	Not reported
Owner City,St,Zip:	Not reported
Owner Email:	Not reported
Owner Phone:	Not reported
Contact Name:	RUSS KRUK
Contact Address:	Not reported
Contact Addr2:	Not reported
Contact City,St,Zip:	Not reported
Contact Email:	Not reported
Contact Phone:	Not reported
Activity Desc:	z Retired - Transfer station - permit
Activity Number:	[24T99]
Active:	No
East Coordinate:	590900
North Coordinate:	4507300
Accuracy Code:	Not reported
Regulatory Status:	Not reported
Waste Type:	Not reported
Authorization #:	2-6101-00120
Authorization Date:	01/07/1991
Expiration Date:	01/31/2002
Operator Name:	Not reported
Operator Type:	Not reported
Laste Date:	Not reported

LTANKS:

BROWNING FERRIS (Continued) **S102639161**

Name:	BROWNING FERRIS INDUSTRIA
Address:	72 SCOTT AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9703477 / 1997-06-25
Facility ID:	9703477
Site ID:	144360
Spill Date:	1997-06-20
Spill Cause:	Tank Failure
Spill Source:	Commercial Vehicle
Spill Class:	C4
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	SMMARTIN
Referred To:	Not reported
Reported to Dept:	1997-06-20
CID:	312
Water Affected:	Not reported
Spill Notifier:	Affected Persons
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	1997-06-20
Spill Record Last Update:	1997-06-26
Spiller Name:	Not reported
Spiller Company:	TRUCK-LOAD EXPRESS
Spiller Address:	901 KCK WAY
Spiller County:	001
Spiller Contact:	TIM HORKAY
Spiller Phone:	(718) 497-1282
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	166356
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was MARTINKAT "
Remarks:	"PRIVATE HAULER HAD A RUPTURED FUEL TANK IN THE YARD OF BFI - CLEANED UP"

All Materials:

Site ID:	144360
Operable Unit ID:	1049436
Operable Unit:	01
Material ID:	336359
Material Code:	0008
Material Name:	diesel
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	25.00
Units:	G
Recovered:	25.00
Oxygenate:	Not reported

Name:	72 SCOTT AVE
Address:	72 SCOTT AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9708693 / 2004-10-20

BROWNING FERRIS (Continued) **S102639161**

Facility ID:	9708693
Site ID:	144361
Spill Date:	1997-10-24
Spill Cause:	Tank Test Failure
Spill Source:	Commercial/Industrial
Spill Class:	B3
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	SMSANGES
Referred To:	Not reported
Reported to Dept:	1997-10-24
CID:	322
Water Affected:	Not reported
Spill Notifier:	Tank Tester
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	1997-10-24
Spill Record Last Update:	2004-10-20
Spiller Name:	TYREE
Spiller Company:	BFI - 72 SCOTT
Spiller Address:	72 SCOTT AVE
Spiller County:	001
Spiller Contact:	TYREE - GINA
Spiller Phone:	(516) 249-3150
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	166356
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was AUSTIN 3/11/03 - SAMUEL- File available in active unassigned spill files. 8/18/2004 Consultant called to say there is a DEC Consent Order on this site which covers the tank. Tank was closed in place. Sangesland requested copies of soil boring/testing done under the tank to prove it is clean. When this information is submitted, DEC will closed the case out. 9/14/2004 Consultant called to say they can not find any historical soil boring work, so they have contracted with Impact Environmental to do new soil borings around the tank and sample them to EPA Method 8260. 10/14/2004 Sangesland reviewed a submittal from Maureen Frazier of Schillinger Environmental. They have hired Impact Environmental to do soil borings. A report should be submitted to DEC by 10/29/2004. 10/20/2004 Impact Environmental called in a new spill on the site. Found Diesel contaminated Soil Ref Spill #0408008 Both of these spills 0408008 and 9708693 have been closed and referred back to the original spill # 9702085 -"
Remarks:	""

All TTF:

Facility ID:	9708693
Spill Number:	9708693
Spill Tank Test:	1545422
Site ID:	144361
Tank Number:	1
Tank Size:	4000
Material:	Not reported
EPA UST:	Not reported
UST:	Not reported

BROWNING FERRIS (Continued) **S102639161**

Cause:	Not reported
Source:	Not reported
Test Method:	20
Test Method 2:	USTest 2000/P/LL plus USTest 2000/U
Leak Rate:	.00
Gross Fail:	F
Modified By:	Spills
Last Modified Date:	Not reported

CBS:

Name:	BROOKLYN STEEL & TUBE CORPORATION
Address:	72 SCOTT AVENUE
City,State,Zip:	BROOKLYN, NY 11237
CBS Number:	2-000150
Program Type:	CBS
Facility Status:	Unregulated/Closed
Expiration Date:	Not reported
Dec Region:	2
UTMX:	591001.96319
UTMY:	4507115.43932

CBS AST:

CBS Number:	2-000150
ICS Number:	2-125074
PBS Number:	Not reported
MOSF Number:	Not reported
SPDES Number:	Not reported
Facility Status:	IN SERVICE
Facility Type:	D
Telephone:	(718) 497-2100
Facility Town:	NEW YORK CITY
Region:	STATE
Expiration Date:	07/19/1991
Total Capacity of All Active Tanks(gal):	0
Operator:	R.M. HANNA
Emergency Contact:	R.F. FINLEY
Emergency Phone:	(718) 497-2100
Owner Name:	BROOKLYN STEEL & TUBE CORPORATION
Owner Address:	72-88 SCOTT AVE.
Owner City,St,Zip:	BROOKLYN, NY 11237
Owner Telephone:	(718) 497-2100
Owner Type:	Corporate/Commercial
Owner Sub Type:	Not reported
Mail Name:	BROOKLYN STEEL & TUBE CORPORATION
Mail Contact Addr:	72-88 SCOTT AVE.
Mail Contact Addr2:	Not reported
Mail Contact Contact:	R.F. FINLEY
Mail Contact City,St,Zip:	BROOKLYN, NY 11237
Mail Phone:	(718) 497-2100

Tank Id:	1
CAS Number:	7664939
Federal ID:	Not reported
Tank Status:	Not reported
Install Date:	04/52

BROWNING FERRIS (Continued) **S102639161**

Tank Closed:	11/90
Capacity (Gal):	15000
Chemical:	Sulfuric acid
Tank Location:	Indoors, Belowground
Tank Type:	Steel/carbon steel
Total Tanks:	0
Tank Secret:	False
Tank Secondary Containment:	None
Tank Error Status:	3
Date Entered:	07/19/1989
Certified Date:	07/19/1989
Substance:	Not reported
Internal Protection:	Not reported
External Protection:	Not reported
Pipe Location:	Not reported
Pipe Type:	Wrapped Steel
Pipe Internal:	Not reported
Pipe External:	Not reported
Pipe Flag:	False
Leak Detection:	Not reported
Overfill Protection:	Not reported
Haz Percent:	0
Last Test:	Not reported
Due Date:	Not reported
SWIS Code:	6101
Lat/Long:	Not reported
Is Updated:	False
Renew Date:	03/15/91
Is It There:	False
Delinquent:	False
Date Expired:	07/19/91
Owner Mark:	1
Certificate Needs to be Printed:	False
Fiscal Amt for Registration Fee Correct:	True
Renewal Has Been Printed for Facility:	True
Pre-Printed Renewal App Last Printed:	03/15/1991

SWRCY:

Region:	2
Facility Address 2:	Not reported
Phone Number:	7184974000
Owner Type:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner Address 2:	Not reported
Owner City,St,Zip:	Not reported
Owner Email:	Not reported
Owner Phone:	Not reported
Contact Name:	RUSS KRUK
Contact Address:	Not reported
Contact Address 2:	Not reported
Contact City,St,Zip:	Not reported
Contact Email:	Not reported
Contact Phone:	Not reported
Activity Desc:	z Retired - RHRF - registration
Activity Number:	[24M99]
Active:	No

BROWNING FERRIS (Continued) **S102639161**

East Coordinate: 590900
North Coordinate: 4507300
Accuracy Code: Not reported
Regulatory Status: Not reported
Permit #: 2-6101-00120
Auth. Date: 01/07/1991
Expiration Date: 01/31/2002
Waste Types: Not reported
Operator Name: Not reported
Operator Type: Not reported
Last Date: Not reported

Region: 2
Facility Address 2: Not reported
Phone Number: 7184974000
Owner Type: Not reported
Owner Name: Joseph Lostritto
Owner Address: 72 Scott Ave.
Owner Address 2: Not reported
Owner City,St,Zip: Brooklyn, NY 11237
Owner Email: Not reported
Owner Phone: Not reported
Contact Name: Not reported
Contact Address: Not reported
Contact Address 2: Not reported
Contact City,St,Zip: Not reported
Contact Email: Not reported
Contact Phone: Not reported
Activity Desc: z Retired - RHRF - registration
Activity Number: [00M00]
Active: No
East Coordinate: Not reported
North Coordinate: Not reported
Accuracy Code: Not reported
Regulatory Status: Not reported
Permit #: 2-6104-00022/00001-0
Auth. Date: Not reported
Expiration Date: Not reported
Waste Types: Not reported
Operator Name: Not reported
Operator Type: Not reported
Last Date: Not reported

SPILLS:
Name: BFI
Address: 72 SCOTT ST
City,State,Zip: BROOKLYN, NY
Spill Number/Closed Date: 0408008 / 2004-10-20
Facility ID: 0408008
Facility Type: ER
DER Facility ID: 267814
Site ID: 332606
DEC Region: 2
Spill Cause: Unknown
Spill Class: C4
SWIS: 2401
Spill Date: 2004-10-19

BROWNING FERRIS (Continued) **S102639161**

Investigator:	SMSANGES
Referred To:	Not reported
Reported to Dept:	2004-10-19
CID:	407
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Other
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2004-10-19
Spill Record Last Update:	2004-10-20
Spiller Name:	Not reported
Spiller Company:	Not reported
Spiller Address:	Not reported
Spiller Company:	001
Contact Name:	TOM FALATO
DEC Memo:	"This spill has been consolidated with an older open spill report: Both spill #0408008 and spill #9708693 have been closed and referred to #9702085"
Remarks:	"Detected contamination in the soil."

All Materials:

Site ID:	332606
Operable Unit ID:	1094837
Operable Unit:	01
Material ID:	574970
Material Code:	0008
Material Name:	diesel
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	Not reported
Units:	G
Recovered:	.00
Oxygenate:	Not reported

Name:	BFI
Address:	72 SCOTT AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9702085 / 2004-12-03
Facility ID:	9702085
Facility Type:	ER
DER Facility ID:	166356
Site ID:	144358
DEC Region:	2
Spill Cause:	Unknown
Spill Class:	B3
SWIS:	2401
Spill Date:	1997-05-18
Investigator:	JMROMMEL
Referred To:	Not reported
Reported to Dept:	1997-05-18
CID:	370
Water Affected:	Not reported

BROWNING FERRIS (Continued) **S102639161**

Spill Source:	Commercial/Industrial
Spill Notifier:	Responsible Party
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	1997-05-18
Spill Record Last Update:	2004-12-08
Spiller Name:	DAVID MCLAUGHLIN
Spiller Company:	BFI
Spiller Address:	136 SICKER RD
Spiller Company:	001
Contact Name:	TIM HORKAY
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was ROMMEL 3/11/03 - SAMUEL- File available in active unassigned spill files. 4/12/04-Vought-Spill transferred from Tomasello to Rommel as per Rommel. 10/20/2004 Sangesland has consolidated 3 spills into one: Spill 9708693 - has been closed and cross ref to this spill #9702085 Spill 0408008 - new soil boring contamination - closed & ref to 9702085 12/3/04 Reviewed Impact Enmtl report dated October 2004. NFA letter mailed to BFI Rommel"
Remarks:	"caller removing a tank and found soil spill contained in soil will also excavate soil and remove"

All Materials:

Site ID:	144358
Operable Unit ID:	1044796
Operable Unit:	01
Material ID:	335019
Material Code:	0008
Material Name:	diesel
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

Name:	BROWNING FERRIS INDUST
Address:	72 SCOTT AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9703275 / 1997-06-16
Facility ID:	9703275
Facility Type:	ER
DER Facility ID:	166356
Site ID:	144359
DEC Region:	2
Spill Cause:	Equipment Failure
Spill Class:	C3
SWIS:	2401
Spill Date:	1997-06-13
Investigator:	JMKRIMGO
Referred To:	Not reported
Reported to Dept:	1997-06-16
CID:	252

BROWNING FERRIS (Continued) **S102639161**

Water Affected:	Not reported
Spill Source:	Commercial Vehicle
Spill Notifier:	Responsible Party
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	1997-06-16
Spill Record Last Update:	1997-06-18
Spiller Name:	TIM HORKAY
Spiller Company:	BROWNING FERRIS INDUST
Spiller Address:	72 SCOTT AVE
Spiller Company:	001
Contact Name:	TIM HORKAY
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was KRIMGOLD "
Remarks:	"SPILL WAS CAUSED BY HYDRAULIC HOSE COMING LOOSE-SPILL HAS BEEN CLEANED UP"

All Materials:

Site ID:	144359
Operable Unit ID:	1049274
Operable Unit:	01
Material ID:	336171
Material Code:	0010
Material Name:	hydraulic oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	20.00
Units:	G
Recovered:	20.00
Oxygenate:	Not reported

Name:	BROWNING FERRIS INDUSTRIE
Address:	72 SCOTT AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9709681 / 1997-11-20
Facility ID:	9709681
Facility Type:	ER
DER Facility ID:	166356
Site ID:	199905
DEC Region:	2
Spill Cause:	Equipment Failure
Spill Class:	C4
SWIS:	2401
Spill Date:	1997-11-20
Investigator:	KSTANG
Referred To:	Not reported
Reported to Dept:	1997-11-20
CID:	266
Water Affected:	Not reported
Spill Source:	Commercial Vehicle
Spill Notifier:	Responsible Party
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False

BROWNING FERRIS (Continued) **S102639161**

Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	1997-11-20
Spill Record Last Update:	1997-11-21
Spiller Name:	JIM VAN WOERT
Spiller Company:	BROWNING FERRIS INDUSTRIE
Spiller Address:	72 SCOTT AVENUE
Spiller Company:	001
Contact Name:	JIM VAN WOERT
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was TANG CALLED UP JIM VAN @ BROWNING FERRIS & CONFIRMED CLEAN-UP. NO IMPACT TO FLOOR DRAINS ON SIDEWALKS."
Remarks:	"BROKEN HYDRAULIC LINE ON ROLL-OFF TRUCK. ONTO CONCRETE AND ASPHALT. CLEANED UP."

All Materials:

Site ID:	199905
Operable Unit ID:	1056009
Operable Unit:	01
Material ID:	328016
Material Code:	0010
Material Name:	hydraulic oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	40.00
Units:	G
Recovered:	40.00
Oxygenate:	Not reported

Name:	PARKING GARAGE
Address:	72 SCOTT AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0609017 / 2006-11-07
Facility ID:	0609017
Facility Type:	ER
DER Facility ID:	166356
Site ID:	373114
DEC Region:	2
Spill Cause:	Equipment Failure
Spill Class:	Not reported
SWIS:	2401
Spill Date:	2006-11-06
Investigator:	HRPATEL
Referred To:	Not reported
Reported to Dept:	2006-11-06
CID:	408
Water Affected:	Not reported
Spill Source:	Commercial Vehicle
Spill Notifier:	Responsible Party
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0

BROWNING FERRIS (Continued) **S102639161**

Date Entered In Computer: 2006-11-06
Spill Record Last Update: 2006-11-07
Spiller Name: DERRICK BEAUREGAURD
Spiller Company: TRUCK #1618
Spiller Address: 1160 RANDALL AVE
Spiller Company: 001
Contact Name: SAM RIVERA
DEC Memo: "11/07/06-Hiralkumar Patel. received during off hours duty. spoke with Derrick. as per Derrick, there was only diesel spill, not #2 oil spill. it was actually 2 grade diesel. spill happened due to ruptured saddle tank. spilled on concrete parking lot and it all contained. Castleton was on scene. spill cleaned up by absorbent pads. no soil/sewer/drain affected. all cleaned up. spoke with jake at castleton. all cleaned up."
Remarks: "THE AMOUNT IS 1/2 AND 1/2 OF EACH MATERIAL; TRUCK IS A FUEL TANKER AND WAS CARRYING 2000 GALLONS; SENT EMERGENCY SPILL REPONSE CASTLETON ENVIRO. SPOKE WITH JAKE # 973-332-4972; HAS BEEN CONTAINED; WILL BE CLEANED BY CASTLETON ENVIRO. ;"

All Materials:
Site ID: 373114
Operable Unit ID: 1130837
Operable Unit: 01
Material ID: 2120510
Material Code: 0001A
Material Name: #2 fuel oil
Case No.: Not reported
Material FA: Petroleum
Quantity: .00
Units: G
Recovered: .00
Oxygenate: Not reported

Site ID: 373114
Operable Unit ID: 1130837
Operable Unit: 01
Material ID: 2120511
Material Code: 0008
Material Name: diesel
Case No.: Not reported
Material FA: Petroleum
Quantity: 15.00
Units: G
Recovered: .00
Oxygenate: Not reported

NY MANIFEST:
Country: USA
EPA ID: NYR000064568
Facility Status: Not reported
Location Address 1: 72 SCOTT AVE
Code: BP
Location Address 2: Not reported
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY

BROWNING FERRIS (Continued) **S102639161**

Location Zip:	11237
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYR000064568
Mailing Name:	BROWNING FERRIS
Mailing Contact:	JIM VAN WOERT
Mailing Address 1:	72 SCOTT AVE
Mailing Address 2:	Not reported
Mailing City:	BROOKLYN
Mailing State:	NY
Mailing Zip:	11237
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	7184974000

NY MANIFEST:

Document ID:	MAJ6584480
Manifest Status:	Not reported
seq:	01
Year:	1999
Trans1 State ID:	Not reported
Trans2 State ID:	102E82MD
Generator Ship Date:	02/04/1999
Trans1 Recv Date:	02/04/1999
Trans2 Recv Date:	02/04/1999
TSD Site Recv Date:	02/24/1999
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYR000064568
Trans1 EPA ID:	NJD071629976
Trans2 EPA ID:	MAD039322250
TSDF ID 1:	MAD053452637
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	D001 - NON-LISTED IGNITABLE WASTES
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	00055
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	001
Container Type:	DM - Metal drums, barrels
Handling Method:	B Incineration, heat recovery, burning.

BROWNING FERRIS (Continued) **S102639161**

Specific Gravity: 01.00

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

SPDES:

Permit Number:	NYR00C271
State-Region:	02
Expiration Date:	03/31/2012
Current Major Minor Status:	Minor
Primary Facility SIC Code:	4212
State Water Body Name:	NEWTOWN CREEK
Limit Set Status Flag:	Active
Total Actual Average Flow(MGD):	Not reported
Total App Design Flow(MGD):	Not reported
UDF1:	Not reported
Lat/Long:	+40.709944 / -73.922306
DMR Cognizant Official:	Not reported
UDF2:	Not reported
UDF3:	Not reported
FIPS County Code:	NY047
Non-Gov Permit Affiliation Type Desc:	DMR Mailing Address
Non-Gov Permit Org Formal Name:	BFI WASTE SYSTEMS OF NEW JERSEY INC
Non-Gov Permit Street Address:	BFI WASTE SYSTEMS OF NEW JERSEY INC
Non-Gov Permit Supplemental Location:	1057 LOWER SOUTH ST
Non-Gov Permit City:	BRONX
Non-Gov Permit State Code:	NY
Non-Gov Permit Zip Code:	10454
Non-Gov Facility Affiliation Type Desc:	Mailing Address
Non-Gov Facility Org Formal Name:	BFI SCOTT AVE
Non-Gov Facility Street Address:	72 SCOTT AVE
Non-Gov Facility Supplemental Location:	Not reported
Non-Gov Facility City:	BROOKLYN
Non-Gov Facility State Code:	NY
Non-Gov Facility Zip Code:	11237
State Water Body:	Not reported
UDF2:	Not reported
UDF3:	Not reported
FIPS County Code:	NY047
Non-Gov Permit Affiliation Type Desc:	DMR Mailing Address
Non-Gov Permit Org Formal Name:	BFI WASTE SYSTEMS OF NEW JERSEY INC
Non-Gov Permit Street Address:	BFI WASTE SYSTEMS OF NEW JERSEY INC
Non-Gov Permit Supplemental Location:	1057 LOWER SOUTH ST
Non-Gov Permit City:	BRONX
Non-Gov Permit State Code:	NY
Non-Gov Permit Zip Code:	10454
Non-Gov Facility Affiliation Type Desc:	Owner
Non-Gov Facility Org Formal Name:	BFI WASTE SYSTEMS OF NEW JERSEY INC
Non-Gov Facility Street Address:	BFI WASTE SYSTEMS OF NEW JERSEY INC
Non-Gov Facility Supplemental Location:	920 E 132ND ST
Non-Gov Facility City:	BRONX
Non-Gov Facility State Code:	NY

BROWNING FERRIS (Continued) **S102639161**

Non-Gov Facility Zip Code:	10454
State Water Body:	Not reported
UDF2:	Not reported
UDF3:	Not reported
FIPS County Code:	NY047
Non-Gov Permit Affiliation Type Desc:	Permittee
Non-Gov Permit Org Formal Name:	BFI WASTE SYSTEMS OF NEW JERSEY INC
Non-Gov Permit Street Address:	920 E 132ND ST
Non-Gov Permit Supplemental Location:	Not reported
Non-Gov Permit City:	BRONX
Non-Gov Permit State Code:	NY
Non-Gov Permit Zip Code:	10454
Non-Gov Facility Affiliation Type Desc:	Mailing Address
Non-Gov Facility Org Formal Name:	BFI SCOTT AVE
Non-Gov Facility Street Address:	72 SCOTT AVE
Non-Gov Facility Supplemental Location:	Not reported
Non-Gov Facility City:	BROOKLYN
Non-Gov Facility State Code:	NY
Non-Gov Facility Zip Code:	11237
State Water Body:	Not reported
UDF2:	Not reported
UDF3:	Not reported
FIPS County Code:	NY047
Non-Gov Permit Affiliation Type Desc:	Permittee
Non-Gov Permit Org Formal Name:	BFI WASTE SYSTEMS OF NEW JERSEY INC
Non-Gov Permit Street Address:	920 E 132ND ST
Non-Gov Permit Supplemental Location:	Not reported
Non-Gov Permit City:	BRONX
Non-Gov Permit State Code:	NY
Non-Gov Permit Zip Code:	10454
Non-Gov Facility Affiliation Type Desc:	Owner
Non-Gov Facility Org Formal Name:	BFI WASTE SYSTEMS OF NEW JERSEY INC
Non-Gov Facility Street Address:	BFI WASTE SYSTEMS OF NEW JERSEY INC
Non-Gov Facility Supplemental Location:	920 E 132ND ST
Non-Gov Facility City:	BRONX
Non-Gov Facility State Code:	NY
Non-Gov Facility Zip Code:	10454
State Water Body:	Not reported
UDF2:	Not reported
UDF3:	Not reported
FIPS County Code:	NY047
Non-Gov Permit Affiliation Type Desc:	Not reported
Non-Gov Permit Org Formal Name:	Not reported
Non-Gov Permit Street Address:	Not reported
Non-Gov Permit Supplemental Location:	Not reported
Non-Gov Permit City:	Not reported
Non-Gov Permit State Code:	Not reported
Non-Gov Permit Zip Code:	Not reported
Non-Gov Facility Affiliation Type Desc:	Mailing Address
Non-Gov Facility Org Formal Name:	BFI SCOTT AVE
Non-Gov Facility Street Address:	72 SCOTT AVE

BROWNING FERRIS (Continued) **S102639161**

Non-Gov Facility Supplemental Location:	Not reported
Non-Gov Facility City:	BROOKLYN
Non-Gov Facility State Code:	NY
Non-Gov Facility Zip Code:	11237
State Water Body:	Not reported
UDF2:	Not reported
UDF3:	Not reported
FIPS County Code:	NY047
Non-Gov Permit Affiliation Type Desc:	Not reported
Non-Gov Permit Org Formal Name:	Not reported
Non-Gov Permit Street Address:	Not reported
Non-Gov Permit Supplemental Location:	Not reported
Non-Gov Permit City:	Not reported
Non-Gov Permit State Code:	Not reported
Non-Gov Permit Zip Code:	Not reported
Non-Gov Facility Affiliation Type Desc:	Owner
Non-Gov Facility Org Formal Name:	BFI WASTE SYSTEMS OF NEW JERSEY INC
Non-Gov Facility Street Address:	BFI WASTE SYSTEMS OF NEW JERSEY INC
Non-Gov Facility Supplemental Location:	920 E 132ND ST
Non-Gov Facility City:	BRONX
Non-Gov Facility State Code:	NY
Non-Gov Facility Zip Code:	10454
State Water Body:	Not reported

AW303 **ALLOCCO RECYCLING LTD (SCHOLES ST)** **NY SWRCY** **S103272921**
NE **575 SCHOLES STREET** **NY Spills** **N/A**
1/4-1/2 **BROOKLYN, NY 11237**
0.423 mi.
2232 ft. **Site 1 of 4 in cluster AW**

Relative: **Lower**

Actual: **15 ft.**

SWRCY:

Region:	2
Facility Address 2:	Not reported
Phone Number:	7183493094
Owner Type:	Private
Owner Name:	Michael Allocco
Owner Address:	540 Kingsand Ave
Owner Address 2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11222
Owner Email:	Mike@alloccorecycling.com
Owner Phone:	7183493094
Contact Name:	Not reported
Contact Address:	Not reported
Contact Address 2:	Not reported
Contact City,St,Zip:	Not reported
Contact Email:	Not reported
Contact Phone:	Not reported
Activity Desc:	z Retired - RHRF - registration
Activity Number:	[24MG6]
Active:	No
East Coordinate:	590866
North Coordinate:	4507400
Accuracy Code:	Not reported
Regulatory Status:	Registration
Permit #:	24MG6
Auth. Date:	03/28/2014
Expiration Date:	Not reported

ALLOCCO RECYCLING LTD (SCHOLES ST) (Continued) **S103272921**

Waste Types: Not reported
Operator Name: Not reported
Operator Type: Not reported
Last Date: 2016-10-26 00:00:00

SPILLS:

Name:	575 SCHOLES ST/B'KLYN/JLJ
Address:	575 SCHOLES ST
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	8707214 / 1987-11-21
Facility ID:	8707214
Facility Type:	ER
DER Facility ID:	146106
Site ID:	173694
DEC Region:	2
Spill Cause:	Equipment Failure
Spill Class:	Not reported
SWIS:	2401
Spill Date:	1987-11-21
Investigator:	UNASSIGNED
Referred To:	Not reported
Reported to Dept:	1987-11-21
CID:	Not reported
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Fire Department
Cleanup Ceased:	1987-11-21
Cleanup Meets Std:	True
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	1987-11-27
Spill Record Last Update:	2003-08-20
Spiller Name:	Not reported
Spiller Company:	JLJ CO.
Spiller Address:	575 SCHOLES ST
Spiller Company:	001
Contact Name:	Not reported
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was "
Remarks:	"TANK PARTIALLY FILLED WITH PRODUCT WAS BEING CUT UP BY SCRAP YARD. CONTACT: STEVE SPALIRO (718) 366-6513."

All Materials:

Site ID:	173694
Operable Unit ID:	912946
Operable Unit:	01
Material ID:	466181
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	50.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

ALLOCCO RECYCLING LTD (SCHOLES ST) (Continued) **S103272921**

Name:	575 SCHOLES AVENUE
Address:	575 SCHOLES AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9610612 / 1996-11-25
Facility ID:	9610612
Facility Type:	ER
DER Facility ID:	199340
Site ID:	242575
DEC Region:	2
Spill Cause:	Unknown
Spill Class:	B3
SWIS:	2401
Spill Date:	1996-11-25
Investigator:	SIGONA
Referred To:	Not reported
Reported to Dept:	1996-11-25
CID:	351
Water Affected:	Not reported
Spill Source:	Unknown
Spill Notifier:	Fire Department
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	1996-11-25
Spill Record Last Update:	2007-02-27
Spiller Name:	Not reported
Spiller Company:	UNKNOWN
Spiller Address:	Not reported
Spiller Company:	999
Contact Name:	FIREMAN CASTAGNA
DEC Memo:	""
Remarks:	"FD ON SCENE OF SPILL - LITTLE INFO AT THIS TIME - IN PROCESS OF RECOVERING"

All Materials:

Site ID:	242575
Operable Unit ID:	1042047
Operable Unit:	01
Material ID:	342826
Material Code:	0029C
Material Name:	hydrogen chloride
Case No.:	07647010
Material FA:	Hazardous Material
Quantity:	15.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

AV304 **ROLET FOOD PRODUCTS** **NY LTANKS** **S105230593**
ENE **70 SCOTT AVE** **N/A**
1/4-1/2 **BROOKLYN, NY**
0.424 mi.
2237 ft. **Site 2 of 3 in cluster AV**

Relative: **Lower**
Actual: **18 ft.**

LTANKS:

Name:	ROLET FOOD PRODUCTS
Address:	70 SCOTT AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0109443 / 2002-01-14
Facility ID:	0109443
Site ID:	179351
Spill Date:	2001-12-26
Spill Cause:	Tank Failure
Spill Source:	Commercial/Industrial
Spill Class:	C4
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	JAKOLLEE
Referred To:	Not reported
Reported to Dept:	2001-12-26
CID:	198
Water Affected:	Not reported
Spill Notifier:	Local Agency
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	2001-12-26
Spill Record Last Update:	2002-01-14
Spiller Name:	MARK TURETSKY
Spiller Company:	ROLET FOOD PRODUCTS
Spiller Address:	70 SCOTT AVE
Spiller County:	001
Spiller Contact:	MARK TURETSKY
Spiller Phone:	(718) 497-0476
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	150523
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was KOLLEENY KOLLEENY OF DEC VISITED SITE. 275-GAL TANK IN ROOFTOP ENCLOSURE RUPTURED OVER X-MAS HOLIDAY, OWNER ESTIMATES ABOUT 75 GALLONS WAS LEFT IN TANK AND LEAKED OUT. OIL WENT THROUGH FLOOR OF ENCLOSURE AND INTO CRAWL SPACE ABOVE ROOF, CONTAMINATING ROOFING MATERIALS; A SMALL AMOUNT ALSO LEAKED THROUGH INTO WAREHOUSE BLDG BELOW. NO OIL WAS RELEASED INTO ENVIRONMENT. PETROLEUM TANK CLEANERS DID CLEANUP, WITH ABSORBENT ON CONCRETE/METAL SURFACES, AND REMOVAL/DISPOSAL OF IMPACTED ROOF TAR PAPER. NO RESIDUAL ODORS."
Remarks:	"TANK RUPTURED OF A 275 GAL TANK - THERE WAS UNK AMOUNT LEFT IN TANK PRODUCT THAT LEAKED WAS ABSORBED WITH SPEEDI-DRI."

All Materials:

Site ID:	179351
Operable Unit ID:	846731
Operable Unit:	01
Material ID:	530649
Material Code:	0001A
Material Name:	#2 fuel oil

ROLET FOOD PRODUCTS (Continued) **S105230593**

Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

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305 West 1/4-1/2 0.427 mi. 2256 ft.

Relative: Higher

Actual: 23 ft.

83 BUSHWICK PLACE **NY VCP** **S118943357**
83 BUSHWICK PLACE **N/A**
NEW YORK CITY, NY

VCP NYC:

Project ID:	14CVCP221K
Project Name:	83 BUSHWICK PLACE
Project Address:	83 BUSHWICK PLACE
Borough:	BROOKLYN

VCP NYC:

Project ID:	14CVCP221K
File Name:	2014-01-21.RIR
URL:	http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/14CVCP221K/2014-01-21.14CVCP221K.RIR.pdf

Project ID:	14CVCP221K
File Name:	2014-01-21.RAWP
URL:	http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/14CVCP221K/2014-01-21.14CVCP221K.RAWP.pdf

Project ID:	14CVCP221K
File Name:	2014-02-04.Factsheet-1
URL:	http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/14CVCP221K/2014-02-04.14CVCP221K.83_Bushwick.Factsheet-1.pdf

Project ID:	14CVCP221K
File Name:	2014-01-21.Translated_Factsheet-1
URL:	http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/14CVCP221K/2014-01-21.14CVCP221K.Translated_Factsheet-1.pdf

Project ID:	14CVCP221K
File Name:	2014-01-21.Translated_CPS
URL:	http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/14CVCP221K/2014-01-21.14CVCP221K.CPS.pdf

Project ID:	14CVCP221K
File Name:	2014-02-27.Stip_List
URL:	http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/14CVCP221K/2014-02-27.14CVCP221K..83_Bushwick.StipList.pdf

Project ID:	14CVCP221K
File Name:	2014-04-02.Decision_Document
URL:	http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/14CVCP221K/2014-04-02.14CVCP221K.Decision_Document.pdf

Project ID:	14CVCP221K
File Name:	2014-10-30.Factsheet-2

83 BUSHWICK PLACE (Continued) **S118943357**

URL: http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/14CVCP221K/2014-10-28.14CVCP221K.83_Bushwick_Place.Factsheet-2.pdf

Project ID: 14CVCP221K
File Name: 2014-10-30.Translated_Factsheet-2
URL: http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/14CVCP221K/2014-10-28.14CVCP221K.doc.83_Bushwick_Place.Translated_FactSheet-2.pdf

Project ID: 14CVCP221K
File Name: 2016-08-15.RAR_Final
URL: http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/14CVCP221K/2016_04_01.14RHAZ180K.RAR_Final.pdf

Project ID: 14CVCP221K
File Name: 2016-08-15.Notice_Of_Completion
URL: http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/14CVCP221K/2016-08-08.14CVCP221K.83_Bushwick_Place.doc.Notice_Of_Completion.pdf

Project ID: 14CVCP221K
File Name: 2016-08-15.Factsheet-3
URL: http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/14CVCP221K/2016-08-08.14CVCP221K.83_Bushwick_Place.doc.Factsheet-3.pdf

Project ID: 14CVCP221K
File Name: 2016-08-15.Translated_Factsheet-3
URL: http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/14CVCP221K/2016-08-09.14CVCP221K.doc.Translated_Factsheet-3.pdf

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306
SSE
1/4-1/2
0.429 mi.
2267 ft.

MIRAMARS DRY CLEANERS
103 WILSON AVE
BROOKLYN, NY 11237

RCRA-SQG **1004760296**
NY LTANKS **NYR000039164**
ICIS
US AIRS
NY MANIFEST

Relative:
Higher

Actual:
52 ft.

RCRA-SQG:
Date form received by agency: 01/01/2007
Facility name: MIRAMARS DRY CLEANERS
Facility address: 103 WILSON AVE
BROOKLYN, NY 11237
EPA ID: NYR000039164
Mailing address: WILSON AVE
BROOKLYN, NY 11237
Contact: HILDA DIROCHE
Contact address: WILSON AVE
BROOKLYN, NY 11237
Contact country: US
Contact telephone: 718-628-4694
Contact email: Not reported
EPA Region: 02
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

MIRAMARS DRY CLEANERS (Continued) **1004760296**

Owner/Operator Summary:
- Owner/operator name: HILDA DIROCHE
- Owner/operator address: 1738 SUMMERFIELD ST #1L
  RIDGEWOOD, NY 11385
- Owner/operator country: US
- Owner/operator telephone: 718-628-5358
- Owner/operator email: Not reported
- Owner/operator fax: Not reported
- Owner/operator extension: Not reported
- Legal status: Private
- Owner/Operator Type: Owner
- Owner/Op start date: Not reported
- Owner/Op end date: Not reported

- Owner/operator name: HILDA DIROCHE
- Owner/operator address: 1738 SUMMERFIELD ST #1L
  RIDGEWOOD, NY 11385
- Owner/operator country: US
- Owner/operator telephone: 718-628-5358
- Owner/operator email: Not reported
- Owner/operator fax: Not reported
- Owner/operator extension: Not reported
- Legal status: Private
- Owner/Operator Type: Operator
- Owner/Op start date: Not reported
- Owner/Op end date: Not reported

Handler Activities Summary:
- U.S. importer of hazardous waste: No
- Mixed waste (haz. and radioactive): No
- Recycler of hazardous waste: No
- Transporter of hazardous waste: No
- Treater, storer or disposer of HW: No
- Underground injection activity: No
- On-site burner exemption: No
- Furnace exemption: No
- Used oil fuel burner: No
- Used oil processor: No
- User oil refiner: No
- Used oil fuel marketer to burner: No
- Used oil Specification marketer: No
- Used oil transfer facility: No
- Used oil transporter: No

Historical Generators:
- Date form received by agency: 01/01/2006
- Site name: MIRAMARS DRY CLEANERS
- Classification: Conditionally Exempt Small Quantity Generator

- Date form received by agency: 05/14/1997
- Site name: MIRAMARS DRY CLEANERS
- Classification: Conditionally Exempt Small Quantity Generator

Hazardous Waste Summary:

MIRAMARS DRY CLEANERS (Continued) **1004760296**

. Waste code: D000
. Waste name: Not Defined

. Waste code: F002
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2, TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Violation Status: No violations found

LTANKS:

Name:	103
Address:	103 WILSON AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9611402 / 2003-06-16
Facility ID:	9611402
Site ID:	128554
Spill Date:	1996-12-16
Spill Cause:	Tank Overfill
Spill Source:	Unknown
Spill Class:	C3
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	SMSANGES
Referred To:	Not reported
Reported to Dept:	1996-12-16
CID:	196
Water Affected:	Not reported
Spill Notifier:	Other
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	1996-12-16
Spill Record Last Update:	2006-02-02
Spiller Name:	BAT. CHIEF QUIDO
Spiller Company:	UNKNOWN
Spiller Address:	Not reported
Spiller County:	001
Spiller Contact:	MIKE SHAW
Spiller Phone:	(718) 596-6212
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	110891
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was SANGESLAND Transfered from tibbe to sangesland. 5/28/2003 - Property owner had a friend call the DEC to find out how to close out this open case. Sangesland told her the following: 1) Try calling Mike Shaw at Walco (718-596-6212). Ask him what work he did in this building (reattached a broken cover). 2) Bring in either Walco or some other oil burner company. Have them photograph the basement

MIRAMARS DRY CLEANERS (Continued) **1004760296**

floor in the area of the tank and the oil burner. They also need to write a letter to the DEC saying that there are no signs of oil contamination in the basement, There are no cracks in the basement floor. 3) If there are cracks in the basement floor or there is oil around on the floor, you need to hire an environmental company to do some drilling and sample the soil under the cement floor. If there is a problem under the floor, you will need to open the floor and dig out the oil contaminated soil. 6/16/2003 Empire Boiler & Burner wrote a letter with photos to show that the site is on nat gas and no tank exisits. there is no spilled oil. Spill Closed"

Remarks: "CALLER STATES HE RECEIVED A CALL FROM THE FDNY. SPILL WAS CAUSED BY SOME REMOVING A A FITTING AT THE TOP OF THE TANK. SPILL IS OVER 100 GALS. CALLER STATES IT NOT A CUSTOMER OF HIS. TANK WAS CAPED BY WECO AT THE REQUEST OF THE FIRE DEPT."

All Materials:

Site ID:	128554
Operable Unit ID:	1042845
Operable Unit:	01
Material ID:	343599
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	100.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

ICIS:

Enforcement Action ID:	NY000A0000261040117400322
FRS ID:	110004534317
Action Name:	BROTHERS DRY CLEANERS 36047R181200322
Facility Name:	BROTHERS DRY CLEANERS
Facility Address:	103 WILSON AVE BROOKLYN, NY 112372262
Enforcement Action Type:	Notice of Violation
Facility County:	KINGS
Program System Acronym:	AIR
Enforcement Action Forum Desc:	Administrative - Informal
EA Type Code:	NOV
Facility SIC Code:	7216
Federal Facility ID:	Not reported
Latitude in Decimal Degrees:	40.70146
Longitude in Decimal Degrees:	-73.92709
Permit Type Desc:	Not reported
Program System Acronym:	NY0000002610401174
Facility NAICS Code:	812320
Tribal Land Code:	Not reported

US AIRS MINOR:

Envid:	1004760296
Region Code:	02
Programmatic ID:	AIR NY0000002610401174
Facility Registry ID:	110004534317

MIRAMARS DRY CLEANERS (Continued) **1004760296**

D and B Number: Not reported
Primary SIC Code: 7216
NAICS Code: 812320
Default Air Classification Code: MIN
Facility Type of Ownership Code: POF
Air CMS Category Code: Not reported
HPV Status: Not reported

US AIRS MINOR:
Region Code: 02
Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: MACT Standards (40 CFR Part 63)
Activity Date: 2001-12-15 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: MACT Standards (40 CFR Part 63)
Activity Date: 2002-12-13 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: MACT Standards (40 CFR Part 63)
Activity Date: 2003-12-12 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: MACT Standards (40 CFR Part 63)
Activity Date: 2005-03-01 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02

MIRAMARS DRY CLEANERS (Continued) **1004760296**

Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: MACT Standards (40 CFR Part 63)
Activity Date: 2005-12-08 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: MACT Standards (40 CFR Part 63)
Activity Date: 2005-05-11 00:00:00
Activity Status Date: 2005-05-11 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Informal
Activity Status: Achieved

Region Code: 02
Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2001-12-15 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2002-12-13 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2003-12-12 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation

MIRAMARS DRY CLEANERS (Continued) **1004760296**

Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2005-03-01 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2005-12-08 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2009-05-19 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

US AIRS MINOR:
Envid: 1004760296
Region Code: 02
Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
D and B Number: Not reported
Primary SIC Code: 7216
NAICS Code: 812320
Default Air Classification Code: MIN
Facility Type of Ownership Code: POF
Air CMS Category Code: Not reported
HPV Status: Not reported

US AIRS MINOR:
Region Code: 02
Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
Air Operating Status Code: OPR

MIRAMARS DRY CLEANERS (Continued) **1004760296**

Default Air Classification Code: MIN
Air Program: MACT Standards (40 CFR Part 63)
Activity Date: 2001-12-15 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: MACT Standards (40 CFR Part 63)
Activity Date: 2002-12-13 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: MACT Standards (40 CFR Part 63)
Activity Date: 2003-12-12 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: MACT Standards (40 CFR Part 63)
Activity Date: 2005-03-01 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: MACT Standards (40 CFR Part 63)
Activity Date: 2005-12-08 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02

MIRAMARS DRY CLEANERS (Continued) **1004760296**

Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: MACT Standards (40 CFR Part 63)
Activity Date: 2005-05-11 00:00:00
Activity Status Date: 2005-05-11 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Informal
Activity Status: Achieved

Region Code: 02
Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2001-12-15 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
Air Operating Status Code: OPR
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Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2002-12-13 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
Air Operating Status Code: OPR
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Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2003-12-12 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2005-03-01 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation

MIRAMARS DRY CLEANERS (Continued) **1004760296**

Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2005-12-08 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610401174
Facility Registry ID: 110004534317
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: State Implementation Plan for National Primary and Secondary Ambient Air Quality Standards
Activity Date: 2009-05-19 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

NY MANIFEST:
Country: USA
EPA ID: NYR000039164
Facility Status: Not reported
Location Address 1: 103 WILSON AVE
Code: BP
Location Address 2: Not reported
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: 11237
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYR000039164
Mailing Name: MIRAMARS DRY CLNRS
Mailing Contact: HILDA DIROCHE
Mailing Address 1: 103 WILSON AVE
Mailing Address 2: Not reported
Mailing City: BROOKLYN
Mailing State: NY
Mailing Zip: 11237
Mailing Zip 4: Not reported
Mailing Country: USA
Mailing Phone: 7186284694

NY MANIFEST:
Document ID: Not reported
Manifest Status: Not reported
seq: Not reported

MIRAMARS DRY CLEANERS (Continued) **1004760296**

Year:	2009
Trans1 State ID:	TXR000050930
Trans2 State ID:	NJD071629976
Generator Ship Date:	02/13/2009
Trans1 Recv Date:	02/13/2009
Trans2 Recv Date:	02/24/2009
TSD Site Recv Date:	02/25/2009
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYR000039164
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	OHD980587364
TSDF ID 2:	Not reported
Manifest Tracking Number:	000118097SKS
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H020
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	585.0
Units:	P - Pounds
Number of Containers:	3.0
Container Type:	DF - Fiberboard or plastic drums (glass)
Handling Method:	R Material recovery of more than 75 percent of the total material.
Specific Gravity:	1.0
Waste Code:	F002
Waste Code 1_2:	D007
Waste Code 1_3:	D029
Waste Code 1_4:	D039
Waste Code 1_5:	D040
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

307
SW
1/4-1/2
0.435 mi.
2296 ft.

BROOKLYN SCRAP METAL CO.
171 COOK ST.
BROOKLYN, NY 11206

SEMS-ARCHIVE
LEAD SMELTERS

1018149162
NYN000206621

Relative:
Higher

Actual:
25 ft.

SEMS Archive:

Site ID:	0206621
EPA ID:	NYN000206621
Cong District:	Not reported
FIPS Code:	36047
FF:	N
NPL:	Not on the NPL
Non NPL Status:	NFRAP-Site does not qualify for the NPL based on existing information

SEMS Archive Detail:

Region:	02
Site ID:	0206621
EPA ID:	NYN000206621
Site Name:	BROOKLYN SCRAP METAL CO.
NPL:	N
FF:	N
OU:	00
Action Code:	RS
Action Name:	RV ASSESS
SEQ:	1
Start Date:	2015-01-12 05:00:00
Finish Date:	2015-01-12 05:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf

Lead Smelter Sites:

Site ID:	206621
Facility Region Id:	2
Latitude:	Not reported
Longitude:	Not reported
CoC Ind:	Not reported
Contaminant Name:	Not reported
FF Ind:	N
NAI:	N
Non-Primary Site-Sub Type:	Not reported
NPL:	Not on the NPL
Primary Site-Sub Type:	Metal fabrication/finishing/coating and allied industries (Manufacturing/Processing/Maintenance)
Special Initiative:	Unrecognized Smelter per 2001 Report

AW308
NE
1/4-1/2
0.440 mi.
2322 ft.

BFI (598-636 SCHOLES STREET)
598-636 SCHOLES STREET
BROOKLYN, NY 11237

Site 2 of 4 in cluster AW

NY SWF/LF

S112258024
N/A

Relative:
Lower

Actual:
17 ft.

SWF/LF:

Flag:	INACTIVE
Region Code:	2
Phone Number:	6102866844
Owner Name:	BFI Waste Systems of New Jersey
Owner Type:	Private
Owner Address:	420 Quarry Road

BFI (598-636 SCHOLES STREET) (Continued) **S112258024**

Owner Addr2:	Not reported
Owner City,St,Zip:	Morgantown, PA 19543
Owner Email:	Not reported
Owner Phone:	6102866844
Contact Name:	Not reported
Contact Address:	Not reported
Contact Addr2:	Not reported
Contact City,St,Zip:	Not reported
Contact Email:	Not reported
Contact Phone:	Not reported
Activity Desc:	z Retired - Transfer station - permit
Activity Number:	[24T25]
Active:	No
East Coordinate:	590859
North Coordinate:	4507332
Accuracy Code:	Not reported
Regulatory Status:	None
Waste Type:	MSW (Residential/Institutional & Commercial)
Authorization #:	2-6104-00022/00001
Authorization Date:	11/30/2010
Expiration Date:	11/30/2015
Operator Name:	Mark Pedersen
Operator Type:	Private
Laste Date:	Not reported

AW309 **BFI (598-636 SCHOLES STREET)** **NY SWRCY** **S107788137**
NE **598-636 SCHOLES STREET** **NY Spills** **N/A**
1/4-1/2 **BROOKLYN, NY 11237**
0.440 mi.
2322 ft. **Site 3 of 4 in cluster AW**

Relative: **Lower**

Actual: **17 ft.**

SWRCY:

Region:	2
Facility Address 2:	Not reported
Phone Number:	6102866844
Owner Type:	Private
Owner Name:	BFI Waste Systems of New Jersey
Owner Address:	420 Quarry Road
Owner Address 2:	Not reported
Owner City,St,Zip:	Morgantown, PA 19543
Owner Email:	Not reported
Owner Phone:	6102866844
Contact Name:	Not reported
Contact Address:	Not reported
Contact Address 2:	Not reported
Contact City,St,Zip:	Not reported
Contact Email:	Not reported
Contact Phone:	Not reported
Activity Desc:	z Retired - RHRF - registration
Activity Number:	[24M25]
Active:	No
East Coordinate:	590859
North Coordinate:	4507332
Accuracy Code:	Not reported
Regulatory Status:	None
Permit #:	2-6104-00022/00001
Auth. Date:	11/30/2010
Expiration Date:	11/30/2015

BFI (598-636 SCHOLES STREET) (Continued) **S107788137**

Waste Types: Commingled Recyclables;Commingled Paper
Operator Name: Mark Pedersen
Operator Type: Private
Last Date: Not reported

SPILLS:

Name:	BFI WASTE MANAGEMENT
Address:	598 SCHOLES ST
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0601636 / 2006-05-15
Facility ID:	0601636
Facility Type:	ER
DER Facility ID:	314122
Site ID:	363920
DEC Region:	2
Spill Cause:	Unknown
Spill Class:	Not reported
SWIS:	2401
Spill Date:	2006-05-12
Investigator:	JBVOUGHT
Referred To:	Not reported
Reported to Dept:	2006-05-12
CID:	409
Water Affected:	Not reported
Spill Source:	Unknown
Spill Notifier:	Local Agency
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2006-05-12
Spill Record Last Update:	2006-05-15
Spiller Name:	UNKNOWN
Spiller Company:	BFI WASTE SYSTEM OF NY
Spiller Address:	UNKNOWN
Spiller Company:	001
Contact Name:	MR. KAHANNY
DEC Memo:	"05/15/06-Vought-Off hours duty responder. Called Mr. Kahanny 917-709-9515) and spill on street with no sewers or drains affected. Spill on asphalt. Spiller was BFI Waste systems who were making pickup at site. Mr. Kahanny contacted cleanup company (Wash Doctor) who is coming to site to recover impacted adsorbent. Spill closed by Vought due to no impact to subsurface."
Remarks:	"CLEAN UP IS UNKNOWN."

All Materials:

Site ID:	363920
Operable Unit ID:	1121973
Operable Unit:	01
Material ID:	2111456
Material Code:	0010
Material Name:	hydraulic oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	55.00

BFI (598-636 SCHOLES STREET) (Continued) **S107788137**

Units:	G
Recovered:	Not reported
Oxygenate:	Not reported

AT310 **SPILL NUMBER 0003338** **NY LTANKS** **S104621153**
West **232 MESROLE ST** **N/A**
1/4-1/2 **BROOKLYN, NY**
0.448 mi.
2366 ft. **Site 2 of 2 in cluster AT**

Relative:
Higher

Actual:
41 ft.

LTANKS:

Name:	SPILL NUMBER 0003338
Address:	232 MESROLE ST
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0003338 / 2003-04-10
Facility ID:	0003338
Site ID:	202905
Spill Date:	2000-06-17
Spill Cause:	Tank Overfill
Spill Source:	Private Dwelling
Spill Class:	C3
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	MCTIBBE
Referred To:	Not reported
Reported to Dept:	2000-06-17
CID:	281
Water Affected:	Not reported
Spill Notifier:	Local Agency
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	2000-06-17
Spill Record Last Update:	2003-04-10
Spiller Name:	Not reported
Spiller Company:	UNKNOWN
Spiller Address:	Not reported
Spiller County:	001
Spiller Contact:	ZOLA BAILEY
Spiller Phone:	(718) 595-6700
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	168762
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was TIBBE HANDLED BY DEP AND FDNY."
Remarks:	"TANK OVERFILL AT ABOVE LOCATION. FIRE DEPT ON SCENE. ATTEMPTS ARE BEING MADE TO DETERMINE THE OIL COMPANY RESPONSIBLE. NO CALL BACK BEING REQUESTED AT TIME OF CALL."

All Materials:

Site ID:	202905
Operable Unit ID:	824732
Operable Unit:	01
Material ID:	551660
Material Code:	0001A

SPILL NUMBER 0003338 (Continued) **S104621153**

Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	50.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

311
ESE
1/4-1/2
0.449 mi.
2372 ft.

APARTMENT BLDG - TTF **NY LTANKS** **S118953531**
49 WYCKOFF AVE **N/A**
BROOKLYN, NY

Relative:
Higher

Actual:
30 ft.

LTANKS:

Name:	APARTMENT BLDG - TTF
Address:	49 WYCKOFF AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	1009563 / 2018-08-10
Facility ID:	1009563
Site ID:	443122
Spill Date:	2010-12-07
Spill Cause:	Tank Test Failure
Spill Source:	Private Dwelling
Spill Class:	D4
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	JMVACCAR
Referred To:	Not reported
Reported to Dept:	2010-12-07
CID:	Not reported
Water Affected:	Not reported
Spill Notifier:	Tank Tester
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	2010-12-07
Spill Record Last Update:	2018-08-10
Spiller Name:	BRIAN KILLCOIN
Spiller Company:	RPS PROPERTIES
Spiller Address:	390 BERRY STREET
Spiller County:	999
Spiller Contact:	ADVANCED TANK SERVICES
Spiller Phone:	(800) 440-8265
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	204622
DEC Memo:	"12/8/10-Vought-Primary off-hours responder. Vought called Jeff McKensey (Advanced Tank Services Cell: 973-229-5897 Off:800-440-8265) to determine if wet or dry leak. Vought called cell number for McKensey and asked him to return call to DEC. Vought called contact on expired PBS #2-605545 which was (RPS Properties - Pearl 718-384-5524) and number was not in service. PBS registration shows one 4000-gallon #2 fuel oil AST In contact with soil and registration expired 4/2/6. Vought called Advanced Tank and RP representative is

APARTMENT BLDG - TTF (Continued) **S118953531**

Brian Kilcoyne (EBI Consulting Fax:781-418-2353 Ph:781-418-2349). Vought called Kilcoyne and left message to return call to DEC. Vought spoke to Kilcoyne and lender is closing on deal this week. No overt evidence of wet leak and as such tank not required to be emptied immediately. Kilcoyne will confirm dry leak. Vought provided Kilcoyne contact info for DEC Falvey as future project manager. Vought prepared TTF letter and had signed by DEC Falvey with one month due date for TTF and immediate due date for registration. Letter sent to owners address as per ACRIS and PBS: RPS Properties, LLC 116 Nostrand Avenue Brroklyn, NY 11205 Sam: (917)468-6871 Site contact: Chasikel Strulovitch (CS Management 718-599-8300 fax: 718-384-0864) with cc to Advanced Tank and ABI. Vought called CS Management and asked for Stulovitch and was told he was away and informed them of oil spill. Vought spoke to Pearl from RPS and informed her or failure and PBS expiration. Vought received call back from McKensey who confirmed that leak was dry leak. 10/18/12 Received call from Greg Ernst of Associated Environmental Services (631)234-4280. He wanted to know what he needed to do to close the case. Owner want to refinance property and bank is requiring needs spill case closure. I sent him the December 2010 ttf letter by email: grege@assocenvsvcs.com. bf 07/16/13 - Spill Case is transferred from Brian Falvey (PBS Unit) to V. Brevdo (Section B) as per DER Region 2 decision - Tank Test Failure Spill Case. VB 05/21/2014 - V. Brevdo Called Greg Ernst of Associated Environmental Services (631)234-4280 to discuss spill case. Left message with the receiptionist. VB 2/2/18 - Spill transferred to Central Office Spills. 2/21/18 - Josh Vaccaro NYSDEC and Randy Whitcher NYSDEC inspected the property on February 21st, 2018. The building appeared to be well maintained and currently functioning as an office building. Nearby properties included office buildings, auto repair shops, and restaurants. -JMV 5/8/18 - Called former owner found on PBS application he stated he stated that he no longer owns the property and took care of the tank prior to selling the site. He did not have any documentation. -JMV 8/10/18 - Central Office Spills Kevin Hale, Randy Whitcher, and Joshua Vaccaro discussed the spill and determined the spill will be closed administratively not meeting standards, based on the following assessment. The spill was a dry tank test failure. Contact with the buildings current owner have been difficult. The former owner who the spill occurred under stated that the tank was repair prior to the sale of the property; no reports are available to confirm. Contact information for the new owner was given (Joe 718-599-3500) several attempts were made to reach Joe but have been unable to get ahold of him. Based on the factors listed above the spill will be closed administratively on August 10, 2018, not meeting standards. Spill Closure report available in D2. - JMV"

Remarks: "5000 gal tank failed test. Repairs being scheduled."

All Materials:

Site ID:	443122
Operable Unit ID:	1193594
Operable Unit:	01
Material ID:	2189007
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	Not reported
Units:	Not reported

APARTMENT BLDG - TTF (Continued) **S118953531**

Recovered: Not reported
Oxygenate: Not reported

AV312 **255 RANDOLPH STREET** **NY BROWNFIELDS** **S120706187**
ENE **255 RANDOLPH STREET** **N/A**
1/4-1/2 **BROOKLYN, NY 11237**
0.449 mi.
2372 ft. **Site 3 of 3 in cluster AV**

Relative: **Lower**
Actual: **16 ft.**

BROWNFIELDS:

Name:	255 RANDOLPH STREET
Address:	255 RANDOLPH STREET
City,State,Zip:	BROOKLYN, NY 11237
Program:	BCP
Site Code:	534911
Acres:	0.427
HW Code:	C224247
SWIS:	2401
Town:	New York City
Record Added Date:	10/25/2016
Record Updated Date:	12/04/2017
Update By:	DJEVANS
Site Description:	Location: The Site is located in an urban area on the north side of Randolph Street just east of Scott Avenue in an industrial section of Brooklyn. Site Features: Most of the 17,741 SF property is covered with a 15,000 SF warehouse building with a small dirt lot located on the north side of the building and adjacent to the Long Island Railroad (LIRR) right-of-way. Current Zoning and Land Use: The lot and the surrounding area are currently zoned M3-1 (Manufacturing/Industrial). There are no residential uses within the surrounding area. The property is currently vacant. Past Use of the Site: The Site was last used for warehousing by Handy Lee Enterprises, an importer of Asian food products, from approximately 2006 until August 2015. According to the City Directory Abstract, the Site was occupied by a sheet metal fabricator in the 1990s. Prior to this, according to Sanborn Fire Insurance Maps, the Site was associated with the manufacture of ammonia for many decades, from at least 1907 to 1985. Sanborn maps from 1933 through 2007 show two exterior steel ammonia tanks and an acid storage area on adjacent property to the east, with no indication of production operations within the Site. However, the 1907 Sanborn map shows the manufacturing facility in a different location on the block, with components of such facility within the footprint of the current Site (acid tank and evaporation pan) or partially within the footprint of the current Site (storage area, grinding and mixing area, acid chambers). None of the Sanborn maps or other historical resources indicate the use or storage of chlorinated solvents, which are key contaminants of concern at the Site. Site Geology and Hydrogeology: The depth to groundwater is approximately 15 feet below grade, with the flow towards the north.
Env Problem:	Information submitted with the BCP application regarding the environmental condition at the site are currently under review and will be revised as additional information becomes available.
Health Problem:	Information submitted with the BCP application regarding the conditions at the site are currently under review and will be revised as additional information becomes available.
Dump:	Not reported

255 RANDOLPH STREET (Continued) **S120706187**

Structure:	Not reported
Lagoon:	Not reported
Landfill:	Not reported
Pond:	Not reported
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	Not reported
Dell:	Not reported
Record Add:	Not reported
Record Upd:	Not reported
Updated By:	Not reported
Own Op:	Owner
Sub Type:	E
Owner Name:	James Juliano
Owner Company:	255 Randolph Street Properties, LLC
Owner Address:	213-19 99th Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Queens Village, NY 11429
Owner Country:	United States of America
Own Op:	Applicant/Requestor
Sub Type:	P02
Owner Name:	James Juliano
Owner Company:	255 Randolph Street Properties, LLC
Owner Address:	213-19 99th Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Queens Village, NY 11429
Owner Country:	United States of America
Own Op:	Document Repository
Sub Type:	NNN
Owner Name:	Not reported
Owner Company:	Brooklyn Public Library - Bushwick Branch
Owner Address:	340 Bushwick Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11206
Owner Country:	United States of America
Own Op:	Document Repository
Sub Type:	NNN
Owner Name:	Not reported
Owner Company:	Brooklyn Community Board 16
Owner Address:	444 Thomas S. Boyland Street
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11212
Owner Country:	United States of America
HW Code:	Not reported
Waste Type:	Not reported
Waste Quantity:	Not reported
Waste Code:	Not reported
Crossref ID:	Not reported
Cross Ref Type Code:	Not reported
Cross Ref Type:	Not reported
Record Added Date:	Not reported
Record Updated:	Not reported
Updated By:	Not reported

AW313 **GADS INC** **NY SWF/LF** **S107406892**
NE **594 SCHOLES STREET** **N/A**
1/4-1/2 **BROOKLYN, NY 11237**
0.451 mi.
2380 ft. **Site 4 of 4 in cluster AW**

Relative: **Lower**
Actual: **16 ft.**

SWF/LF:

Flag:	ACTIVE
Region Code:	2
Phone Number:	7184162190
Owner Name:	Michael Allocco
Owner Type:	Private
Owner Address:	540 Kingsland Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11222
Owner Email:	Not reported
Owner Phone:	7183493094
Contact Name:	Anthony Strano
Contact Address:	594 Scholes Street
Contact Addr2:	Not reported
Contact City,St,Zip:	Brooklyn, NY 11237
Contact Email:	anthony@alloccorecycling.com
Contact Phone:	7184182190
Activity Desc:	z Retired - C&D processing - permit
Activity Number:	[24WF7]
Active:	Yes
East Coordinate:	590889
North Coordinate:	4507379
Accuracy Code:	Not reported
Regulatory Status:	Permit
Waste Type:	Construction & Demolition Debris;Metals (Ferrous);Metals (Non-Ferrous);Concrete;Paper / Cardboard;Plastics;Wood (Chips);Wood (Unadulterated)
Authorization #:	2-6104-01347/00001
Authorization Date:	11/30/2015
Expiration Date:	11/29/2020
Operator Name:	Michael Allocco
Operator Type:	Private
Laste Date:	Not reported

AX314 **902-908 FLUSHING AVENUE** **NY VCP** **S118943473**
SW **902-908 FLUSHING AVENUE** **N/A**
1/4-1/2 **NEW YORK CITY, NY**
0.452 mi.
2385 ft. **Site 1 of 2 in cluster AX**

Relative: **Higher**
Actual: **34 ft.**

VCP NYC:

Project ID:	15CVCP084K
Project Name:	902-908 FLUSHING AVENUE
Project Address:	902-908 FLUSHING AVENUE
Borough:	BROOKLYN

VCP NYC:

Project ID:	15CVCP084K
File Name:	2015-03-26.RIR
URL:	http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/15CVCP084K/2015-03-26.15EHAN343K.report.Revised_RIR_v3.EBC.pdf

Project ID:	15CVCP084K
File Name:	2015-03-27.RAWP_Draft

902-908 FLUSHING AVENUE (Continued) **S118943473**

URL: http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/15CVCP084K/2015-03-27.15EHAN343K.report.Revised_RAWP_v2.EBC.pdf

Project ID: 15CVCP084K
File Name: 2015-03-30.Factsheet-1
URL: http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/15CVCP084K/2015-03-30.15CVCP084K.doc.FactSheet1.pdf

Project ID: 15CVCP084K
File Name: 2015-03-30.Translated_Factsheet-1
URL: http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/15CVCP084K/2015-03-30.15CVCP084K.doc.902-908_Flushing_Avenue.Translated_FactSheet-1.yx.pdf

Project ID: 15CVCP084K
File Name: 2015-03-30.Translated_CPS
URL: http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/15CVCP084K/2015-03-30.15CVCP084K.doc.902-908_Flushing_Avenue.Translated_Community_Protection_Statement.yx.pdf

Project ID: 15CVCP084K
File Name: 2015-06-02.Decision_Doc
URL: http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/15CVCP084K/2015-06-02.15EHAN343K.notice.Decision_Document.OER.pdf

Project ID: 15CVCP084K
File Name: 2015-06-12.Factsheet-2
URL: http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/15CVCP084K/2015-06-12.15CVCP084K.doc.902%E2%80%90908_Flushing_Avenue.FactSheet-2.pdf

Project ID: 15CVCP084K
File Name: 2015-06-12.Translated_Factsheet-2
URL: http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/15CVCP084K/2015-06-12.15CVCP084K.doc.902%E2%80%90908_Flushing_Avenue.Translated_FactSheet-2.pdf

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AY315 **SUNSHINE BISCUITS INC** **NY LTANKS 1000788133**
NNE **1251 METROPOLITAN AVE** **NY UST N/A**
1/4-1/2 **BROOKLYN, NY 11237**
0.457 mi.
2414 ft. **Site 1 of 2 in cluster AY**

Relative: **Lower**
Actual: **12 ft.**

LTANKS:
Name: 1251 METROPOLITAN AVE. /
Address: 1251 METROPOLITAN AVE
City,State,Zip: BROOKLYN, NY
Spill Number/Closed Date: 8607890 / 1987-03-25
Facility ID: 8607890
Site ID: 110767
Spill Date: 1987-03-24
Spill Cause: Tank Test Failure
Spill Source: Commercial/Industrial
Spill Class: Not reported
Cleanup Ceased: 1987-03-25
SWIS: 2401
Investigator: UNASSIGNED

SUNSHINE BISCUITS INC (Continued) **1000788133**

Referred To:	Not reported
Reported to Dept:	1987-03-25
CID:	Not reported
Water Affected:	Not reported
Spill Notifier:	Tank Tester
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	True
UST Involvement:	True
Remediation Phase:	0
Date Entered In Computer:	1987-04-02
Spill Record Last Update:	2004-09-30
Spiller Name:	Not reported
Spiller Company:	SUNSHINE BISQUIT
Spiller Address:	1251 METROPOLITAN AVE.
Spiller County:	001
Spiller Contact:	Not reported
Spiller Phone:	Not reported
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	96975
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was "
Remarks:	"2000 GALLONS (NO-LEAD) GASOLINE UNDERGROUND TANK SYSTEM FAILED PETRO TITE @ -.107 G/HR. POSSIBLE CAUSE EXTERNAL TEMPERATURE.CONTRACTOR ADVIS"

All TTF:

Facility ID:	8607890
Spill Number:	8607890
Spill Tank Test:	1530658
Site ID:	110767
Tank Number:	Not reported
Tank Size:	0
Material:	0009
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	00
Test Method 2:	Unknown
Leak Rate:	.00
Gross Fail:	Not reported
Modified By:	Spills
Last Modified Date:	Not reported

All Materials:

Site ID:	110767
Operable Unit ID:	905528
Operable Unit:	01
Material ID:	473380
Material Code:	0009
Material Name:	gasoline
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	-1.00
Units:	Not reported
Recovered:	.00

SUNSHINE BISCUITS INC (Continued) **1000788133**

Oxygenate: Not reported

UST:
Name: SUNSHINE BISCUITS INC
Address: 1251 METROPOLITAN AVE
City,State,Zip: BROOKLYN, NY 11237
Id/Status: 2-245070 / Unregulated/Closed
Program Type: PBS
Region: STATE
DEC Region: 2
Expiration Date: N/A
UTM X: 590657.22867
UTM Y: 4507553.62098
Site Type: Unknown

Affiliation Records:
Site Id: 9517
Affiliation Type: Facility Owner
Company Name: SUNSHINE BISCUITS INC
Contact Type: Not reported
Contact Name: Not reported
Address1: 100 WOODBRIDGE CENTER DR
Address2: Not reported
City: WOODBRIDGE
State: NJ
Zip Code: 07095
Country Code: 001
Phone: (201) 855-4000
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 9517
Affiliation Type: Mail Contact
Company Name: SUNSHINE BISCUITS INC
Contact Type: Not reported
Contact Name: Not reported
Address1: 100 WOODBRIDGE CENTER DR
Address2: Not reported
City: WOODBRIDGE
State: NJ
Zip Code: 07095
Country Code: 001
Phone: (201) 855-4000
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 9517
Affiliation Type: Facility Operator
Company Name: SUNSHINE BISCUITS INC
Contact Type: Not reported
Contact Name: SUNSHINE BISCUITS INC
Address1: Not reported

SUNSHINE BISCUITS INC (Continued) **1000788133**

Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 456-1220
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	9517
Affiliation Type:	Emergency Contact
Company Name:	SUNSHINE BISCUITS INC
Contact Type:	Not reported
Contact Name:	JACQUES MICHEL EYMA
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 723-4098
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	001
Tank ID:	40471
Tank Status:	Closed Prior to Micro Conversion, 03/91
Material Name:	Closed Prior to Micro Conversion, 03/91
Capacity Gallons:	4000
Install Date:	12/01/1979
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0009
Common Name of Substance:	Gasoline

Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

G03 - Tank Secondary Containment - Vault (w/o access)
H00 - Tank Leak Detection - None
D00 - Pipe Type - No Piping
F00 - Pipe External Protection - None
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping

SUNSHINE BISCUITS INC (Continued) **1000788133**

I04 - Overfill - Product Level Gauge (A/G)
A00 - Tank Internal Protection - None

Tank Number:	002
Tank ID:	40472
Tank Status:	Closed Prior to Micro Conversion, 03/91
Material Name:	Closed Prior to Micro Conversion, 03/91
Capacity Gallons:	2000
Install Date:	12/01/1979
Date Tank Closed:	Not reported
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0009
Common Name of Substance:	Gasoline
Tightness Test Method:	NN
Date Test:	Not reported
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
G03 - Tank Secondary Containment - Vault (w/o access)
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
F00 - Pipe External Protection - None
I04 - Overfill - Product Level Gauge (A/G)
D00 - Pipe Type - No Piping
A00 - Tank Internal Protection - None

AU316 **CLOSED-LACKOF RECENT INFO** **NY LTANKS** **S100346426**
NNW **1105 METROPOLITAN AV** **N/A**
1/4-1/2 **NYC, NY**
0.459 mi.
2423 ft. **Site 2 of 2 in cluster AU**

Relative: **Lower**
Actual: **11 ft.**

LTANKS:

Name:	CLOSED-LACKOF RECENT INFO
Address:	1105 METROPOLITAN AV
City,State,Zip:	NYC, NY
Spill Number/Closed Date:	8802460 / 2003-03-05
Facility ID:	8802460
Site ID:	183945
Spill Date:	1988-06-17
Spill Cause:	Tank Test Failure
Spill Source:	Commercial/Industrial
Spill Class:	C4
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	ADMIN. CLOSED
Referred To:	Not reported
Reported to Dept:	1988-06-17
CID:	Not reported
Water Affected:	Not reported

CLOSED-LACKOF RECENT INFO (Continued) **S100346426**

Spill Notifier:	Tank Tester
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	1988-06-24
Spill Record Last Update:	2003-03-18
Spiller Name:	CONTACT JOE
Spiller Company:	STERLING OPTICAL
Spiller Address:	Not reported
Spiller County:	001
Spiller Contact:	Not reported
Spiller Phone:	Not reported
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	153958
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was ADMIN.CLOSED / / : Replace Vent Line, Empty Tank & Retest. 03/05/2003- Closed Due To The Nature / Extent Of The Spill Report"
Remarks:	"L R =-20 GPH. NEVER STABILIZED 7.5K TANK.CLOSED DUE TO LACK OF ANY RECENT INFO- DOES NOT MEET ANY CLEAN UP REQUIREMENTS."

All TTF:

Facility ID:	8802460
Spill Number:	8802460
Spill Tank Test:	1534139
Site ID:	183945
Tank Number:	Not reported
Tank Size:	0
Material:	0001
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	00
Test Method 2:	Unknown
Leak Rate:	.00
Gross Fail:	Not reported
Modified By:	Spills
Last Modified Date:	Not reported

All Materials:

Site ID:	183945
Operable Unit ID:	919680
Operable Unit:	01
Material ID:	458025
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	-1.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

317
ENE
1/4-1/2
0.470 mi.
2481 ft.

EMPIRE WAREHOUSE
1312-1324 FLUSHING AVE
BROOKLYN, NY

NY LTANKS **S104278053**
N/A

Relative:
Higher

Actual:
23 ft.

LTANKS:

Name:	EMPIRE WAREHOUSE
Address:	1312-1324 FLUSHING AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9903972 / 2000-08-23
Facility ID:	9903972
Site ID:	111006
Spill Date:	1999-07-06
Spill Cause:	Tank Test Failure
Spill Source:	Commercial/Industrial
Spill Class:	C3
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	SIGONA
Referred To:	Not reported
Reported to Dept:	1999-07-06
CID:	282
Water Affected:	Not reported
Spill Notifier:	Tank Tester
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	1999-07-06
Spill Record Last Update:	2000-08-23
Spiller Name:	JOE CARDONE
Spiller Company:	EMPIRE WAREHOUSE
Spiller Address:	1312-1324 FLUSHING AVE
Spiller County:	001
Spiller Contact:	JOE CARDONE
Spiller Phone:	(718) 366-7500
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	97140
DEC Memo:	""
Remarks:	"TANK FAILED THE TEST."

All TTF:

Facility ID:	9903972
Spill Number:	9903972
Spill Tank Test:	1547341
Site ID:	111006
Tank Number:	1
Tank Size:	7500
Material:	0002
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	03
Test Method 2:	Horner EZ Check I or II
Leak Rate:	.00
Gross Fail:	Not reported

EMPIRE WAREHOUSE (Continued) **S104278053**

Modified By: Spills
Last Modified Date: Not reported

All Materials:
Site ID: 111006
Operable Unit ID: 1078415
Operable Unit: 01
Material ID: 303871
Material Code: 0002A
Material Name: #4 fuel oil
Case No.: Not reported
Material FA: Petroleum
Quantity: .00
Units: G
Recovered: .00
Oxygenate: Not reported

AY318 **MANYA CORPORATION F.K.A KALEX CORP** **NY LTANKS** **U002034149**
NNE **235 GARDNER AVENUE** **NY UST** **N/A**
1/4-1/2 **BROOKLYN, NY 11211** **NY CBS**
0.472 mi.
2490 ft. **Site 2 of 2 in cluster AY**

Relative: LTANKS:
Lower
Name: KALEX CHEMICAL PRODUCTS
Actual: Address: 235 GARDNER AVENUE
12 ft. City,State,Zip: BROOKLYN, NY
Spill Number/Closed Date: 9002646 / 1992-10-02
Facility ID: 9002646
Site ID: 296438
Spill Date: 1990-06-06
Spill Cause: Tank Test Failure
Spill Source: Unknown
Spill Class: C4
Cleanup Ceased: 1992-10-02
SWIS: 2401
Investigator: BATTISTA
Referred To: Not reported
Reported to Dept: 1990-06-07
CID: Not reported
Water Affected: Not reported
Spill Notifier: Responsible Party
Last Inspection: Not reported
Recommended Penalty: False
Meets Standard: False
UST Involvement: False
Remediation Phase: 0
Date Entered In Computer: 1990-06-13
Spill Record Last Update: 2002-11-13
Spiller Name: Not reported
Spiller Company: Not reported
Spiller Address: Not reported
Spiller County: 001
Spiller Contact: Not reported
Spiller Phone: Not reported
Spiller Extention: Not reported

MANYA CORPORATION F.K.A KALEX CORP (Continued) **U002034149**

DEC Region: 2
DER Facility ID: 206083
DEC Memo: ""
Remarks: "8K TANK FULL OF #4 F.O. TO PLUG & E I & R"

All TTF:
Facility ID: 9002646
Spill Number: 9002646
Spill Tank Test: 1537161
Site ID: 296438
Tank Number: Not reported
Tank Size: 0
Material: 0002
EPA UST: Not reported
UST: Not reported
Cause: Not reported
Source: Not reported
Test Method: 00
Test Method 2: Unknown
Leak Rate: .00
Gross Fail: Not reported
Modified By: Spills
Last Modified Date: Not reported

All Materials:
Site ID: 296438
Operable Unit ID: 942647
Operable Unit: 01
Material ID: 437388
Material Code: 0002A
Material Name: #4 fuel oil
Case No.: Not reported
Material FA: Petroleum
Quantity: -1.00
Units: L
Recovered: .00
Oxygenate: Not reported

Name: MANYA CORPORATION
Address: 235 GARDNER AVENUE
City,State,Zip: BROOKLYN, NY
Spill Number/Closed Date: 9909043 / 2005-10-07
Facility ID: 9909043
Site ID: 296439
Spill Date: 1999-10-25
Spill Cause: Tank Failure
Spill Source: Commercial/Industrial
Spill Class: B3
Cleanup Ceased: Not reported
SWIS: 2401
Investigator: hmdudek
Referred To: Not reported
Reported to Dept: 1999-10-25
CID: 282
Water Affected: Not reported
Spill Notifier: Other

MANYA CORPORATION F.K.A KALEX CORP (Continued) **U002034149**

Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	1999-10-25
Spill Record Last Update:	2005-10-07
Spiller Name:	LAWRENCE BRUNT
Spiller Company:	MANYA CORPORATION
Spiller Address:	235 GARDNER AVE
Spiller County:	001
Spiller Contact:	N/A
Spiller Phone:	Not reported
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	206083
DEC Memo:	"10/7/05 - Site Visit 10/5/05. Decorama has occupied building since 2/05. Talked to consultant - Spill not petroleum, thought to be chemical."
Remarks:	"THEY WERE IN THE PROCESS OF REMOVING TANK FROM A CLOSED BUSINESS AND FOUND CONTAMINATION IN THE GROUND"

All Materials:

Site ID:	296439
Operable Unit ID:	1083649
Operable Unit:	01
Material ID:	298140
Material Code:	0064A
Material Name:	unknown material
Case No.:	Not reported
Material FA:	Other
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

Name:	KALEX CHEMICAL PRODUCTS
Address:	235 GARDNER AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	8808903 / 2004-07-06
Facility ID:	8808903
Site ID:	251434
Spill Date:	1989-02-14
Spill Cause:	Tank Test Failure
Spill Source:	Commercial/Industrial
Spill Class:	B3
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	RWAUSTIN
Referred To:	Not reported
Reported to Dept:	1989-02-15
CID:	Not reported
Water Affected:	Not reported
Spill Notifier:	Responsible Party
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False

MANYA CORPORATION F.K.A KALEX CORP (Continued) **U002034149**

UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	1989-02-21
Spill Record Last Update:	2004-07-06
Spiller Name:	Not reported
Spiller Company:	KALEX CHEMICAL PRODUCTS
Spiller Address:	Not reported
Spiller County:	001
Spiller Contact:	Not reported
Spiller Phone:	Not reported
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	206083
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was AUSTIN 10/10/95: This is additional information about material spilled from the translation of the old spill file: DIISODECYLTHALATE. 7/6/04 - AUSTIN - TRANSFERRED FROM GRATHWOL - CLOSED AND REFERRED TO SPILL #9909043 - END"
Remarks:	"3200 GALLON UNDERGROUND TANK FAILED PRECISON TEST,SYSTEMS TEST, LEAK RATE WAS 0.188GPH, TANK HAS BEEN EMPTIED & PRODUCT REMOVED TO ANOTHER TANK."

All TTF:

Facility ID:	8808903
Spill Number:	8808903
Spill Tank Test:	1535174
Site ID:	251434
Tank Number:	Not reported
Tank Size:	0
Material:	Not reported
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	00
Test Method 2:	Unknown
Leak Rate:	.00
Gross Fail:	Not reported
Modified By:	Spills
Last Modified Date:	Not reported

Name:	KALEX CHEMICAL PRODUCTS
Address:	235 GARDNER AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9405227 / 1994-07-17
Facility ID:	9405227
Site ID:	251435
Spill Date:	1994-07-17
Spill Cause:	Tank Overfill
Spill Source:	Institutional, Educational, Gov., Other
Spill Class:	C3
Cleanup Ceased:	1994-07-17
SWIS:	2401
Investigator:	SIGONA
Referred To:	Not reported
Reported to Dept:	1994-07-17
CID:	Not reported

MANYA CORPORATION F.K.A KALEX CORP (Continued) **U002034149**

Water Affected:	Not reported
Spill Notifier:	Fire Department
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	True
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	1994-10-14
Spill Record Last Update:	2002-11-13
Spiller Name:	Not reported
Spiller Company:	KALEX CHEMICAL PRODUCTS
Spiller Address:	235 GARDNER AVENUE
Spiller County:	001
Spiller Contact:	Not reported
Spiller Phone:	Not reported
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	206083
DEC Memo:	""
Remarks:	"NYCFD/DEC RESPONDED TO SPILL, INSPECTED CLEANUP WHICH IS NEARLY COMPLETE BY FOLLOWING DAY. SPILL CONTAINED INSIDE , CLEANUP BY KALEX."
	Not reported

All Materials:

Site ID:	251435
Operable Unit ID:	1002417
Operable Unit:	01
Material ID:	381822
Material Code:	0002A
Material Name:	#4 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	150.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

UST:

Name:	MANYA CORPORATION F.K.A KALEX CORP
Address:	235 GARDNER AVENUE
City,State,Zip:	BROOKLYN, NY 11211
Id/Status:	2-472689 / Unregulated/Closed
Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	N/A
UTM X:	590697.55086
UTM Y:	4507649.89008
Site Type:	Other

Affiliation Records:

Site Id:	20752
Affiliation Type:	Facility Owner
Company Name:	MANYA CORPORATION F.K.A. KALEX CORP.
Contact Type:	CHIEF FINANCIAL OFFICER
Contact Name:	MARK KAUFMAN
Address1:	235 GARDNER AVENUE

MANYA CORPORATION F.K.A KALEX CORP (Continued) **U002034149**

Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11211
Country Code:	001
Phone:	(973) 616-9700
EMail:	Not reported
Fax Number:	Not reported
Modified By:	KXTANG
Date Last Modified:	2005-07-12

Site Id:	20752
Affiliation Type:	Mail Contact
Company Name:	HEROLD AND HAINES, P.A.
Contact Type:	Not reported
Contact Name:	ANTHONY J. REITANO, ESQ.
Address1:	25 INDEPENDENCE BOULEVARD
Address2:	Not reported
City:	WARREN
State:	NJ
Zip Code:	07059
Country Code:	001
Phone:	(908) 647-1022
EMail:	Not reported
Fax Number:	Not reported
Modified By:	KXTANG
Date Last Modified:	2005-07-12

Site Id:	20752
Affiliation Type:	Facility Operator
Company Name:	MANYA CORPORATION F.K.A KALEX CORP
Contact Type:	Not reported
Contact Name:	N/A
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	N/A
EMail:	Not reported
Fax Number:	Not reported
Modified By:	KXTANG
Date Last Modified:	2005-07-12

Site Id:	20752
Affiliation Type:	Emergency Contact
Company Name:	MANYA CORPORATION F.K.A. KALEX CORP.
Contact Type:	Not reported
Contact Name:	N/A
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	999
Phone:	N/A

MANYA CORPORATION F.K.A KALEX CORP (Continued) **U002034149**

EMail: Not reported
Fax Number: Not reported
Modified By: KXTANG
Date Last Modified: 2005-07-12

Tank Info:

Tank Number: 001
Tank ID: 37188
Tank Status: Closed - Removed
Material Name: Closed - Removed
Capacity Gallons: 8000
Install Date: Not reported
Date Tank Closed: 10/25/1999
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0003
Common Name of Substance: #6 Fuel Oil (On-Site Consumption)

Tightness Test Method: 14
Date Test: 07/01/1994
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: KXTANG
Last Modified: 04/14/2017

Equipment Records:

C02 - Pipe Location - Underground/On-ground
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
B00 - Tank External Protection - None
F00 - Pipe External Protection - None
H00 - Tank Leak Detection - None
I00 - Overfill - None
L09 - Piping Leak Detection - Exempt Suction Piping
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

CBS:

Name: MANYA CORPORATION F.K.A. KALEX CHEMICAL PRODUCTS,
Address: 235 GARDNER AVENUE
City,State,Zip: BROOKLYN, NY 11211
CBS Number: 2-000022
Program Type: CBS
Facility Status: Unregulated/Closed
Expiration Date: Not reported
Dec Region: 2
UTMX: 590670.20300
UTMY: 4507597.72166

319
NNW
1/4-1/2
0.478 mi.
2526 ft.

1101 METROPOLITAN AVE
1101 METROPOLITAN AVE
BROOKLYN, NY

NY LTANKS **S103238306**
N/A

Relative:
Lower

Actual:
8 ft.

LTANKS:

Name:	1101 METROPOLITAN AVE
Address:	1101 METROPOLITAN AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9800642 / 2006-05-17
Facility ID:	9800642
Site ID:	190461
Spill Date:	1998-04-15
Spill Cause:	Tank Test Failure
Spill Source:	Commercial/Industrial
Spill Class:	B4
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	SIGONA
Referred To:	Not reported
Reported to Dept:	1998-04-15
CID:	205
Water Affected:	Not reported
Spill Notifier:	Responsible Party
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	True
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	1998-04-15
Spill Record Last Update:	2006-05-17
Spiller Name:	USA TANKS
Spiller Company:	1101 METROPOLITIAN AVE
Spiller Address:	1101 METROPOLITIAN AVE
Spiller County:	001
Spiller Contact:	USA TANKS
Spiller Phone:	(718) 384-9151
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	158882
DEC Memo:	"5/17/06 - Mike - PBS# 2-109932 Tank was closed in place. Only one tank exsisted at site, Spill Report suggests tank #2 failed but there is no #2 tank. Occupant has documentation for proper closing and of no contamination. March 20, 2006 - have not worked on this spill to date - Jones Next Step - establish contact with site owner as per spill report."
Remarks:	"TESTED TANK.TANK FAILED."

All TTF:

Facility ID:	9800642
Spill Number:	9800642
Spill Tank Test:	1545783
Site ID:	190461
Tank Number:	1
Tank Size:	3000
Material:	0001
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported

1101 METROPOLITAN AVE (Continued) **S103238306**

Source: Not reported
Test Method: 03
Test Method 2: Horner EZ Check I or II
Leak Rate: .00
Gross Fail: Not reported
Modified By: Spills
Last Modified Date: Not reported

All Materials:
Site ID: 190461
Operable Unit ID: 1061125
Operable Unit: 01
Material ID: 322598
Material Code: 0001A
Material Name: #2 fuel oil
Case No.: Not reported
Material FA: Petroleum
Quantity: .00
Units: G
Recovered: .00
Oxygenate: Not reported

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320 North 1/4-1/2 0.484 mi. 2556 ft. **CONSOLIDATED CARPET** **NY LTANKS** **S102619094**
1157 GRAND ST **N/A**
BROOKLYN, NY

Relative: Lower
Actual: 2 ft.

LTANKS:
Name: CONSOLIDATED CARPET
Address: 1157 GRAND ST
City,State,Zip: BROOKLYN, NY
Spill Number/Closed Date: 9511303 / 2006-02-07
Facility ID: 9511303
Site ID: 193820
Spill Date: 1995-12-07
Spill Cause: Tank Test Failure
Spill Source: Non Major Facility > 1,100 gal
Spill Class: B3
Cleanup Ceased: Not reported
SWIS: 2401
Investigator: ADZHITOM
Referred To: INVESTIGATION/DELINEATION
Reported to Dept: 1995-12-07
CID: 323
Water Affected: Not reported
Spill Notifier: Tank Tester
Last Inspection: Not reported
Recommended Penalty: False
Meets Standard: False
UST Involvement: True
Remediation Phase: 0
Date Entered In Computer: 1995-12-07
Spill Record Last Update: 2006-02-07
Spiller Name: STEVEN SACCHINELLI
Spiller Company: CONSOLIDATED CARPET

CONSOLIDATED CARPET (Continued) **S102619094**

Spiller Address:	1157 GRAND ST
Spiller County:	001
Spiller Contact:	STEVEN SACCHINELLI
Spiller Phone:	(718) 456-8207
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	161550
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was ROMMEL This spill was reassigned from DEC Sigona to Rommel on January 7, On Thursday January 25, 1996, Dave Pulvermiller of MTS Environserve called A.Sigona and informed that the 550 gallon UST which failed a tank test would be removed along with two other 550 gallon gasoline USTs. They would be taking samples and doing a site assessment during the tank removal. The tanks will be registered and will submit a substantial modification application. The tanks will be removed the week of January 29, 1996, and DEC Sigona is planning to view the excavations on Tuesday January 30, 1996 at 3:30 PM. The consultant plans to sample and test using EPA method 8020. 3/10/05 - Received Phase II Investigation Report from Laurel Environmental. Re-assigned to Zhitomirsky for followup. - KST 4/25/2005 I left a message for Carla Sullivan.AZ 4/27/2005 Conversation with Carla Sullivan (Laurel Environmental). They plan to excavate contaminated soil and take post excavation samples. I requested to take groundwater samples if gorundwater is encountered. GWT is 10' below the grade. The tank was located at 1181 Grand Street.This is a warehouse. They will submit a report in June 2005. AZ 7-27-2005 Laurel Environmental informed DEC that they will remove contaminated soils and apply ORC into the exposed groundwater during the week of August 1, 2005. AZ 10/14/2005 I reviewed Soil Removal Report for this spill. A letter was sent to Laurel Env. with my comments. The letter stated that the following deficiencies were noticed in the report: 1. Post excavation soil samples were not taken 2. The site plan was not drawn to scale 3. Groundwater flow direction was not indicated on the plan 4. Well design diagrams were not submitted 5. Soil samples were not collected and screened during well installation. The report stated that analytical results of groundwater samples collected during this investigation indicate minor exceedances of State water quality standards in samples collected from wells MW-1and MW-2. Laurel Environmental recommended no further action with respect to the removed USTs. The Department could not approve no further action at this time. In consultation with J. Kolleeny it was decided that an additional monitoring well should be installed near the excavated area. Soil samples should be collected during well installation and analyzed in a laboratory. Groundwater at the site should be monitored and sampled again three months after the recent samples were taken. Laboratory data should be provided for all compounds analyzed by EPA Method 8021 plus MTBE, and the results compared to State guidelines. These recommendations were mailed to Laurel Env. AZ 1/17/2006 Additional investigation/delineation is pending. Field work has been done. AZ 2/7/2006 I have reviewed a report by Laurel Environmental Assosiates (LEA). The report states that LEA installed 3 one-inch groundwater monitoring wells. On December 16, 2005, LEA purged and sampled the wells. Laboratory analysis inicates that with the exception of a slight exceedance of m and p xylenes and total xylenes at 7 ppb in MW-2, the concentrations of VOCs are below NYSDEC ambient groundwater criteria. According to the report, the tank and contaminated soil have been removed and groundwater treated in-situ.

CONSOLIDATED CARPET (Continued) **S102619094**

Based on this information the spill is closed. This spill case was discussed with Koon Tang on 1/23/2006 and he concurred with this decision. AZ"

Remarks: "TEST METHOD NDE MODEL 1000, UNKNOWN LEAK RATE."

All TTF:

Facility ID:	9511303
Spill Number:	9511303
Spill Tank Test:	1544300
Site ID:	193820
Tank Number:	1
Tank Size:	550
Material:	0009
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	00
Test Method 2:	Unknown
Leak Rate:	.00
Gross Fail:	Not reported
Modified By:	Spills
Last Modified Date:	Not reported

All Materials:

Site ID:	193820
Operable Unit ID:	1021843
Operable Unit:	01
Material ID:	358651
Material Code:	0009
Material Name:	gasoline
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

AZ321 **NEWTOWN CREEK** **NPL** **1011845384**
North **SOUTH END OF IVY HILL ROAD** **SEMS** **NYN000206282**
1/4-1/2 **BROOKLYN, QUEENS, NY 11222** **RCRA-SQG**
0.486 mi. **PRP**
2568 ft. **Site 1 of 2 in cluster AZ** **NY MANIFEST**

Relative:
Lower

Actual:
-1 ft.

NPL:

EPA ID:	NYN000206282
Cerclis ID:	206282
EPA Region:	2
Federal:	N
Final Date:	2010-09-29 00:00:00
Site Score:	50
Latitude:	40.715192000000002
Longitude:	-73.930762000000001

SEMS:

NEWTOWN CREEK (Continued) **1011845384**

Site ID: 0206282
EPA ID: NYN000206282
Cong District: 12
FIPS Code: Not reported
Latitude: +40.715192
Longitude: -073.930762
FF: N
NPL: Currently on the Final NPL
Non NPL Status: Not reported

SEMS Detail:

Region: 02
Site ID: 0206282
EPA ID: NYN000206282
Site Name: NEWTOWN CREEK
NPL: F
FF: N
OU: 00
Action Code: TA
Action Name: TECH ASSIST
SEQ: 2
Start Date: 2014-10-31 04:00:00
Finish Date: Not reported
Qual: Not reported
Current Action Lead: EPA Perf

Region: 02
Site ID: 0206282
EPA ID: NYN000206282
Site Name: NEWTOWN CREEK
NPL: F
FF: N
OU: 00
Action Code: TA
Action Name: TECH ASSIST
SEQ: 1
Start Date: 2014-09-11 05:00:00
Finish Date: Not reported
Qual: Not reported
Current Action Lead: EPA Perf

Region: 02
Site ID: 0206282
EPA ID: NYN000206282
Site Name: NEWTOWN CREEK
NPL: F
FF: N
OU: 00
Action Code: NP
Action Name: PROPOSED
SEQ: 1
Start Date: 2009-09-23 04:00:00
Finish Date: 9/23/2009 4:00:00 AM
Qual: Not reported
Current Action Lead: EPA Perf

Region: 02
Site ID: 0206282

NEWTOWN CREEK (Continued) **1011845384**

EPA ID: NYN000206282
Site Name: NEWTOWN CREEK
NPL: F
FF: N
OU: 00
Action Code: HR
Action Name: HAZRANK
SEQ: 1
Start Date: 2009-06-01 05:00:00
Finish Date: Not reported
Qual: Not reported
Current Action Lead: EPA Perf

Region: 02
Site ID: 0206282
EPA ID: NYN000206282
Site Name: NEWTOWN CREEK
NPL: F
FF: N
OU: 00
Action Code: DS
Action Name: DISCVRY
SEQ: 1
Start Date: 2008-08-15 05:00:00
Finish Date: 8/15/2008 5:00:00 AM
Qual: Not reported
Current Action Lead: EPA Perf

Region: 02
Site ID: 0206282
EPA ID: NYN000206282
Site Name: NEWTOWN CREEK
NPL: F
FF: N
OU: 01
Action Code: CO
Action Name: RI/FS
SEQ: 1
Start Date: 2010-02-05 05:00:00
Finish Date: 7/7/2011 5:00:00 AM
Qual: Not reported
Current Action Lead: EPA Perf

Region: 02
Site ID: 0206282
EPA ID: NYN000206282
Site Name: NEWTOWN CREEK
NPL: F
FF: N
OU: 00
Action Code: NF
Action Name: NPL FINL
SEQ: 1
Start Date: 2010-09-29 04:00:00
Finish Date: 9/29/2010 4:00:00 AM
Qual: Not reported
Current Action Lead: EPA Perf

NEWTOWN CREEK (Continued) **1011845384**

Region:	02
Site ID:	0206282
EPA ID:	NYN000206282
Site Name:	NEWTOWN CREEK
NPL:	F
FF:	N
OU:	02
Action Code:	NK
Action Name:	PRP FS
SEQ:	1
Start Date:	2018-12-20 05:00:00
Finish Date:	Not reported
Qual:	Not reported
Current Action Lead:	EPA Ovrsght

Region:	02
Site ID:	0206282
EPA ID:	NYN000206282
Site Name:	NEWTOWN CREEK
NPL:	F
FF:	N
OU:	01
Action Code:	BD
Action Name:	PRP RI/FS
SEQ:	1
Start Date:	2011-07-07 05:00:00
Finish Date:	Not reported
Qual:	Not reported
Current Action Lead:	EPA Ovrsght

RCRA-SQG:

Date form received by agency:	03/21/2012
Facility name:	NEWTOWN CREEK SUPERFUND SITE
Facility address:	NEWTOWN CRK - N LAT 40.715192 & 73'55 NEW YORK, NY 99999
EPA ID:	NYN000206282
Mailing address:	W GRAND AVE STE 300 MONTVALE, NJ 07645-1813
Contact:	JIM QUADRINI
Contact address:	W GRAND AVE STE 300 MONTVALE, NJ 07645-1813
Contact country:	US
Contact telephone:	201-930-9890
Telephone ext.:	1012
Contact email:	JQUADRINI@ANCHORQEA.COM
EPA Region:	02
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

NEWTOWN CREEK (Continued) **1011845384**

Owner/operator name: CAROLINE KWAN-US EPA
Owner/operator address: BROADWAY
NEW YORK, NY 10007
Owner/operator country: US
Owner/operator telephone: 212-637-4275
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 01/01/1980
Owner/Op end date: Not reported

Owner/operator name: DAY PITNEY LLP
Owner/operator address: Not reported
Not reported
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 04/16/2012
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Hazardous Waste Summary:

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

NEWTOWN CREEK (Continued) **1011845384**

. Waste code: D009
. Waste name: MERCURY

. Waste code: D010
. Waste name: SELENIUM

. Waste code: D015
. Waste name: TOXAPHENE (C10 H10 CL8, TECHNICAL CHLORINATED CAMPHENE, 67-69 PERCENT CHLORINE)

. Waste code: D020
. Waste name: CHLORDANE

. Waste code: D031
. Waste name: HEPTACHLOR (AND ITS EPOXIDE)

Violation Status: No violations found

PRP:
PRP Name:
APOLLO PETROLEUM TRANSPORT LLC
APOLLO PIPELINE LLC
APOLLO TRANSPORT INC
BP AMERICA HEADQUARTERS
BP AMERICA HEADQUARTERS
BROOKLYN UNION GAS
BROOKLYN UNION GAS
EXXONMOBIL CORPORATION
EXXONMOBIL CORPORATION
GETTY PETROLEUM MARKETING INC
GETTY TERMINALS CORP
KINGS LAND REALTY INC
METRO BIOFUELS LLC
METRO ENERGY GROUP LLC
METRO PLUMBING SERVICES CORP
METRO TERMINALS CORP
METRO TERMINALS OF LONG ISLAND LLC
NEW YORK CITY
PHELPS DODGE REFINING CORP
PHELPS DODGE REFINING CORP
TEXACO, INC.
TEXACO, INC.

NY MANIFEST:
Country: USA
EPA ID: NYN000206282
Facility Status: Not reported
Location Address 1: - VERNON BLVD
Code: BP
Location Address 2: Not reported
Total Tanks: Not reported
Location City: LONG ISLAND CITY
Location State: NY
Location Zip: 11101
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYN000206282
Mailing Name: NEWTOWN CREEK SUPERFUND SITE

NEWTOWN CREEK (Continued) **1011845384**

Mailing Contact:	C/O ANCHOR QEA LLC
Mailing Address 1:	TICE BLVD - SUITE
Mailing Address 2:	Not reported
Mailing City:	WO0ODCLIFF LAKE
Mailing State:	NJ
Mailing Zip:	07677
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	2015710912

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2014
Trans1 State ID:	CTD021816889
Trans2 State ID:	Not reported
Generator Ship Date:	10/31/2014
Trans1 Recv Date:	10/31/2014
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	10/31/2014
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYN000206282
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	CTD021816889
TSDF ID 2:	Not reported
Manifest Tracking Number:	013301186JJK
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H141
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	55
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	1
Container Type:	DM - Metal drums, barrels
Handling Method:	B Incineration, heat recovery, burning.
Specific Gravity:	1
Waste Code:	F003
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported

NEWTOWN CREEK (Continued) **1011845384**

Waste Code 1_6: Not reported

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

BA322 **BORINQUEN HOUSES** **NY LTANKS** **U002034217**
WSW **300 BUSHWICK AVENUE** **NY UST** **N/A**
1/4-1/2 **BROOKLYN, NY 11206**
0.487 mi.
2569 ft. **Site 1 of 2 in cluster BA**

Relative:
Higher

Actual:
19 ft.

LTANKS:

Name:	BORINQUEN PLAZA
Address:	300 BUSHWICK AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9711478 / 1998-02-02
Facility ID:	9711478
Site ID:	191464
Spill Date:	1998-01-13
Spill Cause:	Tank Test Failure
Spill Source:	Institutional, Educational, Gov., Other
Spill Class:	B4
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	SACCACIO
Referred To:	Not reported
Reported to Dept:	1998-01-13
CID:	369
Water Affected:	Not reported
Spill Notifier:	Other
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	1998-01-13
Spill Record Last Update:	1998-02-02
Spiller Name:	FRANK OCELLO
Spiller Company:	NYC HOUSING AUTHORITY
Spiller Address:	250 BROADWAY
Spiller County:	001
Spiller Contact:	FRANK OCELLO
Spiller Phone:	(212) 360-3233
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	159754
DEC Memo:	""
Remarks:	"tank failed and will be drained and inv is underway"

All TTF:

Facility ID:	9711478
Spill Number:	9711478
Spill Tank Test:	1545555
Site ID:	191464
Tank Number:	001
Tank Size:	5000
Material:	0001

BORINQUEN HOUSES (Continued) **U002034217**

EPA UST: Not reported
UST: Not reported
Cause: Not reported
Source: Not reported
Test Method: 03
Test Method 2: Horner EZ Check I or II
Leak Rate: .00
Gross Fail: Not reported
Modified By: Spills
Last Modified Date: Not reported

All Materials:
Site ID: 191464
Operable Unit ID: 1057978
Operable Unit: 01
Material ID: 326136
Material Code: 0001A
Material Name: #2 fuel oil
Case No.: Not reported
Material FA: Petroleum
Quantity: .00
Units: G
Recovered: .00
Oxygenate: Not reported

Name: BORINQUEN PLAZA
Address: 300 BUSHWICK AVENUE
City,State,Zip: BROOKLYN, NY
Spill Number/Closed Date: 9010701 / 1998-01-13
Facility ID: 9010701
Site ID: 191530
Spill Date: 1991-01-07
Spill Cause: Tank Test Failure
Spill Source: Institutional, Educational, Gov., Other
Spill Class: C3
Cleanup Ceased: Not reported
SWIS: 2401
Investigator: SACCACIO
Referred To: Not reported
Reported to Dept: 1991-01-07
CID: Not reported
Water Affected: Not reported
Spill Notifier: Tank Tester
Last Inspection: Not reported
Recommended Penalty: False
Meets Standard: False
UST Involvement: False
Remediation Phase: 0
Date Entered In Computer: 1991-01-16
Spill Record Last Update: 2003-08-05
Spiller Name: Not reported
Spiller Company: NYC HOUSING AUTHORITY
Spiller Address: 250 BROADWAY
Spiller County: 001
Spiller Contact: Not reported
Spiller Phone: Not reported

BORINQUEN HOUSES (Continued) **U002034217**

Spiller Extention: Not reported
DEC Region: 2
DER Facility ID: 159754
DEC Memo: ""
Remarks: "5K TANK FAILED HORNER EZY CHECK,SYSTEM TEST,GROSS LEAK,WILL EXCAVATE, ISOLATE,REPAIR & RETEST,SUSPECT LEAKING STICK LINE."

All TTF:
Facility ID: 9010701
Spill Number: 9010701
Spill Tank Test: 1538135
Site ID: 191530
Tank Number: 001
Tank Size: 0
Material: 0001
EPA UST: Not reported
UST: Not reported
Cause: Not reported
Source: Not reported
Test Method: 00
Test Method 2: Unknown
Leak Rate: .00
Gross Fail: Not reported
Modified By: Spills
Last Modified Date: Not reported

All Materials:
Site ID: 191530
Operable Unit ID: 947842
Operable Unit: 01
Material ID: 430831
Material Code: 0001A
Material Name: #2 fuel oil
Case No.: Not reported
Material FA: Petroleum
Quantity: -1.00
Units: L
Recovered: .00
Oxygenate: Not reported

Name: BORINQUEN PLAZA 1 -NYCHA
Address: 300 BUSHWICK AVENUE
City,State,Zip: BROOKLYN, NY
Spill Number/Closed Date: 9712046 / 2004-02-06
Facility ID: 9712046
Site ID: 191531
Spill Date: 1998-01-28
Spill Cause: Tank Test Failure
Spill Source: Private Dwelling
Spill Class: B3
Cleanup Ceased: Not reported
SWIS: 2401
Investigator: JAKOLLEE
Referred To: Not reported
Reported to Dept: 1998-01-28
CID: 204

BORINQUEN HOUSES (Continued) **U002034217**

Water Affected:	Not reported
Spill Notifier:	Tank Tester
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	1998-01-28
Spill Record Last Update:	2005-03-07
Spiller Name:	SEBASTION LOREFICE
Spiller Company:	NYC HOUSING AUTHORITY
Spiller Address:	250 BROADWAY
Spiller County:	001
Spiller Contact:	SEBASTION LOREFICE
Spiller Phone:	(212) 306-3229
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	159754
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was KOLLEENY SITE INVESTIGATIONS WERE PERFORMED BY TRC ENVIRONMENTAL IN THE MID 1990s AND BY GANNETT FLEMING IN 2002. VERY MINOR IMPACTS TO SOIL AND GROUNDWATER WERE IDENTIFIED IN THE AREA OF THE FORMER TANK. SEVERAL PAH COMPOUNDS WERE DETECTED IN SOIL AT LEVELS ABOVE TAGM 4046 GUIDELINES, IN THE HUNDREDS OF PPB (HIGHEST WAS CHRYSENE AT 780 UG/KG), AND SEVERAL PAHs WERE DETECTED IN ONE MONITORING WELL, WITH ONLY ONE COMPOUND EXCEEDING ITS GROUNDWATER STANDARD SLIGHTLY (CHRYSENE AT 1 UG/L). OK TO CLOSE. - JK "
Remarks:	"TO BE ISOLATED AND RETESTED"

All TTF:

Facility ID:	9712046
Spill Number:	9712046
Spill Tank Test:	1545581
Site ID:	191531
Tank Number:	001
Tank Size:	5000
Material:	0001
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	03
Test Method 2:	Horner EZ Check I or II
Leak Rate:	.00
Gross Fail:	Not reported
Modified By:	Spills
Last Modified Date:	Not reported

All Materials:

Site ID:	191531
Operable Unit ID:	1054708
Operable Unit:	01
Material ID:	326676
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum

BORINQUEN HOUSES (Continued) **U002034217**

Quantity: .00
Units: G
Recovered: .00
Oxygenate: Not reported

UST:
Name: BORINQUEN HOUSES
Address: 300 BUSHWICK AVENUE
City,State,Zip: BROOKLYN, NY 11206
Id/Status: 2-601869 / Unregulated/Closed
Program Type: PBS
Region: STATE
DEC Region: 2
Expiration Date: N/A
UTM X: 589622.17610
UTM Y: 4506619.90707
Site Type: Apartment Building/Office Building

Affiliation Records:
Site Id: 23831
Affiliation Type: Facility Owner
Company Name: NYC HOUSING AUTHORITY
Contact Type: FUEL OIL REMEDIATION COORDINATOR
Contact Name: FUEL OIL REMEDIATION COORD.
Address1: 23-02 49TH AVENUE
Address2: Not reported
City: LONG ISLAND CITY
State: NY
Zip Code: 11101
Country Code: 001
Phone: (718) 707-5725
EMail: Not reported
Fax Number: Not reported
Modified By: EXROSSAN
Date Last Modified: 2005-09-30

Site Id: 23831
Affiliation Type: Mail Contact
Company Name: NYC HOUSING AUTHORITY
Contact Type: Not reported
Contact Name: MR. LUIS PONCE
Address1: 23-02 49TH AVENUE
Address2: Not reported
City: LONG ISLAND CITY
State: NY
Zip Code: 11101
Country Code: 001
Phone: (718) 707-5725
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 23831
Affiliation Type: Facility Operator
Company Name: BORINQUEN HOUSES

BORINQUEN HOUSES (Continued) **U002034217**

Contact Type:	Not reported
Contact Name:	MR. LUIS PONCE
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 707-5725
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Site Id:	23831
Affiliation Type:	Emergency Contact
Company Name:	NYC HOUSING AUTHORITY
Contact Type:	Not reported
Contact Name:	EMERGENCY SERVICE DEPT.
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	999
Phone:	(718) 707-5725
EMail:	Not reported
Fax Number:	Not reported
Modified By:	EXROSSAN
Date Last Modified:	2005-09-21

Tank Info:

Tank Number:	1
Tank ID:	48184
Tank Status:	Closed - Removed
Material Name:	Closed - Removed
Capacity Gallons:	5000
Install Date:	02/01/1975
Date Tank Closed:	07/01/2000
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0000
Common Name of Substance:	Empty

Tightness Test Method:	03
Date Test:	02/01/1992
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

B00 - Tank External Protection - None
H00 - Tank Leak Detection - None
C02 - Pipe Location - Underground/On-ground

BORINQUEN HOUSES (Continued) **U002034217**

F06 - Pipe External Protection - Wrapped
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
I04 - Overfill - Product Level Gauge (A/G)
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

AZ323 **REPUBLIC MILL 1** **SEMS-ARCHIVE** **1011845380**
North **DEARBORN STREET** **SCN000410279**
1/4-1/2 **GREAT FALLS, SC 29055**
0.493 mi.
2601 ft. **Site 2 of 2 in cluster AZ**

Relative:
Lower

Actual:
-1 ft.

SEMS Archive:
Site ID: 0410279
EPA ID: SCN000410279
Cong District: Not reported
FIPS Code: 45023
FF: N
NPL: Not on the NPL
Non NPL Status: NFRAP-Site does not qualify for the NPL based on existing information

SEMS Archive Detail:
Region: 04
Site ID: 0410279
EPA ID: SCN000410279
Site Name: REPUBLIC MILL 1
NPL: N
FF: N
OU: 00
Action Code: VS
Action Name: ARCH SITE
SEQ: 1
Start Date: 2017-08-15 05:00:00
Finish Date: 2017-08-15 05:00:00
Qual: Not reported
Current Action Lead: EPA Perf In-Hse

Region: 04
Site ID: 0410279
EPA ID: SCN000410279
Site Name: REPUBLIC MILL 1
NPL: N
FF: N
OU: 00
Action Code: SI
Action Name: SI
SEQ: 1
Start Date: 2016-09-27 04:00:00
Finish Date: 2016-09-27 04:00:00
Qual: N
Current Action Lead: EPA Perf

Region: 04
Site ID: 0410279
EPA ID: SCN000410279
Site Name: REPUBLIC MILL 1
NPL: N

REPUBLIC MILL 1 (Continued) **1011845380**

FF:	N
OU:	00
Action Code:	DS
Action Name:	DISCVRY
SEQ:	1
Start Date:	2008-09-23 04:00:00
Finish Date:	2008-09-23 04:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf
Region:	04
Site ID:	0410279
EPA ID:	SCN000410279
Site Name:	REPUBLIC MILL 1
NPL:	N
FF:	N
OU:	00
Action Code:	PA
Action Name:	PA
SEQ:	1
Start Date:	2015-09-21 05:00:00
Finish Date:	2015-09-21 05:00:00
Qual:	H
Current Action Lead:	St Perf

BA324 **BORINQUEN HOUSES** **NY LTANKS** **U002034218**
WSW **330 BUSHWICK AVENUE** **NY UST** **N/A**
1/4-1/2 **BROOKLYN, NY 11206** **NY Spills**
0.495 mi.
2616 ft. **Site 2 of 2 in cluster BA**

Relative: **Lower**
Actual: **18 ft.**

LTANKS:

Name:	BORINQUEN -NYCHA
Address:	330 BUSHWICK AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9601914 / 2005-12-09
Facility ID:	9601914
Site ID:	63348
Spill Date:	1996-05-08
Spill Cause:	Tank Test Failure
Spill Source:	Institutional, Educational, Gov., Other
Spill Class:	B3
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	SWKRASZE
Referred To:	Not reported
Reported to Dept:	1996-05-08
CID:	233
Water Affected:	Not reported
Spill Notifier:	Responsible Party
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	False
Remediation Phase:	0
Date Entered In Computer:	1996-05-08
Spill Record Last Update:	2005-12-09

BORINQUEN HOUSES (Continued) **U002034218**

Spiller Name:	FRANK OCELO
Spiller Company:	NYC HOUSING AUTHORITY
Spiller Address:	250 BROADWAY
Spiller County:	001
Spiller Contact:	Not reported
Spiller Phone:	Not reported
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	61219
DEC Memo:	"12/09/05: This spill transferred from J.Kolleeny to S.Kraszewski. This spill closed to consolidate with opne spill #9613967."
Remarks:	"TANK FAILED TANK RETEST PLANNED "

All TTF:

Facility ID:	9601914
Spill Number:	9601914
Spill Tank Test:	1544531
Site ID:	63348
Tank Number:	1
Tank Size:	5000
Material:	0001
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	03
Test Method 2:	Horner EZ Check I or II
Leak Rate:	.00
Gross Fail:	Not reported
Modified By:	Spills
Last Modified Date:	Not reported

All Materials:

Site ID:	63348
Operable Unit ID:	1029518
Operable Unit:	01
Material ID:	351709
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

UST:

Name:	BORINQUEN HOUSES
Address:	330 BUSHWICK AVENUE
City,State,Zip:	BROOKLYN, NY 11206
Id/Status:	2-601870 / Unregulated/Closed
Program Type:	PBS
Region:	STATE
DEC Region:	2
Expiration Date:	N/A
UTM X:	589579.77766

BORINQUEN HOUSES (Continued) **U002034218**

UTM Y: 4506565.64952
Site Type: Apartment Building/Office Building

Affiliation Records:

Site Id: 23832
Affiliation Type: Facility Owner
Company Name: NYC HOUSING AUTHORITY
Contact Type: FUEL OIL REMEDIATION COORDINATOR
Contact Name: FUEL OIL REMEDIATION COORD.
Address1: 23-02 49TH AVENUE
Address2: Not reported
City: LONG ISLAND CITY
State: NY
Zip Code: 11101
Country Code: 001
Phone: (718) 707-5725
EMail: Not reported
Fax Number: Not reported
Modified By: EXROSSAN
Date Last Modified: 2005-09-30

Site Id: 23832
Affiliation Type: Mail Contact
Company Name: NYC HOUSING AUTHORITY
Contact Type: Not reported
Contact Name: MR. LUIS PONCE
Address1: 23-02 49TH AVENUE
Address2: Not reported
City: LONG ISLAND CITY
State: NY
Zip Code: 11101
Country Code: 001
Phone: (718) 707-5725
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 23832
Affiliation Type: Facility Operator
Company Name: BORINQUEN HOUSES
Contact Type: Not reported
Contact Name: MR. LUIS PONCE
Address1: Not reported
Address2: Not reported
City: Not reported
State: NN
Zip Code: Not reported
Country Code: 001
Phone: (718) 707-5725
EMail: Not reported
Fax Number: Not reported
Modified By: TRANSLAT
Date Last Modified: 2004-03-04

Site Id: 23832
Affiliation Type: Emergency Contact
Company Name: NYC HOUSING AUTHORITY

BORINQUEN HOUSES (Continued) **U002034218**

Contact Type:	Not reported
Contact Name:	EMERGENCY SERVICE DEPT.
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	999
Phone:	(718) 707-5725
EMail:	Not reported
Fax Number:	Not reported
Modified By:	EXROSSAN
Date Last Modified:	2005-09-21

Tank Info:

Tank Number:	1
Tank ID:	48185
Tank Status:	Closed - Removed
Material Name:	Closed - Removed
Capacity Gallons:	5000
Install Date:	02/01/1975
Date Tank Closed:	07/01/2000
Registered:	True
Tank Location:	Underground
Tank Type:	Steel/carbon steel
Material Code:	0000
Common Name of Substance:	Empty
Tightness Test Method:	21
Date Test:	10/17/1997
Next Test Date:	Not reported
Pipe Model:	Not reported
Modified By:	TRANSLAT
Last Modified:	04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
B00 - Tank External Protection - None
C02 - Pipe Location - Underground/On-ground
F06 - Pipe External Protection - Wrapped
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
I04 - Overfill - Product Level Gauge (A/G)
A00 - Tank Internal Protection - None
D01 - Pipe Type - Steel/Carbon Steel/Iron

SPILLS:

Name:	BORINQUEN PLAZA -NYCHA
Address:	330 BUSHWICK AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9613967 / 2010-10-28
Facility ID:	9613967
Facility Type:	ER
DER Facility ID:	61219
Site ID:	142069
DEC Region:	2

BORINQUEN HOUSES (Continued) **U002034218**

Spill Cause:	Unknown
Spill Class:	B3
SWIS:	2401
Spill Date:	1995-03-14
Investigator:	jkkann
Referred To:	Not reported
Reported to Dept:	1997-02-28
CID:	205
Water Affected:	Not reported
Spill Source:	Institutional, Educational, Gov., Other
Spill Notifier:	DEC
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	1997-02-28
Spill Record Last Update:	2010-10-28
Spiller Name:	SAME
Spiller Company:	NYC HOUSING AUTHORITY
Spiller Address:	250 BROADWAY 16TH FLOOR
Spiller Company:	001
Contact Name:	FRANK OCELLO
DEC Memo:	"12/09/05: This spill transferred from J.Kolleeny to S.Kraszewski. 02/08/07 : DEC lead changed from S. Kraszewski to J. Kann. J.Kann 02/13/09: J.Kann - Discussed the site with Ivy Olberding of PW Grosser. A work plan will be prepared which will include the sampling of 9 existing monitoring wells and analysis for STARS VOCs and SVOCs. 4/28/09: J.Kann - Draft work plan received on 2/25. Comments sent on 3/26. Final Work Plan received on 4/24 and approved on 4/27. 10/06/09: J.Kann - Site visit to observe gw sampling. 1/27/10: J.Kann - ISR submitted on 1/20/10. Spill Closure request. Report needs to be reviewed. 10/28/10: J.Kann - No VOCs or SVOCs were detected in soils. One grounwater well (out of nine) contained minor VOC exceedeances (n, Butylbenzene - 11.9 ppb). A quantitative exposure assessment was performed as per DER-10. According to the report, a complete exposure pathway does not exist. NFA."
Remarks:	"TRC ENVIRONMENTAL INSTALLING WELLS FOR NYCHA FOUND FREE PRODUCT. ***FAXED FROM REGION"

All Materials:

Site ID:	142069
Operable Unit ID:	1045376
Operable Unit:	01
Material ID:	339072
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

AX325
SW
1/4-1/2
0.496 mi.
2621 ft.

11-23 MONTIETH STREET
11-23 MONTIETH STREET
NEW YORK CITY, NY

Site 2 of 2 in cluster AX

NY VCP **S121133137**
N/A

Relative:
Higher

Actual:
37 ft.

VCP NYC:
Project ID: 17CVCP057K
Project Name: 11-23 MONTIETH STREET
Project Address: 11-23 MONTIETH STREET
Borough: BROOKLYN

VCP NYC:
Project ID: 17CVCP057K
File Name: 2016-09-14.RIR
URL: http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/17CVCP057K/2016-09-14.16TMP0410K.RIR Phase II Report.Rev1_RIR v2 PDF_ALC Environmental.pdf

Project ID: 17CVCP057K
File Name: 2017-03-01.RAWP_Draft
URL: http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/17CVCP057K/2017-03-01.16TMP0410K.RAPRAWP.Rev1_RAWP v2 ALC Environmental.pdf

Project ID: 17CVCP057K
File Name: 2017-07-14.Factsheet-1
URL: http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/17CVCP057K/2017-07-13.17CVCP057K.doc.11-23 Montieth Street.Factsheet_1.pdf

Project ID: 17CVCP057K
File Name: 2017-07-14.Translated_Factsheet-1
URL: http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/17CVCP057K/2017-07-13.17CVCP057K.doc.11-23 Montieth Street.Translated_Factsheet-1.pdf

Project ID: 17CVCP057K
File Name: 2017-07-14.Translated_CPS
URL: http://www.nyc.gov/html/oer/downloads/pdf/repository/NYCBCP_Brooklyn/17CVCP057K/2017-07-14.16TMP0410K.11-23_Montieth_St.Translated_CPS.OER.pdf

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326
NNE
1/4-1/2
0.498 mi.
2627 ft.

WASTE MANAGEMENT OF NY; INC. (REG
1301 METROPOLITAN AVENUE
BROOKLYN, NY 11237

NY SWF/LF **S105841926**
N/A

Relative:
Lower

Actual:
10 ft.

SWF/LF:
Flag: INACTIVE
Region Code: 2
Phone Number: 7185335308
Owner Name: Not reported
Owner Type: Not reported
Owner Address: Not reported
Owner Addr2: Not reported
Owner City,St,Zip: Not reported
Owner Email: Not reported

WASTE MANAGEMENT OF NY; INC. (REG (Continued) **S105841926**

Owner Phone:	Not reported
Contact Name:	TARA HEMMER
Contact Address:	Not reported
Contact Addr2:	Not reported
Contact City,St,Zip:	Not reported
Contact Email:	Not reported
Contact Phone:	Not reported
Activity Desc:	z Retired - C&D processing - registration
Activity Number:	[24WD4]
Active:	No
East Coordinate:	590841
North Coordinate:	4507554
Accuracy Code:	Not reported
Regulatory Status:	Not reported
Waste Type:	Not reported
Authorization #:	Not reported
Authorization Date:	Not reported
Expiration Date:	Not reported
Operator Name:	Not reported
Operator Type:	Not reported
Laste Date:	Not reported

327
West
1/2-1
0.633 mi.
3344 ft.

TOP HAT CLEANERS
152 GRAHAM AVE
BROOKLYN, NY 11206

RCRA-CESQG **1004758111**
NY SHWS **NYD986982908**
ICIS
US AIRS
NY MANIFEST

Relative:
Higher

Actual:
27 ft.

RCRA-CESQG:

Date form received by agency:	01/01/2007
Facility name:	TOP HAT CLEANERS
Facility address:	152 GRAHAM AVE BROOKLYN, NY 11206
EPA ID:	NYD986982908
Mailing address:	GRAHAM AVE BROOKLYN, NY 11206
Contact:	REINA DIAZ
Contact address:	GRAHAM AVE BROOKLYN, NY 11206
Contact country:	US
Contact telephone:	718-388-2611
Contact email:	Not reported
EPA Region:	02
Classification:	Conditionally Exempt Small Quantity Generator
Description:	Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

TOP HAT CLEANERS (Continued) **1004758111**

Owner/Operator Summary:
Owner/operator name: REINA DIAZ
Owner/operator address: 37-49 95TH ST
JACKSON HEIGHTS, NY 11372
Owner/operator country: US
Owner/operator telephone: 718-458-5540
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: REINA DIAZ
Owner/operator address: 37-49 95TH ST
JACKSON HEIGHTS, NY 11372
Owner/operator country: US
Owner/operator telephone: 718-458-5540
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2006
Site name: TOP HAT CLEANERS
Classification: Conditionally Exempt Small Quantity Generator

Date form received by agency: 02/06/1997
Site name: TOP HAT CLEANERS
Classification: Conditionally Exempt Small Quantity Generator

Hazardous Waste Summary:

TOP HAT CLEANERS (Continued) **1004758111**

. Waste code: D000
. Waste name: Not Defined

. Waste code: D002
. Waste name: CORROSIVE WASTE

Violation Status: No violations found

SHWS:
Name: TOP HAT CLEANERS
Address: 152 GRAHAM AVE.
City,State,Zip: BROOKLYN, NY 11206
Program: HW
Site Code: 504341
Classification: P
Region: 2
Acres: 0.057
HW Code: 224208
Record Add: 02/03/2015
Record Upd: 10/03/2017
Updated By: DKHARRIN
Site Description: Location: The Site is located at 152 Graham Avenue in the Borough of Brooklyn, Kings County, NY. The site is located in the East Williamsburg section of Brooklyn, New York. The property is bordered by Graham Avenue on the west, by a three-story mixed commercial/residential building to the north, by a four-story mixed commercial/residential building with a one-story annex and a three-story mixed commercial/residential building to the south, and by a four-story residential building to the east. The three-story building located to the southeast of the site also has a dry cleaner on the first floor. Site Features: The 2,500 square foot (0.057 acre) site parcel is occupied by a three-story building built in 1920. The site parcel also contains an open yard area behind (east of) the structure. The first floor is occupied by a dry cleaner and the upper two floors are occupied by residential apartments. Current Zoning and Land Use: The current site use is a dry cleaner (Top Hat Cleaners) on the first floor with residential apartments on the second and third floors. Past Use of the Site: According to the historical records, a dry cleaner has occupied the 152 Graham Ave location since approximately 1960. A Phase I study at the adjacent property (154 Graham Avenue) identified current and prior occupants of the ground floor retail space (pastry shop, shoe retailer and moving company, among others) which were not likely to be a source for chlorinated VOC impacts beneath the site. The report identifies the dry cleaner at 152 Graham Avenue (Top Hat Cleaners) as the most likely source of the contaminants identified in soil vapor. Site Geology and Hydrogeology: The site elevation is approximately 27 feet above mean sea level. Soil lithology consists of two main types of soils. The first soil type was "fill" material that consisted of fine to medium sand to silt with fine to coarse gravel and traces of brick and other miscellaneous debris. The second type was "natural material" composed of fine to coarse sand to silt with fine to coarse gravel and little clay. Groundwater was encountered between 17.5 feet and 22.5 feet below ground surface. Groundwater flow was determined to be in the north to northwest direction.
Env Problem: Nature and Extent of Contamination: Soil and groundwater were analyzed for volatile organic compounds (VOCs). Based upon investigations conducted to date, the primary contaminant of concern

TOP HAT CLEANERS (Continued) **1004758111**

is tetrachloroethene (PCE). Soil - Sampling of soil beneath and behind the site structure was limited due to inability to access the area with a drill rig. Sample results from other media indicate that a source area of higher contaminant concentrations may be present beneath the site structure. Two detections of PCE were observed in soil borings advanced during the Site Characterization. PCE was detected at MW-02 (0.0036 ppm 17 19) and MW-04 (0.0017 ppm 5 6). Both detections are below the NYCRR Part 375 Soil Clean-up Objective of 1.3 ppm for PCE meeting both Unrestricted Use and Protection of Groundwater objectives. Groundwater - PCE was found in groundwater at two of the three boring locations advanced into the water table. Concentrations in contravention of the Class GA Groundwater standard of five (5) ppb were observed at 56 ppb and 10 ppb. Each of these exceedances were located in the public sidewalk immediately off the site parcel. Soil Vapor & Indoor Air A Vapor Intrusion Investigation was performed at the adjacent building to the north (154 Graham Avenue) as part of a real estate transaction. As part of that investigation two sub-slab vapor samples, one basement indoor air sample, and one ambient air sample were collected. At sub-slab location SG2, 43,399 ug/m3 of PCE was detected in soil vapor. (Note that the concentration reported is from a sample that was diluted 600 times. The concentration of PCE in the undiluted sample was 10,171 ug/m3, which exceeded the calibration range of the equipment.) Trichloroethylene (TCE) was detected at 1074 ug/m3 in the diluted sample and at 1504 ug/m3 in the undiluted sub-slab vapor sample. Cis-1,2-dichlorothylene (cis-1,2-DCE) was detected at 2180 ug/m3 in the diluted sample and at 1110 ug/m3 in the undiluted sub-slab vapor sample. Indoor air sampling results identified 44.1 ug/m3 of PCE and 0.43 ug/m3 of TCE in the basement air sample. Special Resources Impacted or Threatened: No special resources were identified on or surrounding the site.

Health Problem: People may contact contaminated soil or groundwater if they dig below the ground surface. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The potential exists for the inhalation of site contaminants due to soil vapor intrusion on-site. Additional investigation of the potential for soil vapor intrusion to occur off-site is needed.

Dump: Not reported
Structure: Not reported
Lagoon: Not reported
Landfill: Not reported
Pond: Not reported
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported
Record Add: Not reported
Record Upd: Not reported
Updated By: Not reported
Own Op: Applicant/Requestor
Sub Type: NNN

TOP HAT CLEANERS (Continued) **1004758111**

Owner Name:	Reina Diaz
Owner Company:	RP
Owner Address:	152 Graham Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11206
Owner Country:	United States of America
Own Op:	On-Site Operator
Sub Type:	E
Owner Name:	Daniel Diaz
Owner Company:	Top Hat Cleaners
Owner Address:	152 Graham Ave.
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11206
Owner Country:	United States of America
Own Op:	Owner
Sub Type:	A
Owner Name:	Not reported
Owner Company:	Belio Urena
Owner Address:	37-49 95th St.
Owner Addr2:	Not reported
Owner City,St,Zip:	Jackson Heights, NY 11372
Owner Country:	United States of America
Own Op:	Applicant/Requestor
Sub Type:	NNN
Owner Name:	Belio Urena
Owner Company:	RP
Owner Address:	152 Graham Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11206
Owner Country:	United States of America
HW Code:	Not reported
Waste Type:	Not reported
Waste Quantity:	Not reported
Waste Code:	Not reported
Crossref ID:	Not reported
Cross Ref Type Code:	Not reported
Cross Ref Type:	Not reported
Record Added Date:	Not reported
Record Updated:	Not reported
Updated By:	Not reported

ICIS:

Enforcement Action ID:	NY000A0000261040096200327
FRS ID:	110004480865
Action Name:	TOP HAT CLEANERS 36047R192400327
Facility Name:	TOP HAT CLEANERS
Facility Address:	152 GRAHAM AVE BROOKLYN, NY 112062602
Enforcement Action Type:	Notice of Violation
Facility County:	KINGS
Program System Acronym:	AIR
Enforcement Action Forum Desc:	Administrative - Informal
EA Type Code:	NOV
Facility SIC Code:	7216
Federal Facility ID:	Not reported
Latitude in Decimal Degrees:	40.70676
Longitude in Decimal Degrees:	-73.94311

TOP HAT CLEANERS (Continued) **1004758111**

Permit Type Desc: Not reported
Program System Acronym: NY0000002610400962
Facility NAICS Code: 812320
Tribal Land Code: Not reported

Enforcement Action ID: NY000A0000261040096200314
FRS ID: 110004480865
Action Name: TOP HAT CLEANERS 36047R192400314
Facility Name: TOP HAT CLEANERS
Facility Address: 152 GRAHAM AVE
BROOKLYN, NY 112062602
Enforcement Action Type: Notice of Violation
Facility County: KINGS
Program System Acronym: AIR
Enforcement Action Forum Desc: Administrative - Informal
EA Type Code: NOV
Facility SIC Code: 7216
Federal Facility ID: Not reported
Latitude in Decimal Degrees: 40.70676
Longitude in Decimal Degrees: -73.94311
Permit Type Desc: Not reported
Program System Acronym: NY0000002610400962
Facility NAICS Code: 812320
Tribal Land Code: Not reported

Enforcement Action ID: NY000A0000261040096200304
FRS ID: 110004480865
Action Name: TOP HAT CLEANERS 36047R192400304
Facility Name: TOP HAT CLEANERS
Facility Address: 152 GRAHAM AVE
BROOKLYN, NY 112062602
Enforcement Action Type: Notice of Violation
Facility County: KINGS
Program System Acronym: AIR
Enforcement Action Forum Desc: Administrative - Informal
EA Type Code: NOV
Facility SIC Code: 7216
Federal Facility ID: Not reported
Latitude in Decimal Degrees: 40.70676
Longitude in Decimal Degrees: -73.94311
Permit Type Desc: Not reported
Program System Acronym: NY0000002610400962
Facility NAICS Code: 812320
Tribal Land Code: Not reported

US AIRS MINOR:
Envid: 1004758111
Region Code: 02
Programmatic ID: AIR NY0000002610400962
Facility Registry ID: 110004480865
D and B Number: Not reported
Primary SIC Code: 7216
NAICS Code: 812320
Default Air Classification Code: MIN
Facility Type of Ownership Code: POF
Air CMS Category Code: Not reported

TOP HAT CLEANERS (Continued) **1004758111**

HPV Status: Not reported

US AIRS MINOR:
Region Code: 02
Programmatic ID: AIR NY0000002610400962
Facility Registry ID: 110004480865
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: MACT Standards (40 CFR Part 63)
Activity Date: 2001-11-14 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610400962
Facility Registry ID: 110004480865
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: MACT Standards (40 CFR Part 63)
Activity Date: 2002-09-17 00:00:00
Activity Status Date: 2002-09-17 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Informal
Activity Status: Achieved

Region Code: 02
Programmatic ID: AIR NY0000002610400962
Facility Registry ID: 110004480865
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: MACT Standards (40 CFR Part 63)
Activity Date: 2005-05-09 00:00:00
Activity Status Date: 2005-05-09 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Informal
Activity Status: Achieved

Region Code: 02
Programmatic ID: AIR NY0000002610400962
Facility Registry ID: 110004480865
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: MACT Standards (40 CFR Part 63)
Activity Date: 2013-08-07 00:00:00
Activity Status Date: 2013-08-07 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Informal
Activity Status: Achieved

US AIRS MINOR:
Envid: 1004758111
Region Code: 02
Programmatic ID: AIR NY0000002610400962
Facility Registry ID: 110004480865

TOP HAT CLEANERS (Continued) **1004758111**

D and B Number: Not reported
Primary SIC Code: 7216
NAICS Code: 812320
Default Air Classification Code: MIN
Facility Type of Ownership Code: POF
Air CMS Category Code: Not reported
HPV Status: Not reported

US AIRS MINOR:
Region Code: 02
Programmatic ID: AIR NY0000002610400962
Facility Registry ID: 110004480865
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: MACT Standards (40 CFR Part 63)
Activity Date: 2001-11-14 00:00:00
Activity Status Date: Not reported
Activity Group: Compliance Monitoring
Activity Type: Inspection/Evaluation
Activity Status: Not reported

Region Code: 02
Programmatic ID: AIR NY0000002610400962
Facility Registry ID: 110004480865
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: MACT Standards (40 CFR Part 63)
Activity Date: 2002-09-17 00:00:00
Activity Status Date: 2002-09-17 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Informal
Activity Status: Achieved

Region Code: 02
Programmatic ID: AIR NY0000002610400962
Facility Registry ID: 110004480865
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: MACT Standards (40 CFR Part 63)
Activity Date: 2005-05-09 00:00:00
Activity Status Date: 2005-05-09 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Informal
Activity Status: Achieved

Region Code: 02
Programmatic ID: AIR NY0000002610400962
Facility Registry ID: 110004480865
Air Operating Status Code: OPR
Default Air Classification Code: MIN
Air Program: MACT Standards (40 CFR Part 63)
Activity Date: 2013-08-07 00:00:00
Activity Status Date: 2013-08-07 00:00:00
Activity Group: Enforcement Action
Activity Type: Administrative - Informal
Activity Status: Achieved

TOP HAT CLEANERS (Continued) **1004758111**

NY MANIFEST:

Country:	USA
EPA ID:	NYD986982908
Facility Status:	Not reported
Location Address 1:	152 GRAHAM AVE
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11206
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYD986982908
Mailing Name:	TOP HAT CLNRS
Mailing Contact:	LOU SANCHEZ
Mailing Address 1:	152 GRAHAM AVENUE
Mailing Address 2:	Not reported
Mailing City:	BROOKLYN
Mailing State:	NY
Mailing Zip:	11206
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	7183382611

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2017
Trans1 State ID:	NJD000564906
Trans2 State ID:	MIK814262374
Generator Ship Date:	01/19/2017
Trans1 Recv Date:	01/19/2017
Trans2 Recv Date:	01/27/2017
TSD Site Recv Date:	01/27/2017
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYD986982908
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	CDX107000000
TSDF ID 2:	Not reported
Manifest Tracking Number:	016192468JJK
Import Indicator:	N
Export Indicator:	Y
Discr Quantity Indicator:	N
Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H020
Waste Code:	Not reported

TOP HAT CLEANERS (Continued) **1004758111**

Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	130
Units:	P - Pounds
Number of Containers:	1
Container Type:	DM - Metal drums, barrels
Handling Method:	R Material recovery of more than 75 percent of the total material.
Specific Gravity:	1
Waste Code:	F002
Waste Code 1_2:	D039
Waste Code 1_3:	Not reported
Waste Code 1_4:	Not reported
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
2 additional NY MANIFEST: record(s) in the EDR Site Report.

328
NNW
1/2-1
0.641 mi.
3386 ft.

EQUITY WORKS **EDR MGP** **1008407885**
MASPETH AND VANDERVORT AVES. **N/A**
BROOKLYN, NY 11211

Relative:
Lower

Actual:
15 ft.

Manufactured Gas Plants:
No additional information available

329
North
1/2-1
0.712 mi.
3758 ft.

BCF OIL REFINING, INC. **SEMS** **1000272490**
360 MASPETH AVENUE **NY SHWS** **NYD068273044**
BROOKLYN, NY 11211 **RCRA NonGen / NLR**
PRP
ECHO
NY MANIFEST

Relative:
Lower

Actual:
12 ft.

SEMS:

Site ID:	0204261
EPA ID:	NYD068273044
Cong District:	12
FIPS Code:	36047
Latitude:	Not reported
Longitude:	Not reported
FF:	N
NPL:	Not on the NPL
Non NPL Status:	Removal Only Site (No Site Assessment Work Needed)

SEMS Detail:

Region:	02
Site ID:	0204261
EPA ID:	NYD068273044
Site Name:	BCF OIL REFINING, INC.
NPL:	N

BCF OIL REFINING, INC. (Continued) **1000272490**

FF:	N
OU:	00
Action Code:	RV
Action Name:	RMVL
SEQ:	2
Start Date:	2001-01-03 05:00:00
Finish Date:	10/26/2001 4:00:00 AM
Qual:	S
Current Action Lead:	EPA Perf
Region:	02
Site ID:	0204261
EPA ID:	NYD068273044
Site Name:	BCF OIL REFINING, INC.
NPL:	N
FF:	N
OU:	00
Action Code:	RV
Action Name:	RMVL
SEQ:	1
Start Date:	2000-05-25 04:00:00
Finish Date:	1/2/2001 5:00:00 AM
Qual:	S
Current Action Lead:	EPA Perf
Region:	02
Site ID:	0204261
EPA ID:	NYD068273044
Site Name:	BCF OIL REFINING, INC.
NPL:	N
FF:	N
OU:	00
Action Code:	RS
Action Name:	RV ASSESS
SEQ:	1
Start Date:	2000-03-27 05:00:00
Finish Date:	3/29/2000 5:00:00 AM
Qual:	Not reported
Current Action Lead:	EPA Perf
Region:	02
Site ID:	0204261
EPA ID:	NYD068273044
Site Name:	BCF OIL REFINING, INC.
NPL:	N
FF:	N
OU:	00
Action Code:	AR
Action Name:	ADMIN REC
SEQ:	1
Start Date:	2000-09-29 04:00:00
Finish Date:	Not reported
Qual:	V
Current Action Lead:	EPA Perf

BCF OIL REFINING, INC. (Continued) **1000272490**

SHWS:
Name: B.C.F. OIL REFINING, INC.
Address: 360-362 MASPETH AVENUE, SOUTHSIDE
City,State,Zip: BROOKLYN, NY 11211
Program: HW
Site Code: 56747
Classification: N
Region: 2
Acres: 1.9
HW Code: 224034
Record Add: 07/14/2004
Record Upd: 04/13/2011
Updated By: JAQUINN
Site Description: The BCF Oil site is located within an urban, industrialized area of East Williamsburg, Brooklyn. Previously existing buildings and above ground storage tanks have been removed, and the property is being used as a Marshall's impound lot. A National Grid facility borders the site on the north, Newtown Creek on the south, a city automobile impound lot on the east and a scrap metal processing facility on the west. The total area is 1.9 acres, of which 0.3 acres is land under water. The property was used as a petroleum distribution facility for many years, starting in the early 1900?s. In 1980, the terminal was modified for use as a waste oil processing facility, and was used for waste oil recycling from 1980 to 1994. Routine sampling detected PCBs in the waste oil, and operations ceased in 1994. The property is zoned M3 (manufacturing/industrial), and it is currently used to store impounded automobiles. The site consists primarily of historic fill placed upon wetlands. Groundwater exists approximately 5 to 10 feet below grade and flows both to the north and south from the site. A remedial investigation of the site has been completed. The site was managed as a single operable unit. See also NYSDEC spill #9406807
Env Problem: Based upon investigations conducted to date, the primary contaminant of concern at the site are those associated with petroleum. Separate phase petroleum contamination has been detected in numerous locations, although mobile product may be more limited. The site was extensively assessed for PCB contamination, but no significant levels of PCBs were detected on site. PCBs were detected in the Newtown Creek sediment, but the sediment contamination appears to be part of a larger problem and not related to releases from the site. A significant threat created by the potential for release of PCB-contaminated oil stored in dilapidated storage tank areas was eliminated by a removal action performed by the USEPA in 2000/2001.
Health Problem: Not reported
Dump: Not reported
Structure: Not reported
Lagoon: Not reported
Landfill: Not reported
Pond: Not reported
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported
Record Add: Not reported
Record Upd: Not reported
Updated By: Not reported
Own Op: Owner
Sub Type: NNN

BCF OIL REFINING, INC. (Continued) **1000272490**

Owner Name: C/O SETH D. FRIEDLAND, ESQ.
Owner Company: NEWTON DEVELOPMENT LLC
Owner Address: 62 WILLIAM STREET
Owner Addr2: THIRD FLOOR
Owner City,St,Zip: NEW YORK, NY 10005
Owner Country: United States of America
Own Op: Document Repository
Sub Type: C01
Owner Name: Gerald Esposito
Owner Company: Brooklyn Community Board 1
Owner Address: Brooklyn Community Board 1
Owner Addr2: 435 Graham Ave
Owner City,St,Zip: Brooklyn, NY 11211
Owner Country: United States of America
Own Op: Document Repository
Sub Type: NNN
Owner Name: Shelly Paus
Owner Company: Brooklyn Public Library, Leonard Branch
Owner Address: Brooklyn Public Library, Leonard Branch
Owner Addr2: 81 Devoe St.
Owner City,St,Zip: Brooklyn, NY 11211
Owner Country: United States of America
HW Code: Not reported
Waste Type: Not reported
Waste Quantity: Not reported
Waste Code: Not reported
Crossref ID: Not reported
Cross Ref Type Code: Not reported
Cross Ref Type: Not reported
Record Added Date: Not reported
Record Updated: Not reported
Updated By: Not reported

RCRA NonGen / NLR:
Date form received by agency: 01/01/2007
Facility name: US ENVIRONMENTAL PROTECTION AGENCY
Facility address: C O BCF OIL REFINING SITE
360-362 MASPETH AVE
BROOKLYN, NY 11211
EPA ID: NYD068273044
Mailing address: WOODBRIDGE AVE 360-3
62 MASPETH AVE
EDISON, NJ 08837
Contact: THOMAS P BUDROE
Contact address: WOODBRIDGE AVE 360-3
EDISON, NJ 08837
Contact country: US
Contact telephone: 732-906-6191
Contact email: Not reported
EPA Region: 02
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: Not reported
Owner/operator address: NOT REQUIRED

BCF OIL REFINING, INC. (Continued) **1000272490**

NOT REQUIRED, WY 99999
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: Not reported
Owner/operator address: NOT REQUIRED
NOT REQUIRED, WY 99999
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2006
Site name: US ENVIRONMENTAL PROTECTION AGENCY
Classification: Not a generator, verified

Date form received by agency: 02/27/2002
Site name: US ENVIRONMENTAL PROTECTION AGENCY
Classification: Large Quantity Generator

Date form received by agency: 11/14/1984
Site name: TANKS-A-LOT INC
Classification: Unverified

Hazardous Waste Summary:

BCF OIL REFINING, INC. (Continued) **1000272490**

. Waste code: D000
. Waste name: Not Defined

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D008
. Waste name: LEAD

. Waste code: F001
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE, TRICHLORETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE AND CHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F002
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2, TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: K049
. Waste name: SLOP OIL EMULSION SOLIDS FROM THE PETROLEUM REFINING INDUSTRY.

. Waste code: K051
. Waste name: API SEPARATOR SLUDGE FROM THE PETROLEUM REFINING INDUSTRY.

. Waste code: K052
. Waste name: TANK BOTTOMS (LEADED) FROM THE PETROLEUM REFINING INDUSTRY.

. Waste code: X001
. Waste name: WASTE OILS

. Waste code: X003
. Waste name: OTHER STATE REGULATED WASTES [i.e., DIESEL FUEL, GASOLINE AND HOME HEATING OIL]

BCF OIL REFINING, INC. (Continued) **1000272490**

Violation Status: No violations found
PRP Name: BCF OIL REFINING INC
BCF OIL REFINING INC
BCF OIL REFINING INC
CARY FIELDS
CARY FIELDS
CARY FIELDS

ECHO:
Envid: 1000272490
Registry ID: 110001595854
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110001595854

NY MANIFEST:
Country: USA
EPA ID: NYD068273044
Facility Status: Not reported
Location Address 1: 360 MASPETH AVE
Code: BP
Location Address 2: Not reported
Total Tanks: Not reported
Location City: BROOKLYN
Location State: NY
Location Zip: 11211
Location Zip 4: Not reported

NY MANIFEST:
EPAID: NYD068273044
Mailing Name: TANKS A LOT INC
Mailing Contact: MICHAEL CALLEIA
Mailing Address 1: 2890 WOODBRIDGE AVE
Mailing Address 2: Not reported
Mailing City: EDISON
Mailing State: NJ
Mailing Zip: 08837
Mailing Zip 4: Not reported
Mailing Country: USA
Mailing Phone: 7183879710

NY MANIFEST:
Document ID: NYG1885869
Manifest Status: Not reported
seq: 01
Year: 2001
Trans1 State ID: 236049ANY
Trans2 State ID: Not reported
Generator Ship Date: 06/04/2001
Trans1 Recv Date: 06/04/2001
Trans2 Recv Date: Not reported
TSD Site Recv Date: 06/05/2001
Part A Recv Date: Not reported
Part B Recv Date: Not reported
Generator EPA ID: NYD068273044
Trans1 EPA ID: PAD008781072
Trans2 EPA ID: Not reported
TSDF ID 1: NYD049836679

BCF OIL REFINING, INC. (Continued) **1000272490**

TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	B007 - OTHER MISCELLANEOUS PCB WASTES
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	20267
Units:	K - Kilograms (2.2 pounds)
Number of Containers:	001
Container Type:	DT - Dump trucks
Handling Method:	L Landfill.
Specific Gravity:	01.00

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

BB330 **KEYSPAN - LNG PLANT GREENPOINT** **NY SHWS** **S104787368**
North **287 MASPETH AVENUE** **NY SWF/LF** **N/A**
1/2-1 **BROOKLYN, NY 11211** **NY LTANKS**
0.862 mi. **NY MOSF**
4551 ft. **Site 1 of 2 in cluster BB** **NY TANKS**
NY VCP
Relative: **NY BROWNFIELDS**
Lower **NY Spills**
NY MANIFEST
Actual:
18 ft.

SHWS:

Name:	K - GREENPOINT MGP - ENERGY CENTER
Address:	287 MASPETH AVENUE
City,State,Zip:	BROOKLYN, NY 11211
Program:	HW
Site Code:	372971
Classification:	Significant threat to the public health or environment - action required.
Region:	2
Acres:	117
HW Code:	224052
Record Add:	11/02/2006
Record Upd:	05/02/2017
Updated By:	GWCROSS
Site Description:	Location: The site is a large parcel located along Newtown Creek at 287 Maspeth Avenue in Brooklyn,NY in Kings County.It is bounded ny Newtown Creek to the east, Maspeth Ave. to the south, Vandevoort Ave. to the west, and Lombardy St. to the north. Site Features: The site

KEYSPAN - LNG PLANT GREENPOINT (Continued) **S104787368**

is currently known as the Greenpoint Energy Center, and houses a major liquefied natural gas storage facility and compressor station, an operations center for KeySpan's distribution and service units, and a warehouse facility. Current zoning and land uses: Surrounding land uses are mixed industrial, residential, and commercial.The nearest residential land use is located adjacent to the northwest corner of the site. Past use of the site: A large MGP and byproduct coking operation operated on the site from 1928 until 1952. Coal tar has been found in subsurface soils, but the full extent of contamination has not yet been established. The surrounding neighborhood also conatins a large petroleum spill, apparently unrelated to the MGP. A VCA to address the northeast corner of the property was listed under V00631. This work was undertaken to allow expansion of the existing liquefied gas facility, and included a relatively small portion of the site. A site-wide RI began in the summer of 2012. The RI will be conducted in 3 phases and is scheduled to conclude in late 2014. Site Geology/hydrogeology: The site is underlain by fill and heterogeneous glacial deposits that include outwash sands with lenticulas silt and till deposits. Bedrock is approximately 200 feet below the ground surface. Groundwater flows northeasterly, toward the Newtown Creek.

Env Problem: According to the USEPA a preliminary assessment (PA) was prepared for the site dated September 24, 1986. The PA was not submitted or reviewed. A draft preliminary site investigaiton report was submitted to the Department in June 2004 for the northeast corner of the site. This report noted MGP DNAPL found across the site in the shallow depths (0-5 feet bgs) This material caused most of the soil samples to fail standards for several SVOCs including naphthalene, benzo(a)pyrene, and benzo(a)anthracene. The area noted was addressed in an IRM, but should be representative of a best-case for the site as a whole as it was in an area which was not actually part of the MGP operations. These exceedances represent a significant threat to the environment, This material is also known to contribute to groundwater contamination and sediment contamination. The site's location, adjacent to Newtown creek, means there is a potential for DNAPL to be leaking into the creek, contaminating sediments and surface water. A RI is currently ongoing. The first phase, begun in July 2012 is focused on the eastern portion of the site, adjacent to Newtown Creek.

Health Problem: Public exposures to wastes in soil and groundwater at the site are unlikely since access to the site is restricted. Potential impacts from soil vapors need to be evaluated. Potential exposures to seepage from the site in the adjacent Newtown Creek are unknown. Eating of fish and shellfish from Newtown Creek is restricted based on fish advisories for the East River, which apply to Newtown Creek as a tributary.

Dump: False
Structure: False
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: False
Record Add: 2006-11-06 14:08:00
Record Upd: 2013-09-20 14:11:00

KEYSPAN - LNG PLANT GREENPOINT (Continued) **S104787368**

Updated By:	ldennist
Own Op:	Owner
Sub Type:	NNN
Owner Name:	N/A
Owner Company:	BROOKLYN UNION GAS COMPANY
Owner Address:	1 METROTECH CENTER
Owner Addr2:	Not reported
Owner City,St,Zip:	BROOKLYN, NY 11201
Owner Country:	United States of America
HW Code:	224052
Waste Type:	NAPHTHALENE
Waste Quantity:	17.00
Waste Code:	Not reported
HW Code:	224052
Waste Type:	PYRENE
Waste Quantity:	83.00
Waste Code:	Not reported
HW Code:	224052
Waste Type:	BENZENE
Waste Quantity:	3.30
Waste Code:	Not reported
HW Code:	224052
Waste Type:	BENZO(A)PYRENE
Waste Quantity:	33.00
Waste Code:	Not reported
HW Code:	224052
Waste Type:	COAL TAR
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	224052
Waste Type:	COAL TAR
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
Crossref ID:	Not reported
Cross Ref Type Code:	Not reported
Cross Ref Type:	Not reported
Record Added Date:	Not reported
Record Updated:	Not reported
Updated By:	Not reported

SWF/LF:

Flag:	ACTIVE
Region Code:	2
Phone Number:	7182705786
Owner Name:	Mattia Auriemma
Owner Type:	Private
Owner Address:	84-24 Ditmas Ave
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11236
Owner Email:	Not reported
Owner Phone:	7182705786
Contact Name:	Mattia Auriemma
Contact Address:	Not reported
Contact Addr2:	Not reported
Contact City,St,Zip:	Not reported
Contact Email:	mattia@nationalgrid.com
Contact Phone:	7182705786

KEYSPAN - LNG PLANT GREENPOINT (Continued) **S104787368**

Activity Desc:	z Retired - C&D processing - registration
Activity Number:	[24W38]
Active:	Yes
East Coordinate:	590245
North Coordinate:	4508023
Accuracy Code:	4.3 - Utilization of Digital Orthophoto Quads
Regulatory Status:	Registration
Waste Type:	Asphalt;Concrete;Brick;Rock;Soil (Clean);Construction & Demolition Debris
Authorization #:	24W38
Authorization Date:	Not reported
Expiration Date:	Not reported
Operator Name:	Larry Caonigro
Operator Type:	Private
Laste Date:	2017-01-03 00:00:00

LTANKS:

Name:	KEYSPAN ENERGY
Address:	287 MASPETH AVENUE
City,State,Zip:	BROOKLYN, NY 11211
Spill Number/Closed Date:	9211562 / 2007-02-06
Facility ID:	9211562
Site ID:	181619
Spill Date:	1993-01-07
Spill Cause:	Tank Test Failure
Spill Source:	Commercial/Industrial
Spill Class:	B3
Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	VSZHUNE
Referred To:	Not reported
Reported to Dept:	1993-01-07
CID:	Not reported
Water Affected:	Not reported
Spill Notifier:	Tank Tester
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	True
Remediation Phase:	0
Date Entered In Computer:	1993-01-08
Spill Record Last Update:	2007-02-06
Spiller Name:	FACILITY MANAGER
Spiller Company:	KEYSPAN ENERGY
Spiller Address:	ONE METROTECH CENTER
Spiller County:	001
Spiller Contact:	Not reported
Spiller Phone:	Not reported
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	14020
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was ROMMEL This spill case was reassigned from DEC (Sigona) to Rommel on 01/07/2004. Per Bart Polozzitti of Keyspan(516-545-5511), major renovations have occurred at the site. The tank may have been removed, he will forward relevant information when gathered. 01/02/07-Zhune got an e-mail from Bart Polozzitti requesting

KEYSPAN - LNG PLANT GREENPOINT (Continued) **S104787368**

Remarks:	additional time to get the information. He said hopefully he will get it by 02/17/07. Bart Polozzitti cell # 646-2350403 01/09/07 Bart sent the information a tightness test report from Tanknology Corp. and a letter is included. The letter state the following: The subject underground storage tank (361A)located at 287 Maspeth Ave. Brooklyn, New York was tightness tested unsuccessfully on january 7, 1993. The other three fuel thanks on the same facility (Nos. 363, 364 &365) were tested tight on the same day. After repairing the vent connections causing the ullage leak above the level of product, the tank was retested on January 25, 1993 and passed. There was no release at any time to the surrounding environment. Spill Closed " "EIR"

All TTF:

Facility ID:	9211562
Spill Number:	9211562
Spill Tank Test:	1541042
Site ID:	181619
Tank Number:	Not reported
Tank Size:	0
Material:	0009
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	00
Test Method 2:	Unknown
Leak Rate:	.00
Gross Fail:	Not reported
Modified By:	Spills
Last Modified Date:	Not reported

All Materials:

Site ID:	181619
Operable Unit ID:	978534
Operable Unit:	01
Material ID:	404952
Material Code:	0009
Material Name:	gasoline
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

Name:	CLOSED-LACKOF RECENT INFO
Address:	287 MASPETH AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9009058 / 2003-03-04
Facility ID:	9009058
Site ID:	118273
Spill Date:	1990-11-16
Spill Cause:	Tank Test Failure
Spill Source:	Commercial/Industrial
Spill Class:	A3

KEYSPAN - LNG PLANT GREENPOINT (Continued) **S104787368**

Cleanup Ceased:	Not reported
SWIS:	2401
Investigator:	ADMIN. CLOSED
Referred To:	Not reported
Reported to Dept:	1990-11-16
CID:	Not reported
Water Affected:	Not reported
Spill Notifier:	Tank Tester
Last Inspection:	Not reported
Recommended Penalty:	False
Meets Standard:	False
UST Involvement:	True
Remediation Phase:	0
Date Entered In Computer:	1990-11-20
Spill Record Last Update:	2003-03-04
Spiller Name:	Not reported
Spiller Company:	BROOKLYN UNION GAS
Spiller Address:	Not reported
Spiller County:	001
Spiller Contact:	Not reported
Spiller Phone:	Not reported
Spiller Extention:	Not reported
DEC Region:	2
DER Facility ID:	102793
DEC Memo:	""
Remarks:	"4K TANK FAILED HORNER EZY CHECK WITH AN UNDETERMINED LEAK RATE, WILL EXCAVATE, ISOLATE,REPAIR & RETEST. CLOSED DUE TO LACK OF ANY RECENT INFO - DOES NOT MEET ANY CLEANUP REQUIREMENTS."

All TTF:

Facility ID:	9009058
Spill Number:	9009058
Spill Tank Test:	1537896
Site ID:	118273
Tank Number:	Not reported
Tank Size:	0
Material:	0009
EPA UST:	Not reported
UST:	Not reported
Cause:	Not reported
Source:	Not reported
Test Method:	00
Test Method 2:	Unknown
Leak Rate:	.00
Gross Fail:	Not reported
Modified By:	Spills
Last Modified Date:	Not reported

All Materials:

Site ID:	118273
Operable Unit ID:	949558
Operable Unit:	01
Material ID:	432836
Material Code:	0009
Material Name:	gasoline
Case No.:	Not reported
Material FA:	Petroleum

KEYSPAN - LNG PLANT GREENPOINT (Continued) **S104787368**

Quantity: -1.00
Units: L
Recovered: .00
Oxygenate: Not reported

MOSF:
Name: GREENPOINT ENERGY FACILITY
Address: 287 MASPETH AVENUE
City,State,Zip: BROOKLYN, NY 11211
Facility ID: 2-2340
Program Type: MOSF
Tank Status: Unregulated/Closed
Expiration Date: Not reported
Dec Region: 2
UTMX: 590195.67868
UTMY: 4507995.25372

TANKS:
Name: NATIONAL GRID GREENPOINT SERVICE CENTER
Address: 287 MASPETH AVENUE
City,State,Zip: BROOKLYN, NY 11211
Facility Id: 2-306398
Region: STATE
DEC Region: 2
Site Status: Active
Program Type: PBS
Expiration Date: 07/14/2022
UTM X: 590235.61396
UTM Y: 4508095.73908

VCP:
Name: GREENPOINT
Address: 287 MASPETH AVENUE
City,State,Zip: BROOKLYN, NY 11211
Program Type: VCP
Site Code: 57149
HW Code: V00631
Site Class: A
SWIS: 2401
Region: 2
Town: New York City
Acres: 2
Date Record Added: 01/16/2003
Date Record Updated: 06/30/2009
Updated By: GWCROSS
Site Description: The Greenpoint Energy Center is located in the Greenpoint section of Brooklyn, New York. The surrounding area is dominated by industrial and commercial uses with a limited residential area northwest of the the site.
Env Problem: The site is impacted by MGP residuals. Coal tar is present at the site. KeySpan has proposed to remediate the most accessible contamination and leave the remaining contamination in place. The proposed remedy is under review by the department.
Health Problem: Public exposures to wastes in soil and groundwater at the site are unlikely since access to the site is restricted. Potential impacts

KEYSPAN - LNG PLANT GREENPOINT (Continued) **S104787368**

from soil vapors need to be evaluated. Potential exposures to seepage from the site in the adjacent Newtown Creek are unknown. Eating of fish and shellfish from Newtown Creek is restricted based on fish advisories for the East River, which apply to Newtown Creek as a tributary.

Dump:	Not reported
Structure:	Not reported
Lagoon:	Not reported
Landfill:	Not reported
Pond:	Not reported
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	Not reported
Dell:	Not reported
Record Add:	Not reported
Record Upd:	Not reported
Updated By:	Not reported
Own Op:	Owner
Sub Type:	ZZZ
Owner Name:	Not reported
Owner Company:	KEYSPAN ENERGY DELIVERY - NY
Owner Address:	ONE METROTECH CENTER
Owner Addr2:	Not reported
Owner City,St,Zip:	BROOKLYN, NY 11201
Owner Country:	United States of America
Own Op:	Applicant/Requestor
Sub Type:	ZZZ
Owner Name:	Not reported
Owner Company:	KEYSPAN ENERGY DELIVERY - NY
Owner Address:	ONE METROTECH CENTER
Owner Addr2:	Not reported
Owner City,St,Zip:	BROOKLYN, NY 11201
Owner Country:	United States of America
HW Code:	Not reported
Waste Type:	Not reported
Waste Quantity:	Not reported
Waste Code:	Not reported
Crossref ID:	9009058
Cross Ref Type Code:	01
Cross Ref Type:	Spill No.
Record Added Date:	2003-01-16 09:45:00
Record Updated:	2003-01-16 09:46:00
Updated By:	brhumphr
Crossref ID:	9305107
Cross Ref Type Code:	01
Cross Ref Type:	Spill No.
Record Added Date:	2003-01-16 09:46:00
Record Updated:	2003-01-16 09:46:00
Updated By:	brhumphr

BROWNFIELDS:

Name:	K - GREENPOINT MGP - ENERGY CENTER
Address:	287 MASPETH AVENUE
City,State,Zip:	BROOKLYN, NY 11211
Program:	BCP
Site Code:	57389
Acres:	119

KEYSPAN - LNG PLANT GREENPOINT (Continued) **S104787368**

HW Code:	C224052
SWIS:	2401
Town:	New York City
Record Added Date:	04/30/2004
Record Updated Date:	12/07/2009
Update By:	MOBARRIE
Site Description:	See Site 224052
Env Problem:	Not reported
Health Problem:	Not reported
Dump:	Not reported
Structure:	Not reported
Lagoon:	Not reported
Landfill:	Not reported
Pond:	Not reported
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	Not reported
Dell:	Not reported
Record Add:	Not reported
Record Upd:	Not reported
Updated By:	Not reported
Own Op:	Owner
Sub Type:	E
Owner Name:	Not reported
Owner Company:	KEYSPAN
Owner Address:	Not reported
Owner Addr2:	Not reported
Owner City,St,Zip:	NY
Owner Country:	Unknown
HW Code:	Not reported
Waste Type:	Not reported
Waste Quantity:	Not reported
Waste Code:	Not reported
Crossref ID:	Not reported
Cross Ref Type Code:	Not reported
Cross Ref Type:	Not reported
Record Added Date:	Not reported
Record Updated:	Not reported
Updated By:	Not reported

SPILLS:

Name:	SUBSTATION
Address:	287 MASPETH AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0310061 / 2003-12-17
Facility ID:	0310061
Facility Type:	ER
DER Facility ID:	102793
Site ID:	94159
DEC Region:	2
Spill Cause:	Other
Spill Class:	C3
SWIS:	2401
Spill Date:	2003-11-26
Investigator:	CESAWYER
Referred To:	Not reported
Reported to Dept:	2003-11-26

KEYSPAN - LNG PLANT GREENPOINT (Continued) **S104787368**

CID:	403
Water Affected:	Not reported
Spill Source:	Unknown
Spill Notifier:	Responsible Party
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	Not reported
Spill Record Last Update:	2003-12-17
Spiller Name:	MIKE RUSSO
Spiller Company:	SUBSTATION
Spiller Address:	287MASPETH AVE.
Spiller Company:	001
Contact Name:	MIKE RUSSO
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was SAWYER 12/11/03 1038 Hrs - Sawyer - Talked to Rob Lowe and Bart Polozotti (516) 545-5511 of Keyspan. They said it was taken care of in house. One of the hazmat personnel, an Eddie will get back to me with disposal information. Closed."
Remarks:	"1-3 gallons spilled out at a substation and all of it was cleaned up"
	Not reported

All Materials:

Site ID:	94159
Operable Unit ID:	877718
Operable Unit:	01
Material ID:	499002
Material Code:	0001A
Material Name:	#2 fuel oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	2.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

Name:	NAT GRID GREEN POINT FACILITY
Address:	287 MASPETH AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	1006581 / 2010-09-17
Facility ID:	1006581
Facility Type:	ER
DER Facility ID:	394939
Site ID:	439941
DEC Region:	2
Spill Cause:	Equipment Failure
Spill Class:	C4
SWIS:	2401
Spill Date:	2010-09-17
Investigator:	smsanges
Referred To:	Not reported
Reported to Dept:	2010-09-17
CID:	Not reported
Water Affected:	Not reported

KEYSPAN - LNG PLANT GREENPOINT (Continued) **S104787368**

Spill Source:	Commercial/Industrial
Spill Notifier:	Other
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2010-09-17
Spill Record Last Update:	2010-09-17
Spiller Name:	Not reported
Spiller Company:	NAT GRID
Spiller Address:	Not reported
Spiller Company:	999
Contact Name:	MARTIN BRUCELLA
DEC Memo:	""
Remarks:	"APPROX 25-30 GALLONS OF GAS MAIN DRIP WATER SPILLED TO SOIL/ASPHALT AND GRAVEL. CLEANUP IN PROGRESS."

All Materials:

Site ID:	439941
Operable Unit ID:	1190570
Operable Unit:	01
Material ID:	2185598
Material Code:	9999
Material Name:	other - GAS MAIN DRIP WATER
Case No.:	Not reported
Material FA:	Other
Quantity:	30.00
Units:	G
Recovered:	Not reported
Oxygenate:	Not reported

Name:	KEYSPAN COMPLEX
Address:	287 MASPETH AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0413650 / 2005-04-04
Facility ID:	0413650
Facility Type:	ER
DER Facility ID:	102793
Site ID:	342804
DEC Region:	2
Spill Cause:	Human Error
Spill Class:	C4
SWIS:	2401
Spill Date:	2005-03-31
Investigator:	SMSANGES
Referred To:	Not reported
Reported to Dept:	2005-03-31
CID:	444
Water Affected:	Not reported
Spill Source:	Institutional, Educational, Gov., Other
Spill Notifier:	Responsible Party
Cleanup Ceased:	Not reported
Cleanup Meets Std:	True
Last Inspection:	Not reported
Recommended Penalty:	Not reported

KEYSPAN - LNG PLANT GREENPOINT (Continued) **S104787368**

UST Trust:	Not reported
Remediation Phase:	0
Date Entered In Computer:	2005-03-31
Spill Record Last Update:	2005-04-04
Spiller Name:	ED MILLER
Spiller Company:	KEYSPAN COMPLEX
Spiller Address:	287 MASBETH AVE
Spiller Company:	001
Contact Name:	ED MILLER
DEC Memo:	"minor spill - closed"
Remarks:	"10 GALLONS OF AGATINE PARTS CLEANER: WHEN MOVING A DRUM WITH A FORK LIFT, THE DRIVER PUT TEH FORK THROUGH THE DRUM: IN PROCESS OF BEING CLEANED UP:"
Name:	BROOKLYN UNION GAS
Address:	287 MASPETH AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	9305107 / 2005-03-28
Facility ID:	9305107
Facility Type:	ER
DER Facility ID:	102793
Site ID:	118274
DEC Region:	2
Spill Cause:	Other
Spill Class:	C3
SWIS:	2401
Spill Date:	1993-07-13
Investigator:	JMROMMEL
Referred To:	Not reported
Reported to Dept:	1993-07-23
CID:	Not reported
Water Affected:	Not reported
Spill Source:	Unknown
Spill Notifier:	Other
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	1993-07-26
Spill Record Last Update:	2005-03-28
Spiller Name:	Not reported
Spiller Company:	BROOKLYN UNION GAS
Spiller Address:	Not reported
Spiller Company:	001
Contact Name:	Not reported
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was ROMMEL / / : CONTAMINATION FOUND. INVESTIGATING. 10/10/95: This is additional information about material spilled from the translation of the old spill file: TANK REMOVAL. 4/12/04-Vought-Spill transferred from Tibbe to Rommel as per Rommel. 3/28/05 - spill closed, refer to 9211562 for tracking. KST"
Remarks:	"TANK REMOVAL - WAIT FOR RESULTS."

All Materials:

Site ID:	118274
Operable Unit ID:	986690

KEYSPAN - LNG PLANT GREENPOINT (Continued) **S104787368**

Operable Unit:	01
Material ID:	567298
Material Code:	0009
Material Name:	gasoline
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	.00
Units:	L
Recovered:	.00
Oxygenate:	Not reported

Name:	ROADWAY
Address:	287 MASPETH AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0506134 / 2005-08-18
Facility ID:	0506134
Facility Type:	ER
DER Facility ID:	102793
Site ID:	351275
DEC Region:	2
Spill Cause:	Other
Spill Class:	Not reported
SWIS:	2401
Spill Date:	2005-08-18
Investigator:	JBVOUGHT
Referred To:	Not reported
Reported to Dept:	2005-08-18
CID:	409
Water Affected:	Not reported
Spill Source:	Unknown
Spill Notifier:	Local Agency
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2005-08-18
Spill Record Last Update:	2005-08-18
Spiller Name:	UNKNOWN
Spiller Company:	Unknown
Spiller Address:	UNKNOWN
Spiller Company:	999
Contact Name:	ED MILLER
DEC Memo:	"8/18/05-Vought-Called Ed and NYFD and NYPD left scene. FDNY put sand around pooled oil. NO responsible parties seen. FDNY diked oil. Pool is near gutter and spill originated from the middle of the street. Pooled oil is 3'x3'. FDNY contact is Captain Horton (Ladder 146) and Captain Villendahl (Engine 206). No sewers or drains affected and DEP was contacted. Vought called Sanitation Operations and they were previously called and are on their way. Spill closed by Vought."
Remarks:	"YOU CAN SEE THE TRAIL OF MOTOR OIL ON THE ROADWAY. CLEAN UP IS NOT IN PROCESS. NOT THEIR RESPOSIBILY. ED CELL #917-731-8543."

All Materials:

Site ID:	351275
Operable Unit ID:	1108800

KEYSPAN - LNG PLANT GREENPOINT (Continued) **S104787368**

Operable Unit:	01
Material ID:	2098772
Material Code:	0015
Material Name:	motor oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	25.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

Name:	DRUM RUN
Address:	287 MASPETH AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0908872 / 2009-12-09
Facility ID:	0908872
Facility Type:	ER
DER Facility ID:	370502
Site ID:	421533
DEC Region:	2
Spill Cause:	Abandoned Drums
Spill Class:	Not reported
SWIS:	2401
Spill Date:	2009-11-07
Investigator:	HRAHMED
Referred To:	Not reported
Reported to Dept:	2009-11-07
CID:	Not reported
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Local Agency
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2009-11-07
Spill Record Last Update:	2009-12-09
Spiller Name:	Not reported
Spiller Company:	UNKNOWN
Spiller Address:	Not reported
Spiller Company:	999
Contact Name:	KAKEEMA
DEC Memo:	"12/09/09-HRAHMED-One Drum of oil was vacuumed up during DRUM RUN on 12/04/09. DEP and Sanitation were notified. This case is closed. "
Remarks:	"1238 THE CALLER ADVISED THE DRUM WAS LABELED BY DEP AND THEY ARE AWAITING DEC TO PICKUP THE DRUM."

All Materials:

Site ID:	421533
Operable Unit ID:	1177420
Operable Unit:	01
Material ID:	2170210
Material Code:	0063A
Material Name:	unknown hazardous material
Case No.:	Not reported

KEYSPAN - LNG PLANT GREENPOINT (Continued) **S104787368**

Material FA:	Hazardous Material
Quantity:	Not reported
Units:	Not reported
Recovered:	Not reported
Oxygenate:	Not reported

Name:	DRUM RUN
Address:	287 MASPETH AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0908424 / 2009-11-06
Facility ID:	0908424
Facility Type:	ER
DER Facility ID:	370033
Site ID:	421024
DEC Region:	2
Spill Cause:	Abandoned Drums
Spill Class:	C4
SWIS:	2401
Spill Date:	2009-10-27
Investigator:	HRAHMED
Referred To:	Not reported
Reported to Dept:	2009-10-27
CID:	Not reported
Water Affected:	Not reported
Spill Source:	Unknown
Spill Notifier:	Other
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2009-10-27
Spill Record Last Update:	2009-11-06
Spiller Name:	Not reported
Spiller Company:	UNKNOWN
Spiller Address:	Not reported
Spiller Company:	999
Contact Name:	JOE SLEEM
DEC Memo:	"11/06/09-HRAHMED-one 50 gal drum was found and emptied during drum run on 11/06/09. DEP and Sanitation were notified. This case is closed. "
Remarks:	"55Gal drum, half full/not leaking"

All Materials:

Site ID:	421024
Operable Unit ID:	1176958
Operable Unit:	01
Material ID:	2169669
Material Code:	0022
Material Name:	waste oil/used oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	22.00
Units:	G
Recovered:	Not reported
Oxygenate:	Not reported

KEYSPAN - LNG PLANT GREENPOINT (Continued) **S104787368**

Name:	SOIL
Address:	287 MASPETH AVE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	1701762 / 2018-08-15
Facility ID:	1701762
Facility Type:	ER
DER Facility ID:	394939
Site ID:	548872
DEC Region:	2
Spill Cause:	Unknown
Spill Class:	Not reported
SWIS:	2401
Spill Date:	2017-05-22
Investigator:	vszhune
Referred To:	Not reported
Reported to Dept:	2017-05-23
CID:	Not reported
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Other
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2017-05-23
Spill Record Last Update:	2018-08-15
Spiller Name:	BRITTANY
Spiller Company:	NATIONAL GRID
Spiller Address:	287 MASPETH AVE
Spiller Company:	999
Contact Name:	BRITTANY
DEC Memo:	"05/23/17-Hiralkumar Patel. 1:17 PM:- spoke with Brittany. they are removing two USTs: one 4,000 gal gasoline and one 1,000 gal diesel UST. during removal of diesel tank, crew noted some odors and upto 100 ppm on PID in soil. the tanks were located on concrete pad at 9 ft bg. crew has removed concrete pad and noted groundwater at bottom of excavation at approx. 10 ft bg. no sheen or product noted on groundwater. D&B will remove tank piping and dispenser islands and will collect endpoint soil and groundwater samples. two new tanks will be installed at the same location. Brittany Gaddy D&B Engineering and Architects, P.C. Ph. (516) 364-9890 Ext. 3439 email: bgaddy@db-eng.com National Grid **site operator** 175 East Old Country Road Hicksville, NY 11801 Attn.: Michael Lauro Environmental Engineering Ph. (516) 545-2562 email: michael.lauro@nationalgrid.com 1:39 PM:- sent letter to Mr. Lauro requiring submission of spill cleanup report by the end of 06/30/17. letter emailed to Mr. Lauro and Brittany. case assigned to DEC Zhune. 8/1/17- Brittany email-As discussed, attached to this email is analytical data, tables and an end point sample location map for NYSDEC review for Spill No. 1701762. Below is a detailed summary of the work that is taking place during the removal and installation of two USTs at the National Grid Greenpoint Energy Center, located at 287 Maspeth Avenue in Brooklyn. National Grid is in the process of removing a 4,000-gallon gasoline UST and a 1,000-gallon diesel UST. Upon removal of the USTs, the Contractor will install 27 concrete filled piles, pour a bottom slab

KEYSPAN - LNG PLANT GREENPOINT (Continued) **S104787368**

and install two new 10,000-gallon USTs in the same location. Existing piping will be removed after the new tanks are in place and the excavation backfilled. End point samples will also be collected for piping excavation as requested by DEC. On May 23, 2017 during excavation related to existing tank removal, some soils were identified that appeared to be impacted due to elevated PID readings and a diesel odor. D&B notified the NYSDEC of a historical petroleum release at the site and a spill case initiated. Soil with elevated PID readings was segregated. Upon removal of the USTs, 14 end point samples were collected and analyzed for the tank excavation. Please see attached for a site plan of the existing fueling station that has been marked with approximate end point sample locations. Table 1, which provides a summary of the removed tanks is attached for reference. Table 2, which provides a summary of PID Readings is also attached for reference. Analytical data related to the endpoint sampling indicates that all VOCs were non detect with the exception of sample GBN which has one exceedance. For sample GBN, benzene was detected at a concentration of 250 ug/kg which exceeds for unrestricted use. This concentration of benzene does not exceed for restricted industrial use. There were several SVOC exceedances for unrestricted and restricted use; however, the Site is known to contain historic fill. Soil borings taken from the area near the USTs show historic fill present up to 12-17 feet below grade.
Additionally, the National Grid Greenpoint Energy Center is a former MGP site and is adjoined by Newtown Creek, a designated Superfund site to the east. As the DEC has requested that the tank closure report include piping excavation endpoint samples, the report cannot be finalized until the new tank installation is complete. However, due to the results of the endpoint sampling below the old USTs, we are requesting NYSDEC review/approval of analytical data provided to close Spill No. 1701762 at this time. A groundwater sample was collected from the base of the former UST excavation. The groundwater sample indicate one VOC (1500 ug/lt Naphathalene)and multiple SVOCs exceedance their repective NYSDEC GWGS. Following the product piping, vent piping and dispensers island removal, five (5) soil sample were collected from those respective areas. All VOC conccentrations were determined to be below their respective SCO’s limits. However, the two (2) samples analyzed via EPA Methos 8270, sample 2 and sample 4, exhibited concentrations of several SVOCs above their respective SCOs. On July 30, 2018 I received an email from John Miller and I spoke with him. The email stated that My name is John Miller and I am the NYSDEC project manager for Greenpoint MGP Site (224052). I was informed recently that National Grid is hoping to close out a spill at the site. My understanding is that any contamination that remains related to the spill would be address under the MPG program. I only just to heard of this issue last week, but after speaking with Grid it sounds like reasonable approach. I wanted to confirm with you whether you agree or not. Do you have any issues or concern?. Based on John Miller’s email that any contamination that remains related to the spill would be addressed under the MPG program # 224052 this spill is closed. Spill closed. "

Remarks: "clean up is pending soil tested positive for materials pbs 2-306398"

All Materials:
Site ID: 548872
Operable Unit ID: 1296965
Operable Unit: 01
Material ID: 2303087

KEYSPAN - LNG PLANT GREENPOINT (Continued) **S104787368**

Material Code:	0064A
Material Name:	unknown material
Case No.:	Not reported
Material FA:	Other
Quantity:	Not reported
Units:	Not reported
Recovered:	Not reported
Oxygenate:	Not reported

Name:	GREENPOINT ENERGY CTR
Address:	287 MASPETH AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0104143 / 2003-02-13
Facility ID:	0104143
Facility Type:	ER
DER Facility ID:	102793
Site ID:	181616
DEC Region:	2
Spill Cause:	Other
Spill Class:	C3
SWIS:	2401
Spill Date:	2001-07-15
Investigator:	MXTIPPLE
Referred To:	Not reported
Reported to Dept:	2001-07-18
CID:	252
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Responsible Party
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2001-07-18
Spill Record Last Update:	2003-02-13
Spiller Name:	MARTIN BRUSCELLA
Spiller Company:	GREENPOINT ENERGY CTR
Spiller Address:	287 MASPETH AVE
Spiller Company:	001
Contact Name:	MARTIN BRUSCELLA
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was TIPPLE REFERRED TO MR. HUSSEIN. 07/18/2001 COPY OF REPORT GIVEN TO RICH GARDINEER"
Remarks:	"LEAD PAINT DEBRIS FROM CONTROLLED DEMOLITION OF LARGE GAS HOLDERS. APPROX 600 POUNDS-HAS BEEN CLEANED UP. NRC #573445"

All Materials:

Site ID:	181616
Operable Unit ID:	842626
Operable Unit:	01
Material ID:	532643
Material Code:	0055A
Material Name:	paint
Case No.:	Not reported
Material FA:	Other

KEYSPAN - LNG PLANT GREENPOINT (Continued) **S104787368**

Quantity:	.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

Name:	KEYSPAN GREENPOINT
Address:	287 MASPETH AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0106270 / 2007-02-06
Facility ID:	0106270
Facility Type:	ER
DER Facility ID:	102793
Site ID:	181617
DEC Region:	2
Spill Cause:	Equipment Failure
Spill Class:	C3
SWIS:	2401
Spill Date:	2001-09-13
Investigator:	VSZHUNE
Referred To:	Not reported
Reported to Dept:	2001-09-13
CID:	252
Water Affected:	Not reported
Spill Source:	Commercial Vehicle
Spill Notifier:	Responsible Party
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2001-09-13
Spill Record Last Update:	2007-02-06
Spiller Name:	CALLER
Spiller Company:	KEYSPAN
Spiller Address:	175 EAST OLD COUNRTY RD
Spiller Company:	001
Contact Name:	SHAWN DAVIS
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was KRIMGOLD 9/13/01. J.Krimgold called Shawn Davis of Keyspan and left message. 7/26/06 - Mike - Bart Palozzotti is now attatched to the number 516-545-5511. Unsure if Shawn Davis left Keyspan. Unable to get a hold of Bart. This spill case was reassigned from Bishop to Zhune 02/10/07 Bart Palozzotti sent informartion. Miller Environmental Group did the cleaned up. I received invoice, Daily job report and the waste manifest. Spill Closed "
Remarks:	"FAULTY VALVE ON TRUCK MAY HAVE CAUSED SPILL-CONTRACTORS ENROTE FOR CLEANUP."

All Materials:

Site ID:	181617
Operable Unit ID:	844615
Operable Unit:	01
Material ID:	531133
Material Code:	0008
Material Name:	diesel
Case No.:	Not reported

KEYSPAN - LNG PLANT GREENPOINT (Continued) **S104787368**

Material FA:	Petroleum
Quantity:	200.00
Units:	G
Recovered:	.00
Oxygenate:	Not reported

Name:	KEY SPAN GREENPOINT OPER
Address:	287 MASPETH AVENUE
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0202908 / 2003-03-13
Facility ID:	0202908
Facility Type:	ER
DER Facility ID:	102793
Site ID:	181618
DEC Region:	2
Spill Cause:	Other
Spill Class:	C4
SWIS:	2401
Spill Date:	2002-06-19
Investigator:	MXTIPPLE
Referred To:	Not reported
Reported to Dept:	2002-06-19
CID:	252
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Responsible Party
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2002-06-19
Spill Record Last Update:	2003-08-08
Spiller Name:	MARTIN BRUSCELLA
Spiller Company:	KEY SPAN GREEN POINT OPER
Spiller Address:	287 MASPETH AVE
Spiller Company:	001
Contact Name:	MARTIN BRUSCELLA
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was TIPPLE 06/27/2002 paperwork to follow. 3/13/03Statement signed by B.J. Polizzotti, Keyspan's hazardous materials supervisor certifies that this spill has been remediated in accordance with applicable regulations."
Remarks:	"UPON BLEEDING PRESSURE VALVE APPROX 1 GALLONS OF MATERIAL SPILLED OUT INTO A PIT. HAS BEEN CLEANED UP BY MILLER ENVIRONMENTAL. NON PCB PER ANLYSIS."

All Materials:

Site ID:	181618
Operable Unit ID:	855906
Operable Unit:	01
Material ID:	520741
Material Code:	0579A
Material Name:	hydrocarbons
Case No.:	Not reported
Material FA:	Petroleum

KEYSPAN - LNG PLANT GREENPOINT (Continued) **S104787368**

Quantity:	1.00
Units:	G
Recovered:	1.00
Oxygenate:	Not reported

Click this hyperlink while viewing on your computer to access
7 additional NY SPILL: record(s) in the EDR Site Report.

NY MANIFEST:

Country:	USA
EPA ID:	NYD006978795
Facility Status:	Not reported
Location Address 1:	287 MASPETH AVE
Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11211
Location Zip 4:	Not reported

NY MANIFEST:

EPAID:	NYD006978795
Mailing Name:	KEYSPAN - LNG PLANT GREENPOINT
Mailing Contact:	AMY DROGALIS
Mailing Address 1:	175 E OLD COUNTRY RD
Mailing Address 2:	Not reported
Mailing City:	HICKSVILLE
Mailing State:	NY
Mailing Zip:	11801
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	9175600908

NY MANIFEST:

Document ID:	Not reported
Manifest Status:	Not reported
seq:	Not reported
Year:	2018
Trans1 State ID:	NJD080631369
Trans2 State ID:	Not reported
Generator Ship Date:	06/12/2018
Trans1 Recv Date:	06/12/2018
Trans2 Recv Date:	Not reported
TSD Site Recv Date:	06/13/2018
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYD006978795
Trans1 EPA ID:	Not reported
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD980536593
TSDF ID 2:	Not reported
Manifest Tracking Number:	000517916VES
Import Indicator:	N
Export Indicator:	N
Discr Quantity Indicator:	N

KEYSPAN - LNG PLANT GREENPOINT (Continued) **S104787368**

Discr Type Indicator:	N
Discr Residue Indicator:	N
Discr Partial Reject Indicator:	N
Discr Full Reject Indicator:	N
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	H141
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	395
Units:	K - Kilograms (2.2 pounds)
Number of Containers:	5
Container Type:	DM - Metal drums, barrels
Handling Method:	B Incineration, heat recovery, burning.
Specific Gravity:	1
Waste Code:	Not reported
Waste Code 1_2:	Not reported
Waste Code 1_3:	Not reported
Waste Code 1_4:	B007
Waste Code 1_5:	Not reported
Waste Code 1_6:	Not reported

Click this hyperlink while viewing on your computer to access
160 additional NY MANIFEST: record(s) in the EDR Site Report.

BB331 **GREENPOINT** **EDR MGP** **1008407892**
North **287 MASPETH AVENUE** **N/A**
1/2-1 **BROOKLYN, NY 11211**
0.862 mi.
4551 ft. **Site 2 of 2 in cluster BB**

Relative: **Lower**

Actual: **18 ft.**

Manufactured Gas Plants:
No additional information available

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332 **FORMER KLINK COSMO CLEANERS** **NY SHWS** **S109416412**
NNW **364 RICHARDSON STREET** **N/A**
1/2-1 **BROOKLYN, NY 11222**
0.911 mi.
4809 ft.

Relative: **Higher**

Actual: **38 ft.**

SHWS:

Name:	FORMER KLINK COSMO CLEANERS
Address:	364 RICHARDSON STREET
City,State,Zip:	BROOKLYN, NY 11222
Program:	HW
Site Code:	405851
Classification:	Significant threat to the public health or environment - action required.

FORMER KLINK COSMO CLEANERS (Continued) **S109416412**

Region: 2
Acres: 1.08
HW Code: 224130
Record Add: 10/28/2008
Record Upd: 04/11/2019
Updated By: SXDEWES
Site Description: Location The 1.08-acre site is located in the Greenpoint/East Williamsburg industrial section of Brooklyn, NY. The site is located on the southwest corner of the intersection of Vandervoort Avenue and Richardson Street. Please refer to Figures 1 2. Site Features The site is completely covered by a one-story brick building. Numerous other commercial and industrial properties are located to the north, south, and west of the site. The Greenpoint Little League fields and a National Grid energy facility are east of the site across Vandervoort Avenue. A small residential area is located 1-2 blocks north of the site. An eastbound on-ramp to the Brooklyn-Queens Expressway (I-278) is located 4 blocks to the north. Current Zoning and Land Use The site is zoned for (M1) manufacturing. Per NYC Planning, M1 districts typically include light industrial uses, such as woodworking shops, repair shops, and wholesale service and storage facilities. The site is currently used for sheet metal fabrication and offices. Past Use of the Site The Department began a Site Characterization in this area in2007 as part of a plume trackdown investigation (Meeker Avenue Plume Trackdown, Site ID No. 224121). This property was identified as a potential source of contamination based on its past use. Klink Cosmo Cleaners operated as a commercial dry cleaner from the 1950's to the mid 1990's. During that time, hazardous waste (spent halogenated solvents) was generated under EPA ID no. NYD000824334. Site Geology and Hydrogeology The site is underlain by urban fill unit (0.5-8 feet thick), a sand unit (approximately 100 feet thick) with varying textural features, and the Raritan (clay) Formation approximately 110 feet below ground surface (bgs). Groundwater is present approximately 35 feet bgs and flows north to northeast toward Newtown Creek.
Env Problem: Soil and groundwater were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), metals, polychlorinated biphenyls (PCBs), and pesticides. Based upon investigations conducted to date, the primary contaminants of concern include VOCs and metals. Nature and Extent of Contamination: Soil The VOC source area was identified in the northeast corner of the current building at depths from 1 - 35 feet below ground surface (bgs). Tetrachloroethylene (PCE) was detected in soils on-site at concentrations up to 273 parts per million or ppm, exceeding the soil cleanup objective (SCO) for commercial use (150 ppm) and for the protection of groundwater (1.3 ppm). Trichloroethene (TCE) was detected in two on-site samples which slightly exceed the protection of groundwater SCO (0.47 ppm). PCE contaminated soil exceeding the protection of groundwater SCO extends off-site approximately ten feet to the north and east below the adjacent sidewalks of Vandervoort Avenue and Richardson Street. Metals contamination associated with urban fill was detected in shallow soil on-site. For example, lead was detected up to 2,680 ppm (exceeding the commercial SCO of 1,000 ppm) and arsenic up to 38.7 ppm (exceeding the commercial SCO of 16 ppm). The data does not indicate any off-site metal impacts in soil related to this site. Groundwater Based on the investigations conducted to date, the primary contaminants of concern detected in groundwater include PCE and trichloroethene (TCE). PCE has been found

FORMER KLINK COSMO CLEANERS (Continued) **S109416412**

in shallow groundwater at concentrations up to 46,000 parts per billion or ppb (exceeding the groundwater standard of 5 ppb). PCE has also been found in deep groundwater (atop the Raritan clay) up to 4,500 ppb. TCE, a daughter product of PCE, was detected up to 2,100 ppb (exceeding the groundwater standard of 5 ppb). The groundwater plume extends north and east from the site to at least Lombardy street where it becomes co-mingled with contamination originating from other sites. Soil Vapor PCE has been found in soil vapor beneath the site at concentrations up to 2,090,000 micrograms per cubic meter, or ug/m^3. TCE has been found at concentrations up to 7,380 ug/m^3. Soil vapor intrusion sampling has been completed at twenty off-site structures. Actions described in Section 6.2 were needed to address potential exposure at twelve structures.

Health Problem:	Direct contact with contaminants in the soil is unlikely because the site is covered by a building. Contaminated groundwater at the site is not used for drinking or other purposes and the site is served by a public water supply that obtains water from a different source not affected by this contamination. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Sub?slab depressurization systems (SSDSs) have been installed in twelve off?site residential buildings to prevent the indoor air quality from being affected by the contamination in soil vapor in the area. SSDSs remain available to homeowners in the vicinity of the site who previously rejected the State s offer for a system. The on-site building does not have an SSDS; however, the potential for soil vapor intrusion is being addressed by the soil vapor extraction/air sparge system which is being constructed and will be operated on-site.
Dump:	False
Structure:	True
Lagoon:	False
Landfill:	False
Pond:	False
Disp Start:	Not reported
Disp Term:	Not reported
Lat/Long:	Not reported
Dell:	Not reported
Record Add:	2008-10-28 12:21:00
Record Upd:	2016-03-02 09:54:00
Updated By:	DKHARRIN
Own Op:	Document Repository
Sub Type:	C01
Owner Name:	Not reported
Owner Company:	Brooklyn Community Board #1
Owner Address:	435 Graham Avenue
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11222
Owner Country:	United States of America
Own Op:	On-Site Operator
Sub Type:	08
Owner Name:	Not reported
Owner Company:	AWL Industries
Owner Address:	364 Richardson Street
Owner Addr2:	Not reported

FORMER KLINK COSMO CLEANERS (Continued) **S109416412**

Owner City,St,Zip:	Brooklyn, NY 11222
Owner Country:	United States of America
Own Op:	Owner
Sub Type:	01
Owner Name:	PAVLOVICH & COMPANY
Owner Company:	PAVLOVICH & COMPANY
Owner Address:	460 MORGAN AVENUE
Owner Addr2:	Not reported
Owner City,St,Zip:	BROOKLYN, NY 11222-5706
Owner Country:	United States of America
Own Op:	Document Repository
Sub Type:	C04
Owner Name:	David Camara
Owner Company:	Brooklyn Public Library - Leonard Branch
Owner Address:	81 Devoe Street
Owner Addr2:	Not reported
Owner City,St,Zip:	Brooklyn, NY 11211
Owner Country:	United States of America
HW Code:	224130
Waste Type:	TETRACHLOROETHYLENE (PCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	224130
Waste Type:	trichloroethene (TCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	224130
Waste Type:	arsenic
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	224130
Waste Type:	lead
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
HW Code:	224130
Waste Type:	tetrachloroethene (PCE)
Waste Quantity:	UNKNOWN
Waste Code:	Not reported
Crossref ID:	224129
Cross Ref Type Code:	02
Cross Ref Type:	HW Site ID
Record Added Date:	2008-10-31 14:34:00
Record Updated:	2008-10-31 14:34:00
Updated By:	MOBARRIE
Crossref ID:	224131
Cross Ref Type Code:	02
Cross Ref Type:	HW Site ID
Record Added Date:	2008-10-31 14:41:00
Record Updated:	2008-10-31 14:41:00
Updated By:	MOBARRIE
Crossref ID:	224132
Cross Ref Type Code:	02
Cross Ref Type:	HW Site ID
Record Added Date:	2008-10-31 14:41:00
Record Updated:	2008-10-31 14:41:00
Updated By:	MOBARRIE
Crossref ID:	224121

FORMER KLINK COSMO CLEANERS (Continued) **S109416412**

Cross Ref Type Code: 02
Cross Ref Type: HW Site ID
Record Added Date: 2009-08-26 16:51:00
Record Updated: 2009-08-26 16:51:00
Updated By: dkharrin

333
NNW
1/2-1
0.968 mi.
5113 ft.

Relative:
Higher

Actual:
35 ft.

GOODMAN BROTHERS STEEL DRUM CO INC
18 DIVISION PLACE
BROOKLYN, NY 11222

RCRA-CESQG **1000190383**
NY SHWS **NYD047683776**
NY UST
NY CBS
NY CBS AST
NY Spills
RAATS
ICIS
FINDS
ECHO
NY AIRS
NJ MANIFEST
NY MANIFEST

RCRA-CESQG:
Date form received by agency: 01/01/2007
Facility name: GOODMAN BROTHERS STEEL DRUM CO INC
Facility address: 18 DIVISION PLACE
BROOKLYN, NY 11222
EPA ID: NYD047683776
Mailing address: DIVISION PL
BROOKLYN, NY 11222
Contact: SIMON GOODMAN
Contact address: DIVISION PL
BROOKLYN, NY 11222
Contact country: US
Contact telephone: 718-782-3056
Contact email: Not reported
EPA Region: 02
Land type: Facility is not located on Indian land. Additional information is not known.
Classification: Conditionally Exempt Small Quantity Generator
Description: Handler: generates 100 kg or less of hazardous waste per calendar month, and accumulates 1000 kg or less of hazardous waste at any time; or generates 1 kg or less of acutely hazardous waste per calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates at any time: 1 kg or less of acutely hazardous waste; or 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste

Owner/Operator Summary:
Owner/operator name: GOODMAN BROS STEEL DRUM CO INC
Owner/operator address: NOT REQUIRED
NOT REQUIRED, WY 99999
Owner/operator country: US

GOODMAN BROTHERS STEEL DRUM CO INC (Continued) **1000190383**

Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: GOODMAN BROS STEEL DRUM CO INC
Owner/operator address: NOT REQUIRED
NOT REQUIRED, WY 99999
Owner/operator country: US
Owner/operator telephone: 212-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/01/2006
Site name: GOODMAN BROTHERS STEEL DRUM CO INC
Classification: Small Quantity Generator

Date form received by agency: 11/21/2002
Site name: GOODMAN BROTHERS STEEL DRUM CO INC
Classification: Large Quantity Generator

Date form received by agency: 01/01/2001
Site name: GOODMAN BROS STEEL DRUM CO INC
Classification: Large Quantity Generator

Date form received by agency: 02/28/1998
Site name: GOODMAN BROTHERS STEEL DRUM CO INC
Classification: Large Quantity Generator

GOODMAN BROTHERS STEEL DRUM CO INC (Continued) **1000190383**

Date form received by agency: 03/11/1996
Site name: GOODMAN BROS. STEEL DRUM CO. INC.
Classification: Large Quantity Generator

Date form received by agency: 03/25/1994
Site name: GOODMAN BROS STEEL DRUM CO INC
Classification: Large Quantity Generator

Date form received by agency: 08/18/1980
Site name: GOODMAN BROS STEEL DRUM CO INC
Classification: Large Quantity Generator

Hazardous Waste Summary:

. Waste code: D000
. Waste name: Not Defined

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: F017
. Waste name: Not Defined

. Waste code: U220
. Waste name: BENZENE, METHYL- (OR) TOLUENE

. Waste code: U239
. Waste name: BENZENE, DIMETHYL- (I,T) (OR) XYLENE (I)

Facility Has Received Notices of Violations:
Regulation violated: SR - 372.2a&b;373-1.1d&e;373-3.3b&g
Area of violation: Generators - General
Date violation determined: 01/03/2002
Date achieved compliance: 01/26/2005
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 06/18/2003
Enf. disposition status: Dropped
Enf. disp. status date: 01/26/2005
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 17500
Paid penalty amount: 8750

Regulation violated: SR - 372.2a&b;373-1.1d&e;373-3.3b&g
Area of violation: Generators - General
Date violation determined: 01/03/2002
Date achieved compliance: 01/26/2005
Violation lead agency: State
Enforcement action: INITIAL 3008(A) COMPLIANCE
Enforcement action date: 03/21/2002
Enf. disposition status: Dropped
Enf. disp. status date: 01/26/2005
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported

GOODMAN BROTHERS STEEL DRUM CO INC (Continued) **1000190383**

Paid penalty amount: Not reported

Regulation violated: SR - 372
Area of violation: Generators - General
Date violation determined: 01/29/1999
Date achieved compliance: 04/01/1999
Violation lead agency: EPA
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 03/01/1999
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: EPA
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 06/03/1987
Date achieved compliance: 12/15/1987
Violation lead agency: State
Enforcement action: FINAL 3008(A) COMPLIANCE ORDER
Enforcement action date: 09/22/1987
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 6500
Paid penalty amount: 6500

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 09/02/1982
Date achieved compliance: 12/06/1983
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 01/26/2005
Evaluation: NOT A SIGNIFICANT NON-COMPLIER
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 03/15/2002
Evaluation: SIGNIFICANT NON-COMPLIER
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

GOODMAN BROTHERS STEEL DRUM CO INC (Continued) **1000190383**

Evaluation date: 01/03/2002
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

Evaluation date: 01/03/2002
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 01/26/2005
Evaluation lead agency: State

Evaluation date: 12/10/1998
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 04/01/1999
Evaluation lead agency: EPA

Evaluation date: 08/16/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

Evaluation date: 06/03/1987
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 12/15/1987
Evaluation lead agency: State

Evaluation date: 09/02/1982
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 12/06/1983
Evaluation lead agency: State

SHWS:
Name: FORMER GOODMAN BROTHERS STEEL DRUM CO.
Address: 18 DIVISION PLACE
City,State,Zip: BROOKLYN, NY 11222
Program: HW
Site Code: 505634
Classification: Significant threat to the public health or environment - action required.
Region: 2
Acres: 0.67
HW Code: 224211
Record Add: 03/18/2015
Record Upd: 04/10/2018
Updated By: SXDEWES
Site Description: Location: The 0.67 acre site is located in the Greenpoint/East Williamsburg Industrial Area section of Kings County (Borough of Brooklyn, New York City). The site is located on the south side of Division Place between Kingsland and Debevoise Avenues. Site Features: The site is mostly covered with one-story buildings, with a storage yard located on the south side along Richardson Street. Current Zoning and Land Use: The site is zoned for manufacturing. The site is currently used by a furniture manufacturing company. Numerous

GOODMAN BROTHERS STEEL DRUM CO INC (Continued) **1000190383**

commercial, industrial, and residential properties surround the site. Past Use of the Site: Goodman Brothers began operations in 1909 as a re-conditioner and recycler of used steel drums for re-use or disposal. The Department's initial involvement with the facility was a RCRA inspection conducted in September 1982, as the company was a large quantity generator of hazardous waste above a sole-source aquifer. The company went out of business in June 2002. During the last 20 years of its operation, Goodman Brothers entered into one consent order with the USEPA (1983), and two consent orders with the Department (1987 and 2003), and agreed to pay penalties in the overall amount of $28,000 for numerous violations. In February 2003 a limited subsurface investigation was performed at the site; a total of nine soil borings were installed with soil samples collected from all nine borings and groundwater samples collected at four locations. The Department began a Site Characterization in this area during the Summer of 2011 as part of a plume trackdown investigation (Meeker Avenue Plume Trackdown, DEC Site ID No. 224121). Site Geology and Hydrogeology: The site is underlain by a sand/silty sand unit (~15-35' thick), a discontinuous sand/gravel unit within the sand/silty sand unit (~5' thick), a discontinuous clayey silt unit within the sand/silty sand unit (~5' thick), and a sand unit below. Groundwater is approximately 15-20' below grade in the immediate vicinity of the site, and appears to be a perched unit. Groundwater below the site flows toward the east in the direction of Newtown Creek (~3,600' away).

Env Problem: Nature and Extent of Contamination: - Groundwater The primary contaminants of concern at the site are tetrachloroethene (PCE) and its daughter compounds (trichloroethene, cis-1,2 dichloroethene and vinyl chloride); 1,1,1, trichloroethane (1,1,1 TCA); BTEX compounds (benzene, toluene, ethylbenzene, and xylene); and PCBs. These compounds have been found well above their respective Part 703.5 Class GA standards (shown in parenthesis). PCE has been found up to 30,000 ppb (5 ppb); trichloroethene (TCE) up to 2,800 ppb (5 ppb); cis-1,2 dichloroethene (DCE) up to 140,000 ppb (5 ppb); vinyl chloride up to 2,300 ppb (2 ppb); 1,1,1-TCA up to 15,000 ppb (5 ppb); benzene up to 2,400 ppb (1 ppb); toluene up to 54,000 ppb (5 ppb); ethylbenzene up to 2,400 ppb (5 ppb); total xylenes up to 12,100 ppb (5 ppb); and PCBs (Arochlor-1260) up to 940 ppb (0.09 ppb). All the contaminants listed above (except PCBs) have migrated off-site. - Soil Numerous compounds have been found in excess of their unrestricted use soil cleanup objective (shown in parenthesis). PCE has been found up to 260 ppm (1.3 ppm); TCE up to 140 ppm (0.47 ppm); DCE up to 70 ppm (0.25 ppm); 1,1,1-TCA up to 22 ppm (0.68 ppm); benzene up to 13 ppm (0.06 ppm); toluene up to 520 ppm (0.7 ppm); ethylbenzene up to 88 ppm (1 ppm); total xylenes up to 368 ppm (0.26 ppm); PCBs up to 80 ppm (0.1 ppm); lead up to 1,300 ppm (63 ppm); and mercury up to 240 ppm (0.18 ppm). Significant Threat: The site poses a significant environmental threat due to ongoing releases of PCE (and its breakdown products), BTEX compounds, and PCBs from source areas into soil and groundwater.

Health Problem: Direct contact with contaminants in the soil is unlikely because the majority of the site is covered with buildings and pavement. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This

GOODMAN BROTHERS STEEL DRUM CO INC (Continued) **1000190383**

process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. The potential for soil vapor intrusion in on-site and off-site structures exists and should be evaluated and may need to be evaluated for off-site structures.

Dump: False
Structure: True
Lagoon: False
Landfill: False
Pond: False
Disp Start: Not reported
Disp Term: Not reported
Lat/Long: Not reported
Dell: Not reported
Record Add: 2015-03-30 09:44:00
Record Upd: 2015-03-30 09:44:00
Updated By: DKHARRIN
Own Op: On-Site Operator
Sub Type: E
Owner Name: Not reported
Owner Company: Art Furniture Co.
Owner Address: 275 Richardson Street
Owner Addr2: Not reported
Owner City,St,Zip: Brooklyn, NY 11222-5641
Owner Country: United States of America
Own Op: Document Repository
Sub Type: C04
Owner Name: David Camara
Owner Company: Brooklyn Public Library - Leonard Branch
Owner Address: 81 Devoe Street
Owner Addr2: Not reported
Owner City,St,Zip: Brooklyn, NY 11211
Owner Country: United States of America
Own Op: Owner
Sub Type: E
Owner Name: Kris Rutkowski
Owner Company: King Tower Properties, Inc.
Owner Address: 18 Division Place
Owner Addr2: Not reported
Owner City,St,Zip: Brooklyn, NY 11222
Owner Country: United States of America
Own Op: Owner
Sub Type: E
Owner Name: Hieronima Rutkowska
Owner Company: Richland Properties, Inc.
Owner Address: 275 Richardson Street
Owner Addr2: Not reported
Owner City,St,Zip: Brooklyn, NY 11222-5641
Owner Country: United States of America
HW Code: 224211
Waste Type: tetrachloroethene (PCE)
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: 224211
Waste Type: PCB aroclor 1260
Waste Quantity: UNKNOWN
Waste Code: Not reported

GOODMAN BROTHERS STEEL DRUM CO INC (Continued) **1000190383**

HW Code: 224211
Waste Type: 1,1,1-trichloroethane
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: 224211
Waste Type: toluene
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: 224211
Waste Type: lead
Waste Quantity: UNKNOWN
Waste Code: Not reported
HW Code: 224211
Waste Type: xylene (mixed)
Waste Quantity: UNKNOWN
Waste Code: Not reported
Crossref ID: NYD047699061
Cross Ref Type Code: 06
Cross Ref Type: RCRA EPA ID No.
Record Added Date: 2015-08-25 14:25:00
Record Updated: 2015-08-25 14:25:00
Updated By: RXSCHICK
Crossref ID: NYD047683776
Cross Ref Type Code: 06
Cross Ref Type: RCRA EPA ID No.
Record Added Date: 2015-03-30 09:45:00
Record Updated: 2015-03-30 09:45:00
Updated By: DKHARRIN

UST:
Name: GOODMAN BROS STEEL DRUM
Address: 18 DIVISION PLACE
City,State,Zip: BROOKLYN, NY 11222
Id/Status: 2-017620 / Unregulated/Closed
Program Type: PBS
Region: STATE
DEC Region: 2
Expiration Date: N/A
UTM X: 589559.19127
UTM Y: 4508238.80696
Site Type: Other

Affiliation Records:
Site Id: 150
Affiliation Type: Facility Owner
Company Name: GOODMAN BROTHERS STEEL DRUM CO.
Contact Type: Not reported
Contact Name: Not reported
Address1: 18 DIVISION PLACE
Address2: Not reported
City: BROOKLYN
State: NY
Zip Code: 11222
Country Code: 001
Phone: (718) 782-3056
EMail: Not reported
Fax Number: Not reported

GOODMAN BROTHERS STEEL DRUM CO INC (Continued) **1000190383**

Modified By:	TRANSLAT
Date Last Modified:	2004-03-04
Site Id:	150
Affiliation Type:	Mail Contact
Company Name:	GOODMAN BROTHERS STEEL DRUM CO.
Contact Type:	Not reported
Contact Name:	Not reported
Address1:	18 DIVISION PLACE
Address2:	Not reported
City:	BROOKLYN
State:	NY
Zip Code:	11222
Country Code:	001
Phone:	(718) 782-3056
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04
Site Id:	150
Affiliation Type:	Facility Operator
Company Name:	GOODMAN BROTHERS STEEL DRUM CO.
Contact Type:	Not reported
Contact Name:	IRVING GOODMAN
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 782-3056
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04
Site Id:	150
Affiliation Type:	Emergency Contact
Company Name:	GOODMAN BROTHERS STEEL DRUM CO.
Contact Type:	Not reported
Contact Name:	MORTMAN
Address1:	Not reported
Address2:	Not reported
City:	Not reported
State:	NN
Zip Code:	Not reported
Country Code:	001
Phone:	(718) 494-7704
EMail:	Not reported
Fax Number:	Not reported
Modified By:	TRANSLAT
Date Last Modified:	2004-03-04

Tank Info:

Tank Number:	001

GOODMAN BROTHERS STEEL DRUM CO INC (Continued) **1000190383**

Tank ID: 27072
Tank Status: Closed - In Place
Material Name: Closed - In Place
Capacity Gallons: 500
Install Date: 01/01/1997
Date Tank Closed: 01/01/1997
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0001
Common Name of Substance: #2 Fuel Oil (On-Site Consumption)

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
H00 - Tank Leak Detection - None
I00 - Overfill - None
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
A00 - Tank Internal Protection - None

Tank Number: 002
Tank ID: 27073
Tank Status: In Service
Material Name: In Service
Capacity Gallons: 1100
Install Date: Not reported
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0001
Common Name of Substance: #2 Fuel Oil (On-Site Consumption)

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

L09 - Piping Leak Detection - Exempt Suction Piping
H00 - Tank Leak Detection - None
I00 - Overfill - None
J02 - Dispenser - Suction Dispenser
G00 - Tank Secondary Containment - None
C00 - Pipe Location - No Piping

GOODMAN BROTHERS STEEL DRUM CO INC (Continued) **1000190383**

D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
B00 - Tank External Protection - None
A00 - Tank Internal Protection - None

Tank Number: 003
Tank ID: 27074
Tank Status: In Service
Material Name: In Service
Capacity Gallons: 1100
Install Date: Not reported
Date Tank Closed: Not reported
Registered: True
Tank Location: Underground
Tank Type: Steel/carbon steel
Material Code: 0001
Common Name of Substance: #2 Fuel Oil (On-Site Consumption)

Tightness Test Method: NN
Date Test: Not reported
Next Test Date: Not reported
Pipe Model: Not reported
Modified By: TRANSLAT
Last Modified: 04/14/2017

Equipment Records:

H00 - Tank Leak Detection - None
I00 - Overfill - None
L09 - Piping Leak Detection - Exempt Suction Piping
G00 - Tank Secondary Containment - None
J02 - Dispenser - Suction Dispenser
B00 - Tank External Protection - None
C00 - Pipe Location - No Piping
D02 - Pipe Type - Galvanized Steel
F00 - Pipe External Protection - None
A00 - Tank Internal Protection - None

CBS:

Name: GOODMAN BROTHERS STEEL DRUM
Address: 18 DIVISION PLACE
City,State,Zip: BROOKLYN, NY 11222
CBS Number: 2-000008
Program Type: CBS
Facility Status: Unregulated/Closed
Expiration Date: Not reported
Dec Region: 2
UTMX: 589518.57883
UTMY: 4508231.19860

CBS AST:

CBS Number: 2-000008
ICS Number: 2-125161
PBS Number: Not reported
MOSF Number: Not reported
SPDES Number: Not reported
Facility Status: IN SERVICE

GOODMAN BROTHERS STEEL DRUM CO INC (Continued) **1000190383**

Facility Type:	I
Telephone:	(718) 782-3038
Facility Town:	NEW YORK CITY
Region:	STATE
Expiration Date:	02/03/2003
Total Capacity of All Active Tanks(gal):	3000
Operator:	RAY KRUZINSKI/FRANK CATALDI
Emergency Contact:	IRVING GOODMAN
Emergency Phone:	(212) 737-7181
Owner Name:	GOODMAN BROTHERS STEEL DRUM CO.
Owner Address:	18 DIVISION PL.
Owner City,St,Zip:	BROOKLYN, NY 11222
Owner Telephone:	(718) 782-3056
Owner Type:	Corporate/Commercial
Owner Sub Type:	Not reported
Mail Name:	GOODMAN BROTHERS STEEL DRUM CO.
Mail Contact Addr:	18 DIVISION PL.
Mail Contact Addr2:	Not reported
Mail Contact Contact:	IRVING GOODMAN
Mail Contact City,St,Zip:	BROOKLYN, NY 11222
Mail Phone:	(718) 782-3056

Tank Id:	00001-A
CAS Number:	7647010
Federal ID:	Not reported
Tank Status:	In Service
Install Date:	02/00
Tank Closed:	Not reported
Capacity (Gal):	3000
Chemical:	Hydrochloric acid
Tank Location:	Indoors, Belowground
Tank Type:	Fiberglass reinforced plastic [FRP]
Total Tanks:	1
Tank Secret:	False
Tank Secondary Containment:	Cut-off Walls
Tank Error Status:	No Missing Data
Date Entered:	01/16/2001
Certified Date:	01/17/2001
Substance:	Single Hazardous Substance on DEC List
Internal Protection:	Other
External Protection:	Other
Pipe Location:	Aboveground
Pipe Type:	Double Walled Fiberglass
Pipe Internal:	Other
Pipe External:	Other
Pipe Flag:	Other
Leak Detection:	Interstitial Monitoring
Overfill Protection:	Product Level Gauge
Haz Percent:	31
Last Test:	Not reported
Due Date:	Not reported
SWIS Code:	6101
Lat/Long:	Not reported
Is Updated:	False
Renew Date:	11/02/92
Is It There:	False
Delinquent:	False

GOODMAN BROTHERS STEEL DRUM CO INC (Continued) **1000190383**

Date Expired:	02/03/95
Owner Mark:	1
Certificate Needs to be Printed:	False
Fiscal Amt for Registration Fee Correct:	True
Renewal Has Been Printed for Facility:	True
Pre-Printed Renewal App Last Printed:	11/07/2000

Tank Id:	00001
CAS Number:	7647010
Federal ID:	Not reported
Tank Status:	In Service
Install Date:	00/00
Tank Closed:	02/00
Capacity (Gal):	5000
Chemical:	Hydrochloric acid
Tank Location:	Indoors, Belowground
Tank Type:	Fiberglass coated steel
Total Tanks:	1
Tank Secret:	False
Tank Secondary Containment:	Cut-off Walls
Tank Error Status:	No Missing Data
Date Entered:	02/03/1989
Certified Date:	01/17/2001
Substance:	Single Hazardous Substance on DEC List
Internal Protection:	Fiberglass Liner (FRP
External Protection:	Fiberglass
Pipe Location:	Aboveground
Pipe Type:	Double Walled Fiberglass
Pipe Internal:	None
Pipe External:	None
Pipe Flag:	None
Leak Detection:	None
Overfill Protection:	Catch Basin
Haz Percent:	31
Last Test:	Not reported
Due Date:	Not reported
SWIS Code:	6101
Lat/Long:	Not reported
Is Updated:	False
Renew Date:	11/02/92
Is It There:	False
Delinquent:	False
Date Expired:	02/03/95
Owner Mark:	1
Certificate Needs to be Printed:	False
Fiscal Amt for Registration Fee Correct:	True
Renewal Has Been Printed for Facility:	True
Pre-Printed Renewal App Last Printed:	11/07/2000

SPILLS:

Name:	GOODMAN BROT STEEL DRUMS
Address:	18 DIVISION ST
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0109317 / 2003-02-13
Facility ID:	0109317
Facility Type:	ER

GOODMAN BROTHERS STEEL DRUM CO INC (Continued) **1000190383**

DER Facility ID:	161369
Site ID:	193547
DEC Region:	2
Spill Cause:	Other
Spill Class:	C4
SWIS:	2401
Spill Date:	2001-12-20
Investigator:	SMSANGES
Referred To:	Not reported
Reported to Dept:	2001-12-20
CID:	199
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Responsible Party
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2001-12-20
Spill Record Last Update:	2003-02-13
Spiller Name:	Not reported
Spiller Company:	SAME
Spiller Address:	Not reported
Spiller Company:	999
Contact Name:	CRAIG GOODMAN
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was SANGESLAND ADMINISTRATIVE CLOSURE - AUSTIN"
Remarks:	"WHILE DOING MAINTAINCE ON A PUMP APPROX 1 QT OF WASTE WATER LEAKED OUT - ALL MATERAL CLEANED UP"

All Materials:

Site ID:	193547
Operable Unit ID:	846668
Operable Unit:	01
Material ID:	530525
Material Code:	0060A
Material Name:	wastewater
Case No.:	Not reported
Material FA:	Other
Quantity:	1.00
Units:	G
Recovered:	1.00
Oxygenate:	Not reported

Name:	GOODMAN BROT STEEL DRUMS
Address:	18 DIVISION PL
City,State,Zip:	BROOKLYN, NY
Spill Number/Closed Date:	0109316 / 2003-07-07
Facility ID:	0109316
Facility Type:	ER
DER Facility ID:	242844
Site ID:	300204
DEC Region:	2
Spill Cause:	Other
Spill Class:	C4

GOODMAN BROTHERS STEEL DRUM CO INC (Continued) **1000190383**

SWIS:	2401
Spill Date:	2001-12-20
Investigator:	SMSANGES
Referred To:	Not reported
Reported to Dept:	2001-12-20
CID:	199
Water Affected:	Not reported
Spill Source:	Commercial/Industrial
Spill Notifier:	Responsible Party
Cleanup Ceased:	Not reported
Cleanup Meets Std:	False
Last Inspection:	Not reported
Recommended Penalty:	False
UST Trust:	False
Remediation Phase:	0
Date Entered In Computer:	2001-12-20
Spill Record Last Update:	2003-07-07
Spiller Name:	Not reported
Spiller Company:	SAME
Spiller Address:	Not reported
Spiller Company:	999
Contact Name:	CRAIG GOODMAN
DEC Memo:	"Prior to Sept, 2004 data translation this spill Lead_DEC Field was SANGESLAND "
Remarks:	"WHILE DOING ROUTINE MAINTAINCE ON COMPRESSOR 2-3 GAL OF MOTOR OIL SPILLED FROM MACHINERY"

All Materials:

Site ID:	300204
Operable Unit ID:	847677
Operable Unit:	01
Material ID:	530524
Material Code:	0015
Material Name:	motor oil
Case No.:	Not reported
Material FA:	Petroleum
Quantity:	3.00
Units:	G
Recovered:	3.00
Oxygenate:	Not reported

ICIS:

Enforcement Action ID:	NY000A0000261010015000328
FRS ID:	110000892017
Action Name:	Not reported
Facility Name:	GOODMAN BROS STEEL DRUM CO-18DIVISIONPL
Facility Address:	18 DIVISION PL BROOKLYN, NY 11222
Enforcement Action Type:	Administrative Order
Facility County:	KINGS
Program System Acronym:	AIR
Enforcement Action Forum Desc:	Administrative - Formal
EA Type Code:	SCAAAO
Facility SIC Code:	3412
Federal Facility ID:	Not reported
Latitude in Decimal Degrees:	40.720775

GOODMAN BROTHERS STEEL DRUM CO INC (Continued) **1000190383**

Longitude in Decimal Degrees: 73.9414628
Permit Type Desc: Not reported
Program System Acronym: NY0000002610100150
Facility NAICS Code: 332439
Tribal Land Code: Not reported

Enforcement Action ID: NY000A0000261010015000321
FRS ID: 110000892017
Action Name: Not reported
Facility Name: GOODMAN BROS STEEL DRUM CO-18DIVISIONPL
Facility Address: 18 DIVISION PL
BROOKLYN, NY 11222
Enforcement Action Type: Notice of Violation
Facility County: KINGS
Program System Acronym: AIR
Enforcement Action Forum Desc: Administrative - Informal
EA Type Code: NOV
Facility SIC Code: 3412
Federal Facility ID: Not reported
Latitude in Decimal Degrees: 40.720775
Longitude in Decimal Degrees: 73.9414628
Permit Type Desc: Not reported
Program System Acronym: NY0000002610100150
Facility NAICS Code: 332439
Tribal Land Code: Not reported

FINDS:

Registry ID: 110000892017

Environmental Interest/Information System
AIR EMISSIONS CLASSIFICATION UNKNOWN

US EPA TRIS (Toxics Release Inventory System) contains information from facilities on the amounts of over 300 listed toxic chemicals that these facilities release directly to air, water, land, or that are transported off-site.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

FIS (New York - Facility Information System) is New York's Department of Environmental Conservation (DEC) information system for tracking environmental facility information found across the State.

HAZARDOUS WASTE BIENNIAL REPORTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

GOODMAN BROTHERS STEEL DRUM CO INC (Continued) **1000190383**

ECHO:
Envid: 1000190383
Registry ID: 110000892017
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110000892017

AIRS:
Name: GOODMAN BROS STEEL DRUM CO-18DIVISIONPL
Address: 18 DIVISION PL
City: BROOKLYN
Permit Type: ATV
Permit Status: Expired
Issue Date: 07/30/2002
Expiration Date: Not reported
County Fips: Not reported
DEC Id: 2610100150
Emission Unit Id: Not reported
Process Id: Not reported
Contaminant Name/cas: Not reported
Epa Control Code: Not reported
Contol Eff: Not reported
Emissions: Not reported
Unit: Not reported
Auth Type Code: 7
Latitude: 40.720775234
Longitude: 73.941462833

Name: GOODMAN BROS STEEL DRUM CO-18DIVISIONPL
Address: 18 DIVISION PL
City: BROOKLYN
Permit Type: ATV
Permit Status: Expired
Issue Date: 01/12/2000
Expiration Date: 07/30/2002
County Fips: Not reported
DEC Id: 2610100150
Emission Unit Id: Not reported
Process Id: Not reported
Contaminant Name/cas: Not reported
Epa Control Code: Not reported
Contol Eff: Not reported
Emissions: Not reported
Unit: Not reported
Auth Type Code: 7
Latitude: 40.720775234
Longitude: 73.941462833

NJ MANIFEST:
EPA Id: NYD047683776
Mail Address: Not reported
Mail City/State/Zip: Not reported
Facility Phone: Not reported
Emergency Phone: Not reported
Contact: Not reported
Comments: Not reported
SIC Code: Not reported
County: 00

GOODMAN BROTHERS STEEL DRUM CO INC (Continued) **1000190383**

Municipal:	00
Previous EPA Id:	Not reported
Gen Flag:	X
Trans Flag:	X
TSDF Flag:	Not reported
Name Change:	Not reported
Date Change:	Not reported

Manifest:

Manifest Number:	NJA5031614
EPA ID:	NYD047683776
Date Shipped:	01/27/2004
TSDF EPA ID:	NJD002454544
Transporter EPA ID:	NYD064748304
Transporter 2 EPA ID:	NJD002454544
Transporter 3 EPA ID:	Not reported
Transporter 4 EPA ID:	Not reported
Transporter 5 EPA ID:	Not reported
Transporter 6 EPA ID:	Not reported
Transporter 7 EPA ID:	Not reported
Transporter 8 EPA ID:	Not reported
Transporter 9 EPA ID:	Not reported
Transporter 10 EPA ID:	Not reported
Date Trans1 Transported Waste:	01/27/2004
Date Trans2 Transported Waste:	01/30/2004
Date Trans3 Transported Waste:	Not reported
Date Trans4 Transported Waste:	Not reported
Date Trans5 Transported Waste:	Not reported
Date Trans6 Transported Waste:	Not reported
Date Trans7 Transported Waste:	Not reported
Date Trans8 Transported Waste:	Not reported
Date Trans9 Transported Waste:	Not reported
Date Trans10 Transported Waste:	Not reported
Date TSDF Received Waste:	01/30/2004
TSDF EPA Facility Name:	Not reported
QTY Units:	Not reported
Transporter SEQ ID:	Not reported
Transporter-1 Date:	Not reported
Waste SEQ ID:	Not reported
Waste Type Code 2:	Not reported
Waste Type Code 3:	Not reported
Waste Type Code 4:	Not reported
Waste Type Code 5:	Not reported
Waste Type Code 6:	Not reported
Date Accepted:	Not reported
Manifest Discrepancy Type:	Not reported
Data Entry Number:	03090422
Was Load Rejected:	No
Reason Load Was Rejected:	Not reported

NY MANIFEST:

Country:	USA
EPA ID:	NYD047683776
Facility Status:	Not reported
Location Address 1:	18 DIVISION PLACE

GOODMAN BROTHERS STEEL DRUM CO INC (Continued) **1000190383**

Code:	BP
Location Address 2:	Not reported
Total Tanks:	Not reported
Location City:	BROOKLYN
Location State:	NY
Location Zip:	11222
Location Zip 4:	5699

NY MANIFEST:

EPAID:	NYD047683776
Mailing Name:	FORMER GOODMAN BROS STEEL DRUM CO
Mailing Contact:	MICHAEL HAGGERTY
Mailing Address 1:	625 BROADWAY
Mailing Address 2:	Not reported
Mailing City:	ALBANY
Mailing State:	NY
Mailing Zip:	12233
Mailing Zip 4:	7016
Mailing Country:	USA
Mailing Phone:	5184029688

NY MANIFEST:

Document ID:	NJA5031614
Manifest Status:	Not reported
seq:	Not reported
Year:	2004
Trans1 State ID:	NY1A378
Trans2 State ID:	2809
Generator Ship Date:	01/27/2004
Trans1 Recv Date:	01/27/2004
Trans2 Recv Date:	01/30/2004
TSD Site Recv Date:	01/30/2004
Part A Recv Date:	Not reported
Part B Recv Date:	Not reported
Generator EPA ID:	NYD047683776
Trans1 EPA ID:	NYD064748304
Trans2 EPA ID:	Not reported
TSDF ID 1:	NJD002454
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	F003 - UNKNOWN
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported

GOODMAN BROTHERS STEEL DRUM CO INC (Continued) **1000190383**

Quantity:	05000
Units:	P - Pounds
Number of Containers:	010
Container Type:	DM - Metal drums, barrels
Handling Method:	R Material recovery of more than 75 percent of the total material.
Specific Gravity:	01.00

Click this hyperlink while viewing on your computer to access
-1 additional NY MANIFEST: record(s) in the EDR Site Report.

Count: 7 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
BROOKLYN	S113916751	INGRAHAM STREET SIDEWALK GW	INGRAHAM STREET	11237	NY SHWS
BROOKLYN	S113917078	NORTH OF CORNISH KNIT GOODS	JOHNSON AVE	11206	NY SHWS
BROOKLYN	S113916666	MORGAN OIL TERMINAL	224038 MORGAN OIL TERMINAL		NY SHWS
BROOKLYN	S110487592	K - SCHOLES ST. STATION	SCHOLES ST 7 BOGART STS, MESSE	11206	NY SHWS, NY BROWNFIELDS
BROOKLYN	S113922100	SCHOLES ST. STATION	SCHOLES ST 7 BOGART STS, MESSE	11206	NY VCP
QUEENS	S122985415	A&G USED AUTO PART D/B/A PARTS ARE	1937 B FLUSHING AVERNUE	11385	NY SWF/LF
RIDGEWOOD	S118628347	WOLFF-ALPORT CHEMICAL COMPANY	1127-1129 IRVING AVENUE	11385	NY SHWS

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 04/11/2019
Date Data Arrived at EDR: 04/18/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 26

Source: EPA
Telephone: N/A
Last EDR Contact: 06/06/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 10
Telephone 206-553-8665

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 04/11/2019
Date Data Arrived at EDR: 04/18/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 26

Source: EPA
Telephone: N/A
Last EDR Contact: 06/06/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 04/11/2019
Date Data Arrived at EDR: 04/18/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 26

Source: EPA
Telephone: N/A
Last EDR Contact: 06/06/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 04/03/2019
Date Data Arrived at EDR: 04/05/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 04/05/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 04/11/2019
Date Data Arrived at EDR: 04/18/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 35

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/06/2019
Next Scheduled EDR Contact: 07/29/2019
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 04/11/2019
Date Data Arrived at EDR: 04/18/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 35

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 06/06/2019
Next Scheduled EDR Contact: 07/29/2019
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/27/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: (212) 637-3660
Last EDR Contact: 03/27/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: (212) 637-3660
Last EDR Contact: 03/27/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: (212) 637-3660
Last EDR Contact: 03/27/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: (212) 637-3660
Last EDR Contact: 03/27/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 02/22/2019
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 41

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 05/10/2019
Next Scheduled EDR Contact: 08/26/2019
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 01/31/2019
Date Data Arrived at EDR: 02/04/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/29/2019
Next Scheduled EDR Contact: 09/09/2019
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 01/31/2019
Date Data Arrived at EDR: 02/04/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 32

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 05/29/2019
Next Scheduled EDR Contact: 09/09/2019
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/26/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 36

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 03/26/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

SHWS: Inactive Hazardous Waste Disposal Sites in New York State

Referred to as the State Superfund Program, the Inactive Hazardous Waste Disposal Site Remedial Program is the cleanup program for inactive hazardous waste sites and now includes hazardous substance sites

Date of Government Version: 05/13/2019
Date Data Arrived at EDR: 05/15/2019
Date Made Active in Reports: 06/13/2019
Number of Days to Update: 29

Source: Department of Environmental Conservation
Telephone: 518-402-9622
Last EDR Contact: 05/15/2019
Next Scheduled EDR Contact: 08/26/2019
Data Release Frequency: Annually

State and tribal landfill and/or solid waste disposal site lists

SWF/LF: Facility Register

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 01/04/2019
Date Made Active in Reports: 02/14/2019
Number of Days to Update: 41

Source: Department of Environmental Conservation
Telephone: 518-457-2051
Last EDR Contact: 04/01/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 10/10/2018
Date Data Arrived at EDR: 03/08/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 54

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 04/26/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 10/17/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/26/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land

Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 10/12/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 04/26/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 02/19/2019
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/26/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land
A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 10/13/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 04/26/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 11/01/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 04/26/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 10/16/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 04/26/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 09/24/2018
Date Data Arrived at EDR: 03/12/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 50

Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 04/26/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

LTANKS: Spills Information Database
Leaking Storage Tank Incident Reports. These records contain an inventory of reported leaking storage tank incidents reported from 4/1/86 through the most recent update. They can be either leaking underground storage tanks or leaking aboveground storage tanks. The causes of the incidents are tank test failures, tank failures or tank overfills.

Date of Government Version: 05/13/2019
Date Data Arrived at EDR: 05/14/2019
Date Made Active in Reports: 06/13/2019
Number of Days to Update: 30

Source: Department of Environmental Conservation
Telephone: 518-402-9549
Last EDR Contact: 05/14/2019
Next Scheduled EDR Contact: 08/26/2019
Data Release Frequency: Varies

HIST LTANKS: Listing of Leaking Storage Tanks

A listing of leaking underground and aboveground storage tanks. The causes of the incidents are tank test failures, tank failures or tank overfills. In 2002, the Department of Environmental Conservation stopped providing updates to its original Spills Information Database. This database includes fields that are no longer available from the NYDEC as of January 1, 2002. Current information may be found in the NY LTANKS database. Department of Environmental Conservation.

Date of Government Version: 01/01/2002
Date Data Arrived at EDR: 07/08/2005
Date Made Active in Reports: 07/14/2005
Number of Days to Update: 6

Source: Department of Environmental Conservation
Telephone: 518-402-9549
Last EDR Contact: 07/07/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing

A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017
Date Data Arrived at EDR: 05/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 136

Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 04/25/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: Varies

UST: Petroleum Bulk Storage (PBS) Database

Facilities that have petroleum storage capacities in excess of 1,100 gallons and less than 400,000 gallons.

Date of Government Version: 03/26/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 06/13/2019
Number of Days to Update: 78

Source: Department of Environmental Conservation
Telephone: 518-402-9549
Last EDR Contact: 03/27/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: No Update Planned

CBS UST: Chemical Bulk Storage Database

Facilities that store regulated hazardous substances in underground tanks of any size

Date of Government Version: 01/01/2002
Date Data Arrived at EDR: 02/20/2002
Date Made Active in Reports: 03/22/2002
Number of Days to Update: 30

Source: NYSDEC
Telephone: 518-402-9549
Last EDR Contact: 10/24/2005
Next Scheduled EDR Contact: 01/23/2006
Data Release Frequency: No Update Planned

MOSF UST: Major Oil Storage Facilities Database

Facilities that may be onshore facilities or vessels, with petroleum storage capacities of 400,000 gallons or greater.

Date of Government Version: 01/01/2002
Date Data Arrived at EDR: 02/20/2002
Date Made Active in Reports: 03/22/2002
Number of Days to Update: 30

Source: NYSDEC
Telephone: 518-402-9549
Last EDR Contact: 07/25/2005
Next Scheduled EDR Contact: 10/24/2005
Data Release Frequency: No Update Planned

CBS: Chemical Bulk Storage Site Listing

These facilities store regulated hazardous substances in aboveground tanks with capacities of 185 gallons or greater, and/or in underground tanks of any size

Date of Government Version: 03/26/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 06/13/2019
Number of Days to Update: 78

Source: Department of Environmental Conservation
Telephone: 518-402-9549
Last EDR Contact: 03/27/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

MOSF: Major Oil Storage Facility Site Listing

These facilities may be onshore facilities or vessels, with petroleum storage capacities of 400,000 gallons or greater.

Date of Government Version: 03/26/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 06/13/2019
Number of Days to Update: 78

Source: Department of Environmental Conservation
Telephone: 518-402-9549
Last EDR Contact: 03/27/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

AST: Petroleum Bulk Storage

Registered Aboveground Storage Tanks.

Date of Government Version: 03/26/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 06/13/2019
Number of Days to Update: 78

Source: Department of Environmental Conservation
Telephone: 518-402-9549
Last EDR Contact: 03/27/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: No Update Planned

CBS AST: Chemical Bulk Storage Database

Facilities that store regulated hazardous substances in aboveground tanks with capacities of 185 gallons or greater, and/or in underground tanks of any size.

Date of Government Version: 01/01/2002
Date Data Arrived at EDR: 02/20/2002
Date Made Active in Reports: 03/22/2002
Number of Days to Update: 30

Source: NYSDEC
Telephone: 518-402-9549
Last EDR Contact: 07/25/2005
Next Scheduled EDR Contact: 10/24/2005
Data Release Frequency: No Update Planned

MOSF AST: Major Oil Storage Facilities Database

Facilities that may be onshore facilities or vessels, with petroleum storage capacities of 400,000 gallons or greater.

Date of Government Version: 01/01/2002
Date Data Arrived at EDR: 02/20/2002
Date Made Active in Reports: 03/22/2002
Number of Days to Update: 30

Source: NYSDEC
Telephone: 518-402-9549
Last EDR Contact: 07/25/2005
Next Scheduled EDR Contact: 10/24/2005
Data Release Frequency: No Update Planned

INDIAN UST R4: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 09/24/2018
Date Data Arrived at EDR: 03/12/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 50

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 04/26/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 10/17/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/26/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 10/03/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 04/26/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 10/16/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 04/26/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 10/10/2018
Date Data Arrived at EDR: 03/08/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 54

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 04/26/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 11/07/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/26/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 11/01/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 04/26/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

INDIAN UST R5: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 10/12/2018
Date Data Arrived at EDR: 03/07/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 55

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 04/26/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

TANKS: Storage Tank Faciliy Listing
This database contains records of facilities that are or have been regulated under Bulk Storage Program. Tank information for these facilities may not be releasable by the state agency.

Date of Government Version: 03/26/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 06/13/2019
Number of Days to Update: 78
Source: Department of Environmental Conservation
Telephone: 518-402-9543
Last EDR Contact: 03/27/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

State and tribal institutional control / engineering control registries

RES DECL: Restrictive Declarations Listing
A restrictive declaration is a covenant running with the land which binds the present and future owners of the property. As a condition of certain special permits, the City Planning Commission may require an applicant to sign and record a restrictive declaration that places specified conditions on the future use and development of the property. Certain restrictive declarations are indicated by a D on zoning maps.

Date of Government Version: 11/18/2010
Date Data Arrived at EDR: 06/30/2014
Date Made Active in Reports: 07/21/2014
Number of Days to Update: 21
Source: NYC Department of City Planning
Telephone: 212-720-3401
Last EDR Contact: 03/22/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: Varies

ENV RES DECL: Environmental Restrictive Declarations
The Environmental Restrictive Declarations (ERD) listed were recorded in connection with a zoning action against the noted Tax Blocks and Tax Lots, or portion thereof, and are available in the property records on file at the Office of the City Register for Bronx, Kings, New York and Queens counties or at the Richmond County Clerk's office. They contain environmental requirements with respect to hazardous materials, air quality and/or noise in accordance with Section 11-15 of this Resolution.

Date of Government Version: 02/13/2019
Date Data Arrived at EDR: 03/22/2019
Date Made Active in Reports: 06/14/2019
Number of Days to Update: 84
Source: New York City Department of City Planning
Telephone: 212-720-3300
Last EDR Contact: 03/19/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: Varies

ENG CONTROLS: Registry of Engineering Controls
Environmental Remediation sites that have engineering controls in place.

Date of Government Version: 05/13/2019
Date Data Arrived at EDR: 05/15/2019
Date Made Active in Reports: 06/13/2019
Number of Days to Update: 29
Source: Department of Environmental Conservation
Telephone: 518-402-9553
Last EDR Contact: 05/15/2019
Next Scheduled EDR Contact: 08/26/2019
Data Release Frequency: Quarterly

INST CONTROL: Registry of Institutional Controls
Environmental Remediation sites that have institutional controls in place.

Date of Government Version: 05/13/2019
Date Data Arrived at EDR: 05/15/2019
Date Made Active in Reports: 06/13/2019
Number of Days to Update: 29
Source: Department of Environmental Conservation
Telephone: 518-402-9553
Last EDR Contact: 05/15/2019
Next Scheduled EDR Contact: 08/26/2019
Data Release Frequency: Quarterly

State and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

VCP: Voluntary Cleanup Agreements

New York established its Voluntary Cleanup Program (VCP) to address the environmental, legal and financial barriers that often hinder the redevelopment and reuse of contaminated properties. The Voluntary Cleanup Program was developed to enhance private sector cleanup of brownfields by enabling parties to remediate sites using private rather than public funds and to reduce the development pressures on "greenfield" sites.

Date of Government Version: 05/13/2019
Date Data Arrived at EDR: 05/15/2019
Date Made Active in Reports: 06/13/2019
Number of Days to Update: 29

Source: Department of Environmental Conservation
Telephone: 518-402-9711
Last EDR Contact: 05/15/2019
Next Scheduled EDR Contact: 08/26/2019
Data Release Frequency: Semi-Annually

VCP NYC: Voluntary Cleanup Program Listing NYC

New York City voluntary cleanup program sites.

Date of Government Version: 12/14/2018
Date Data Arrived at EDR: 12/19/2018
Date Made Active in Reports: 02/13/2019
Number of Days to Update: 56

Source: New York City Office of Environmental Protection
Telephone: 212-788-8841
Last EDR Contact: 03/18/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 03/25/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Varies

State and tribal Brownfields sites

BROWNFIELDS: Brownfields Site List

A Brownfield is any real property where redevelopment or re-use may be complicated by the presence or potential presence of a hazardous waste, petroleum, pollutant, or contaminant.

Date of Government Version: 05/13/2019
Date Data Arrived at EDR: 05/15/2019
Date Made Active in Reports: 06/13/2019
Number of Days to Update: 29

Source: Department of Environmental Conservation
Telephone: 518-402-9764
Last EDR Contact: 05/15/2019
Next Scheduled EDR Contact: 08/26/2019
Data Release Frequency: Semi-Annually

ERP: Environmental Restoration Program Listing

In an effort to spur the cleanup and redevelopment of brownfields, New Yorkers approved a $200 million Environmental Restoration or Brownfields Fund as part of the $1.75 billion Clean Water/Clean Air Bond Act of 1996 (1996 Bond Act). Enhancements to the program were enacted on October 7, 2003. Under the Environmental Restoration Program, the State provides grants to municipalities to reimburse up to 90 percent of on-site eligible costs and 100% of off-site eligible costs for site investigation and remediation activities. Once remediated, the property may then be reused for commercial, industrial, residential or public use.

Date of Government Version: 05/13/2019
Date Data Arrived at EDR: 05/15/2019
Date Made Active in Reports: 06/13/2019
Number of Days to Update: 29

Source: Department of Environmental Conservation
Telephone: 518-402-9622
Last EDR Contact: 05/15/2019
Next Scheduled EDR Contact: 08/26/2019
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites

Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/17/2018
Date Data Arrived at EDR: 12/18/2018
Date Made Active in Reports: 01/11/2019
Number of Days to Update: 24

Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 06/04/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

SWTIRE: Registered Waste Tire Storage & Facility List

A listing of facilities registered to accept waste tires.

Date of Government Version: 02/27/2018
Date Data Arrived at EDR: 04/06/2018
Date Made Active in Reports: 06/08/2018
Number of Days to Update: 63

Source: Department of Environmental Conservation
Telephone: 518-402-8694
Last EDR Contact: 06/10/2019
Next Scheduled EDR Contact: 09/23/2019
Data Release Frequency: No Update Planned

SWRCY: Registered Recycling Facility List

A listing of recycling facilities.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 01/04/2019
Date Made Active in Reports: 02/14/2019
Number of Days to Update: 41

Source: Department of Environmental Conservation
Telephone: 518-402-8705
Last EDR Contact: 04/01/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Quarterly

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 04/26/2019
Next Scheduled EDR Contact: 08/12/2019
Data Release Frequency: Varies

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 04/22/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: No Update Planned

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land

A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 04/23/2019
Next Scheduled EDR Contact: 08/12/2019
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 02/24/2019
Date Data Arrived at EDR: 02/26/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 50

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/24/2019
Next Scheduled EDR Contact: 09/09/2019
Data Release Frequency: No Update Planned

DEL SHWS: Delisted Registry Sites

A database listing of sites delisted from the Registry of Inactive Hazardous Waste Disposal Sites.

Date of Government Version: 05/13/2019
Date Data Arrived at EDR: 05/15/2019
Date Made Active in Reports: 06/13/2019
Number of Days to Update: 29

Source: Department of Environmental Conservation
Telephone: 518-402-9622
Last EDR Contact: 05/15/2019
Next Scheduled EDR Contact: 08/26/2019
Data Release Frequency: Quarterly

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 02/24/2019
Date Data Arrived at EDR: 02/26/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 50

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 05/24/2019
Next Scheduled EDR Contact: 09/09/2019
Data Release Frequency: Quarterly

PFAS: PFAS Contamination Site Location Listing

DEC surveyed select businesses, fire departments, fire training centers, bulk storage facilities, airports, and Department of Defense (DoD) facilities. The responses to the survey have helped to determine if these entities used or stored materials containing PFOA/PFOS including AFFF and dispersants used in Teflon coating operations. The results of this survey will be updated periodically as additional responses are received..

Date of Government Version: 09/01/2016
Date Data Arrived at EDR: 02/08/2019
Date Made Active in Reports: 03/22/2019
Number of Days to Update: 42

Source: Department of Environmental Conservation
Telephone: 518-402-9020
Last EDR Contact: 05/08/2019
Next Scheduled EDR Contact: 08/19/2019
Data Release Frequency: Varies

Local Lists of Registered Storage Tanks

SUFFOLK CO TANKS: Storage Tank Database
Facilities that have no tank information

Date of Government Version: 06/28/2018
Date Data Arrived at EDR: 02/05/2019
Date Made Active in Reports: 03/08/2019
Number of Days to Update: 31

Source: Department of Health Services
Telephone: 631-854-2516
Last EDR Contact: 04/29/2019
Next Scheduled EDR Contact: 08/12/2019
Data Release Frequency: Varies

HIST UST: Historical Petroleum Bulk Storage Database
These facilities have petroleum storage capacities in excess of 1,100 gallons and less than 400,000 gallons. This database contains detailed information per site. It is no longer updated due to the sensitive nature of the information involved. See UST for more current data.

Date of Government Version: 01/01/2002
Date Data Arrived at EDR: 06/02/2006
Date Made Active in Reports: 07/20/2006
Number of Days to Update: 48

Source: Department of Environmental Conservation
Telephone: 518-402-9549
Last EDR Contact: 10/23/2006
Next Scheduled EDR Contact: 01/22/2007
Data Release Frequency: Varies

HIST AST: Historical Petroleum Bulk Storage Database
These facilities have petroleum storage capabilities in excess of 1,100 gallons and less than 400,000 gallons. This database contains detailed information per site. No longer updated due to the sensitive nature of the information involved. See AST for more current data.

Date of Government Version: 01/01/2002
Date Data Arrived at EDR: 06/02/2006
Date Made Active in Reports: 07/20/2006
Number of Days to Update: 48

Source: Department of Environmental Conservation
Telephone: 518-402-9549
Last EDR Contact: 10/23/2006
Next Scheduled EDR Contact: 01/22/2007
Data Release Frequency: No Update Planned

Local Land Records

LIENS: Spill Liens Information
Lien information from the Oil Spill Fund.

Date of Government Version: 02/04/2019
Date Data Arrived at EDR: 02/07/2019
Date Made Active in Reports: 02/14/2019
Number of Days to Update: 7

Source: Office of the State Comptroller
Telephone: 518-474-9034
Last EDR Contact: 05/01/2019
Next Scheduled EDR Contact: 08/19/2019
Data Release Frequency: Quarterly

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 04/11/2019
Date Data Arrived at EDR: 04/18/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 35

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 06/06/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System
Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/26/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 49

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/26/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

SPILLS: Spills Information Database

Data collected on spills reported to NYSDEC as required by one or more of the following: Article 12 of the Navigation Law, 6 NYCRR Section 613.8 (from PBS regs), or 6 NYCRR Section 595.2 (from CBS regs). It includes spills active as of April 1, 1986, as well as spills occurring since this date.

Date of Government Version: 05/13/2019
Date Data Arrived at EDR: 05/14/2019
Date Made Active in Reports: 06/13/2019
Number of Days to Update: 30

Source: Department of Environmental Conservation
Telephone: 518-402-9549
Last EDR Contact: 05/14/2019
Next Scheduled EDR Contact: 08/26/2019
Data Release Frequency: Varies

HIST SPILLS: SPILLS Database

This database contains records of chemical and petroleum spill incidents. Under State law, petroleum and hazardous chemical spills that can impact the waters of the state must be reported by the spiller (and, in some cases, by anyone who has knowledge of the spills). In 2002, the Department of Environmental Conservation stopped providing updates to its original Spills Information Database. This database includes fields that are no longer available from the NYDEC as of January 1, 2002. Current information may be found in the NY SPILLS database. Department of Environmental Conservation.

Date of Government Version: 01/01/2002
Date Data Arrived at EDR: 07/08/2005
Date Made Active in Reports: 07/14/2005
Number of Days to Update: 6

Source: Department of Environmental Conservation
Telephone: 518-402-9549
Last EDR Contact: 07/07/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 12/14/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/12/2013
Number of Days to Update: 40

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SPILLS 80: SPILLS80 data from FirstSearch

Spills 80 includes those spill and release records available from FirstSearch databases prior to 1990. Typically, they may include chemical, oil and/or hazardous substance spills recorded before 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 80.

Date of Government Version: 11/02/2010
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 03/07/2013
Number of Days to Update: 63

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/27/2019
Date Made Active in Reports: 04/17/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: (212) 637-3660
Last EDR Contact: 03/27/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 03/07/2019
Date Data Arrived at EDR: 04/03/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 50

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 05/21/2019
Next Scheduled EDR Contact: 09/02/2019
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 04/12/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 04/12/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 05/13/2019
Next Scheduled EDR Contact: 08/26/2019
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 03/25/2019
Date Data Arrived at EDR: 03/26/2019
Date Made Active in Reports: 05/07/2019
Number of Days to Update: 42

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 03/26/2019
Next Scheduled EDR Contact: 07/08/2019
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 05/06/2019
Next Scheduled EDR Contact: 08/19/2019
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 05/10/2019
Next Scheduled EDR Contact: 08/19/2019
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 03/22/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 01/10/2018
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 2

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 05/24/2019
Next Scheduled EDR Contact: 09/02/2019
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/24/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 04/11/2019
Date Data Arrived at EDR: 04/18/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 35

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 06/06/2019
Next Scheduled EDR Contact: 09/16/2019
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 04/25/2019
Date Data Arrived at EDR: 05/02/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 04/22/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 04/11/2019
Date Data Arrived at EDR: 04/18/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 06/06/2019
Next Scheduled EDR Contact: 08/19/2019
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 03/20/2019
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 34

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 04/10/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 04/08/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)

A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System

MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43

Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 04/22/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data

A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 06/07/2019
Next Scheduled EDR Contact: 09/16/2019
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List

A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 06/07/2019
Next Scheduled EDR Contact: 09/16/2019
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 05/24/2017
Date Data Arrived at EDR: 11/30/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 15
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 04/26/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 04/02/2019
Date Data Arrived at EDR: 04/02/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 42
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 04/02/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data
Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 12/03/2018
Date Data Arrived at EDR: 01/29/2019
Date Made Active in Reports: 03/21/2019
Number of Days to Update: 51
Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 04/30/2019
Next Scheduled EDR Contact: 08/12/2019
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees
Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 03/31/2019
Date Data Arrived at EDR: 04/23/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 30

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 04/05/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 05/24/2019
Next Scheduled EDR Contact: 09/02/2019
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 04/11/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 08/08/2017
Date Data Arrived at EDR: 09/11/2018
Date Made Active in Reports: 09/14/2018
Number of Days to Update: 3

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 05/02/2019
Next Scheduled EDR Contact: 08/19/2019
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 10/11/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 23

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 05/24/2019
Next Scheduled EDR Contact: 09/02/2019
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 04/11/2019
Date Data Arrived at EDR: 04/18/2019
Date Made Active in Reports: 05/14/2019
Number of Days to Update: 26

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 06/06/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 11/27/2018
Date Data Arrived at EDR: 02/27/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 33

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 05/29/2019
Next Scheduled EDR Contact: 09/09/2019
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/31/2019
Next Scheduled EDR Contact: 09/09/2019
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 05/31/2019
Next Scheduled EDR Contact: 09/09/2019
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 03/27/2019
Date Data Arrived at EDR: 03/28/2019
Date Made Active in Reports: 05/01/2019
Number of Days to Update: 34

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 06/10/2019
Next Scheduled EDR Contact: 09/23/2019
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 02/15/2019
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 03/15/2019
Number of Days to Update: 10

Source: EPA
Telephone: (212) 637-3000
Last EDR Contact: 06/05/2019
Next Scheduled EDR Contact: 09/16/2019
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing

A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 07/26/2018
Date Made Active in Reports: 10/05/2018
Number of Days to Update: 71

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 05/24/2019
Next Scheduled EDR Contact: 09/09/2019
Data Release Frequency: Varies

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 04/07/2019
Date Data Arrived at EDR: 04/09/2019
Date Made Active in Reports: 05/23/2019
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 04/09/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 01/17/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 74

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 04/15/2019
Next Scheduled EDR Contact: 07/29/2019
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing

This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 02/19/2019
Date Data Arrived at EDR: 02/21/2019
Date Made Active in Reports: 04/01/2019
Number of Days to Update: 39

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 05/21/2019
Next Scheduled EDR Contact: 09/02/2019
Data Release Frequency: Quarterly

AIRS: Air Emissions Data
Point source emissions inventory data.

Date of Government Version: 05/06/2019
Date Data Arrived at EDR: 05/07/2019
Date Made Active in Reports: 06/13/2019
Number of Days to Update: 37

Source: Department of Environmental Conservation
Telephone: 518-402-8452
Last EDR Contact: 04/22/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: Annually

COAL ASH: Coal Ash Disposal Site Listing
A listing of coal ash disposal site locations.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 01/04/2019
Date Made Active in Reports: 02/13/2019
Number of Days to Update: 40

Source: Department of Environmental Conservation
Telephone: 518-402-8660
Last EDR Contact: 04/01/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Quarterly

DRYCLEANERS: Registered Drycleaners
A listing of all registered drycleaning facilities.

Date of Government Version: 11/05/2018
Date Data Arrived at EDR: 03/12/2019
Date Made Active in Reports: 06/13/2019
Number of Days to Update: 93

Source: Department of Environmental Conservation
Telephone: 518-402-8403
Last EDR Contact: 06/10/2019
Next Scheduled EDR Contact: 09/23/2019
Data Release Frequency: Annually

E DESIGNATION: E DESIGNATION SITE LISTING
The (E (Environmental)) designation would ensure that sampling and remediation take place on the subject properties, and would avoid any significant impacts related to hazardous materials at these locations. The (E) designations would require that the fee owner of the sites conduct a testing and sampling protocol, and remediation where appropriate, to the satisfaction of the NYCDEP before the issuance of a building permit by the Department of Buildings pursuant to the provisions of Section 11-15 of the Zoning Resolution (Environmental Requirements). The (E) designations also include a mandatory construction-related health and safety plan which must be approved by NYCDEP.

Date of Government Version: 10/31/2018
Date Data Arrived at EDR: 12/19/2018
Date Made Active in Reports: 02/13/2019
Number of Days to Update: 56

Source: New York City Department of City Planning
Telephone: 718-595-6658
Last EDR Contact: 03/19/2019
Next Scheduled EDR Contact: 07/01/2019
Data Release Frequency: Semi-Annually

Financial Assurance 1: Financial Assurance Information Listing
Financial assurance information.

Date of Government Version: 01/15/2019
Date Data Arrived at EDR: 01/17/2019
Date Made Active in Reports: 02/14/2019
Number of Days to Update: 28

Source: Department of Environmental Conservation
Telephone: 518-402-8660
Last EDR Contact: 04/01/2019
Next Scheduled EDR Contact: 07/15/2019
Data Release Frequency: Quarterly

Financial Assurance 2: Financial Assurance Information Listing
A listing of financial assurance information for hazardous waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 12/29/2017
Date Data Arrived at EDR: 04/06/2018
Date Made Active in Reports: 06/05/2018
Number of Days to Update: 60

Source: Department of Environmental Conservation
Telephone: 518-402-8712
Last EDR Contact: 06/10/2019
Next Scheduled EDR Contact: 09/23/2019
Data Release Frequency: Varies

HSWDS: Hazardous Substance Waste Disposal Site Inventory

The list includes any known or suspected hazardous substance waste disposal sites. Also included are sites delisted from the Registry of Inactive Hazardous Waste Disposal Sites and non-Registry sites that U.S. EPA Preliminary Assessment (PA) reports or Site Investigation (SI) reports were prepared. Hazardous Substance Waste Disposal Sites are eligible to be Superfund sites now that the New York State Superfund has been refinanced and changed. This means that the study inventory has served its purpose and will no longer be maintained as a separate entity. The last version of the study inventory is frozen in time. The sites on the study will not automatically be made Superfund sites, rather each site will be further evaluated for listing on the Registry. So overtime they will be added to the registry or not.

Date of Government Version: 01/01/2003
Date Data Arrived at EDR: 10/20/2006
Date Made Active in Reports: 11/30/2006
Number of Days to Update: 41

Source: Department of Environmental Conservation
Telephone: 518-402-9564
Last EDR Contact: 05/26/2009
Next Scheduled EDR Contact: 08/24/2009
Data Release Frequency: No Update Planned

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 01/01/2019
Date Data Arrived at EDR: 01/30/2019
Date Made Active in Reports: 02/14/2019
Number of Days to Update: 15

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 05/01/2019
Next Scheduled EDR Contact: 08/12/2019
Data Release Frequency: Quarterly

SPDES: State Pollutant Discharge Elimination System

New York State has a state program which has been approved by the United States Environmental Protection Agency for the control of wastewater and stormwater discharges in accordance with the Clean Water Act. Under New York State law the program is known as the State Pollutant Discharge Elimination System (SPDES) and is broader in scope than that required by the Clean Water Act in that it controls point source discharges to groundwaters as well as surface waters.

Date of Government Version: 01/30/2019
Date Data Arrived at EDR: 02/07/2019
Date Made Active in Reports: 02/14/2019
Number of Days to Update: 7

Source: Department of Environmental Conservation
Telephone: 518-402-8233
Last EDR Contact: 04/22/2019
Next Scheduled EDR Contact: 08/05/2019
Data Release Frequency: No Update Planned

VAPOR REOPENED: Vapor Intrusion Legacy Site List

New York is currently re-evaluating previous assumptions and decisions regarding the potential for soil vapor intrusion exposures at sites. As a result, all past, current, and future contaminated sites will be evaluated to determine whether these sites have the potential for exposures related to soil vapor intrusion.

Date of Government Version: 12/01/2018
Date Data Arrived at EDR: 02/13/2019
Date Made Active in Reports: 06/13/2019
Number of Days to Update: 120

Source: Department of Environmenal Conservation
Telephone: 518-402-9814
Last EDR Contact: 05/17/2019
Next Scheduled EDR Contact: 08/26/2019
Data Release Frequency: Varies

UIC: Underground Injection Control Wells

A listing of enhanced oil recovery underground injection wells.

Date of Government Version: 12/03/2018
Date Data Arrived at EDR: 12/06/2018
Date Made Active in Reports: 12/20/2018
Number of Days to Update: 14

Source: Department of Environmental Conservation
Telephone: 518-402-8056
Last EDR Contact: 06/05/2019
Next Scheduled EDR Contact: 09/16/2019
Data Release Frequency: Quarterly

COOLING TOWERS: Registered Cooling Towers

This data includes the location of cooling towers registered with New York State. The data is self-reported by owners/property managers of cooling towers in service in New York State. In August 2015, the New York State Department of Health released emergency regulations requiring the owners of cooling towers to register them with New York State.

Date of Government Version: 01/08/2019
Date Data Arrived at EDR: 01/16/2019
Date Made Active in Reports: 02/13/2019
Number of Days to Update: 28

Source: Department of Health
Telephone: 518-402-7650
Last EDR Contact: 04/17/2019
Next Scheduled EDR Contact: 07/29/2019
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA HWS: Recovered Government Archive State Hazardous Waste Facilities List
The EDR Recovered Government Archive State Hazardous Waste database provides a list of SHWS incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Conservation in New York.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: Department of Environmental Conservation
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LF: Recovered Government Archive Solid Waste Facilities List
The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Environmental Conservation in New York.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/10/2014
Number of Days to Update: 193

Source: Department of Environmental Conservation
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

CORTLAND COUNTY:

AST - CORTLAND: Cortland County Storage Tank Listing
A listing of aboveground storage tank sites located in Cortland County.

Date of Government Version: 03/11/2019
Date Data Arrived at EDR: 03/12/2019
Date Made Active in Reports: 06/13/2019
Number of Days to Update: 93

Source: Cortland County Health Department
Telephone: 607-753-5035
Last EDR Contact: 04/29/2019
Next Scheduled EDR Contact: 08/12/2019
Data Release Frequency: Quarterly

UST - CORTLAND: Cortland County Storage Tank Listing
A listing of underground storage tank sites located in Cortland County.

Date of Government Version: 03/11/2019
Date Data Arrived at EDR: 03/12/2019
Date Made Active in Reports: 06/13/2019
Number of Days to Update: 93

Source: Cortland County Health Department
Telephone: 607-753-5035
Last EDR Contact: 04/29/2019
Next Scheduled EDR Contact: 08/12/2019
Data Release Frequency: Quarterly

NASSAU COUNTY:

AST - NASSAU: Registered Tank Database
A listing of aboveground storage tank sites located in Nassau County.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 02/15/2017
Number of Days to Update: 35

Source: Nassau County Health Department
Telephone: 516-571-3314
Last EDR Contact: 04/29/2019
Next Scheduled EDR Contact: 08/12/2019
Data Release Frequency: No Update Planned

AST NCFM: Storage Tank Database
A listing of aboveground storage tank sites located in Nassau County.

Date of Government Version: 02/15/2011
Date Data Arrived at EDR: 02/23/2011
Date Made Active in Reports: 03/29/2011
Number of Days to Update: 34

Source: Nassau County Office of the Fire Marshal
Telephone: 516-572-1000
Last EDR Contact: 04/29/2019
Next Scheduled EDR Contact: 08/12/2019
Data Release Frequency: Varies

TANKS NASSAU: Registered Tank Database in Nassau County
A listing of facilities in Nassau County with storage tanks.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 02/15/2017
Number of Days to Update: 35

Source: Nassau County Department of Health
Telephone: 516-227-9691
Last EDR Contact: 04/29/2019
Next Scheduled EDR Contact: 08/12/2019
Data Release Frequency: Varies

UST - NASSAU: Registered Tank Database
A listing of underground storage tank sites located in Nassau County.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 02/15/2017
Number of Days to Update: 35

Source: Nassau County Health Department
Telephone: 516-571-3314
Last EDR Contact: 04/29/2019
Next Scheduled EDR Contact: 08/12/2019
Data Release Frequency: No Update Planned

UST NCFM: Storage Tank Database
A listing of underground storage tank sites located in Nassau County.

Date of Government Version: 02/15/2011
Date Data Arrived at EDR: 02/23/2011
Date Made Active in Reports: 03/29/2011
Number of Days to Update: 34

Source: Nassau County Office of the Fire Marshal
Telephone: 516-572-1000
Last EDR Contact: 04/29/2019
Next Scheduled EDR Contact: 08/12/2019
Data Release Frequency: Varies

ROCKLAND COUNTY:

AST - ROCKLAND: Petroleum Bulk Storage Database
A listing of aboveground storage tank sites located in Rockland County. Rockland County?s Petroleum Bulk Storage (PBS) program is no longer in service. All related operations/duties are now wholly overseen by the New York State Dept. of Environmental Conservation (NYSDEC).

Date of Government Version: 02/02/2017
Date Data Arrived at EDR: 03/17/2017
Date Made Active in Reports: 09/22/2017
Number of Days to Update: 189

Source: Rockland County Health Department
Telephone: 914-364-2605
Last EDR Contact: 06/03/2019
Next Scheduled EDR Contact: 09/16/2019
Data Release Frequency: No Update Planned

UST - ROCKLAND: Petroleum Bulk Storage Database
A listing of underground storage tank sites located in Rockland County. Rockland County?s Petroleum Bulk Storage (PBS) program is no longer in service. All related operations/duties are now wholly overseen by the New York State Dept. of Environmental Conservation (NYSDEC).

Date of Government Version: 02/02/2017
Date Data Arrived at EDR: 03/17/2017
Date Made Active in Reports: 09/22/2017
Number of Days to Update: 189

Source: Rockland County Health Department
Telephone: 914-364-2605
Last EDR Contact: 06/03/2019
Next Scheduled EDR Contact: 09/16/2019
Data Release Frequency: No Update Planned

SUFFOLK COUNTY:

AST - SUFFOLK: Storage Tank Database
A listing of aboveground storage tank sites located in Suffolk County.

Date of Government Version: 06/28/2018
Date Data Arrived at EDR: 12/06/2018
Date Made Active in Reports: 02/07/2019
Number of Days to Update: 63

Source: Suffolk County Department of Health Services
Telephone: 631-854-2521
Last EDR Contact: 04/29/2019
Next Scheduled EDR Contact: 08/12/2019
Data Release Frequency: No Update Planned

UST - SUFFOLK: Storage Tank Database
A listing of underground storage tank sites located in Suffolk County.

Date of Government Version: 06/28/2018
Date Data Arrived at EDR: 12/06/2018
Date Made Active in Reports: 02/07/2019
Number of Days to Update: 63

Source: Suffolk County Department of Health Services
Telephone: 631-854-2521
Last EDR Contact: 04/29/2019
Next Scheduled EDR Contact: 08/12/2019
Data Release Frequency: No Update Planned

WESTCHESTER COUNTY:

AST - WESTCHESTER: Listing of Storage Tanks
A listing of aboveground storage tank sites located in Westchester County.

Date of Government Version: 05/10/2019
Date Data Arrived at EDR: 05/17/2019
Date Made Active in Reports: 06/13/2019
Number of Days to Update: 27

Source: Westchester County Department of Health
Telephone: 914-813-5161
Last EDR Contact: 04/29/2019
Next Scheduled EDR Contact: 08/12/2019
Data Release Frequency: Semi-Annually

UST - WESTCHESTER: Listing of Storage Tanks
A listing of underground storage tank sites located in Westchester County.

Date of Government Version: 05/10/2019
Date Data Arrived at EDR: 05/17/2019
Date Made Active in Reports: 06/13/2019
Number of Days to Update: 27

Source: Westchester County Department of Health
Telephone: 914-813-5161
Last EDR Contact: 04/29/2019
Next Scheduled EDR Contact: 08/12/2019
Data Release Frequency: Semi-Annually

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 02/11/2019
Date Data Arrived at EDR: 02/12/2019
Date Made Active in Reports: 03/04/2019
Number of Days to Update: 20

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 05/14/2019
Next Scheduled EDR Contact: 08/26/2019
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2018
Date Data Arrived at EDR: 04/10/2019
Date Made Active in Reports: 05/16/2019
Number of Days to Update: 36

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 04/10/2019
Next Scheduled EDR Contact: 07/22/2019
Data Release Frequency: Annually

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 10/23/2018
Date Made Active in Reports: 11/27/2018
Number of Days to Update: 35

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 04/15/2019
Next Scheduled EDR Contact: 07/29/2019
Data Release Frequency: Annually

RI MANIFEST: Manifest information
Hazardous waste manifest information

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 02/23/2018
Date Made Active in Reports: 04/09/2018
Number of Days to Update: 45

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 05/17/2019
Next Scheduled EDR Contact: 09/02/2019
Data Release Frequency: Annually

VT MANIFEST: Hazardous Waste Manifest Data
Hazardous waste manifest information.

Date of Government Version: 01/16/2019
Date Data Arrived at EDR: 01/17/2019
Date Made Active in Reports: 02/19/2019
Number of Days to Update: 33

Source: Department of Environmental Conservation
Telephone: 802-241-3443
Last EDR Contact: 04/15/2019
Next Scheduled EDR Contact: 07/29/2019
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2017
Date Data Arrived at EDR: 06/15/2018
Date Made Active in Reports: 07/09/2018
Number of Days to Update: 24

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 06/10/2019
Next Scheduled EDR Contact: 09/23/2019
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: PennWell Corporation
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data
Source: PennWell Corporation
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GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Day Care Providers
Source: Department of Health
Telephone: 212-676-2444

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Freshwater Wetlands
Source: Department of Environmental Conservation
Telephone: 518-402-8961

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

450 JOHNSON AVENUE
450 JOHNSON AVENUE
BROOKLYN, NY 11237

TARGET PROPERTY COORDINATES

Latitude (North):	40.707711 - 40° 42' 27.76''
Longitude (West):	73.930274 - 73° 55' 48.99''
Universal Tranverse Mercator:	Zone 18
UTM X (Meters):	590365.1
UTM Y (Meters):	4506650.0
Elevation:	19 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5940597 BROOKLYN, NY
Version Date:	2013

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

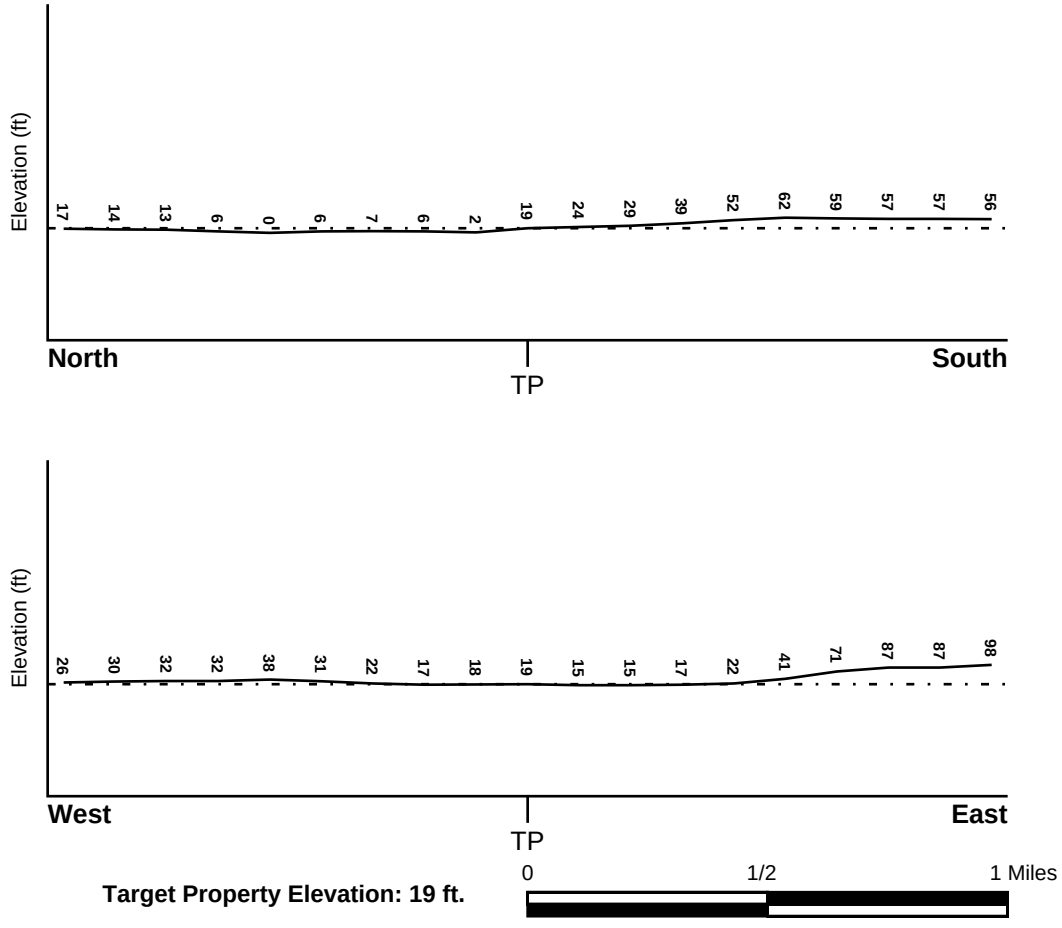
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General North

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Target Property Elevation: 19 ft.

Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
3604970208F	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
3604970202F	FEMA FIRM Flood data
3604970206F	FEMA FIRM Flood data
3604970204F	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
BROOKLYN	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

Era:	Mesozoic
System:	Cretaceous
Series:	Upper Cretaceous
Code:	uK *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps. The following information is based on Soil Conservation Service STATSGO data.

Soil Component Name: URBAN LAND

Soil Surface Texture: variable

Hydrologic Group: Not reported

Soil Drainage Class: Not reported

Hydric Status: Soil does not meet the requirements for a hydric soil.

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 10 inches

Depth to Bedrock Max: > 10 inches

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Soil Layer Information							
	Boundary			Classification			
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil	Permeability Rate (in/hr)	Soil Reaction (pH)
1	0 inches	6 inches	variable	Not reported	Not reported	Max: 0.00 Min: 0.00	Max: 0.00 Min: 0.00

OTHER SOIL TYPES IN AREA

Based on Soil Conservation Service STATSGO data, the following additional subordinant soil types may appear within the general area of target property.

Soil Surface Textures: silt loam
loamy sand
sandy loam
fine sandy loam

Surficial Soil Types: silt loam
loamy sand
sandy loam
fine sandy loam

Shallow Soil Types: sandy loam

Deeper Soil Types: unweathered bedrock
very gravelly - loamy sand
stratified
sandy loam

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 0.001 miles
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

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FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
1	USGS40000829247	1/8 - 1/4 Mile West
2	USGS40000829283	1/8 - 1/4 Mile ENE
A3	USGS40000829232	1/8 - 1/4 Mile West
4	USGS40000829116	1/8 - 1/4 Mile SSW
B5	USGS40000829330	1/8 - 1/4 Mile ENE
B6	USGS40000829306	1/4 - 1/2 Mile ENE
A7	USGS40000829233	1/4 - 1/2 Mile West
8	USGS40000829234	1/4 - 1/2 Mile West
9	USGS40000829364	1/4 - 1/2 Mile WNW
10	USGS40000829202	1/4 - 1/2 Mile ESE
11	USGS40000829063	1/4 - 1/2 Mile SSW
C12	USGS40000829082	1/4 - 1/2 Mile SE
C13	USGS40000829101	1/4 - 1/2 Mile SE
D14	USGS40000829052	1/4 - 1/2 Mile SSW
E15	USGS40000829000	1/4 - 1/2 Mile South
D16	USGS40000829031	1/4 - 1/2 Mile SSW
D17	USGS40000829032	1/4 - 1/2 Mile SSW
F18	USGS40000829261	1/4 - 1/2 Mile West
F19	USGS40000829273	1/4 - 1/2 Mile West
20	USGS40000829001	1/4 - 1/2 Mile SSW
E21	USGS40000828957	1/2 - 1 Mile South
G22	USGS40000829002	1/2 - 1 Mile SSW
G23	USGS40000829003	1/2 - 1 Mile SSW
24	USGS40000829428	1/2 - 1 Mile ENE
25	USGS40000829291	1/2 - 1 Mile West
H26	USGS40000829385	1/2 - 1 Mile WNW
H27	USGS40000829386	1/2 - 1 Mile WNW
28	USGS40000829597	1/2 - 1 Mile NNW
I29	USGS40000829262	1/2 - 1 Mile West
30	USGS40000829655	1/2 - 1 Mile North
I31	USGS40000829242	1/2 - 1 Mile West
J32	USGS40000828894	1/2 - 1 Mile SE
J33	USGS40000828893	1/2 - 1 Mile SE
K34	USGS40000829706	1/2 - 1 Mile North
K35	USGS40000829722	1/2 - 1 Mile North
36	USGS40000829320	1/2 - 1 Mile West
37	USGS40000828836	1/2 - 1 Mile SSW
38	USGS40000828808	1/2 - 1 Mile SSW
39	USGS40000829528	1/2 - 1 Mile NW
40	USGS40000828781	1/2 - 1 Mile SSW
41	USGS40000829033	1/2 - 1 Mile WSW
42	USGS40000829791	1/2 - 1 Mile NNE
43	USGS40000828916	1/2 - 1 Mile SW

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

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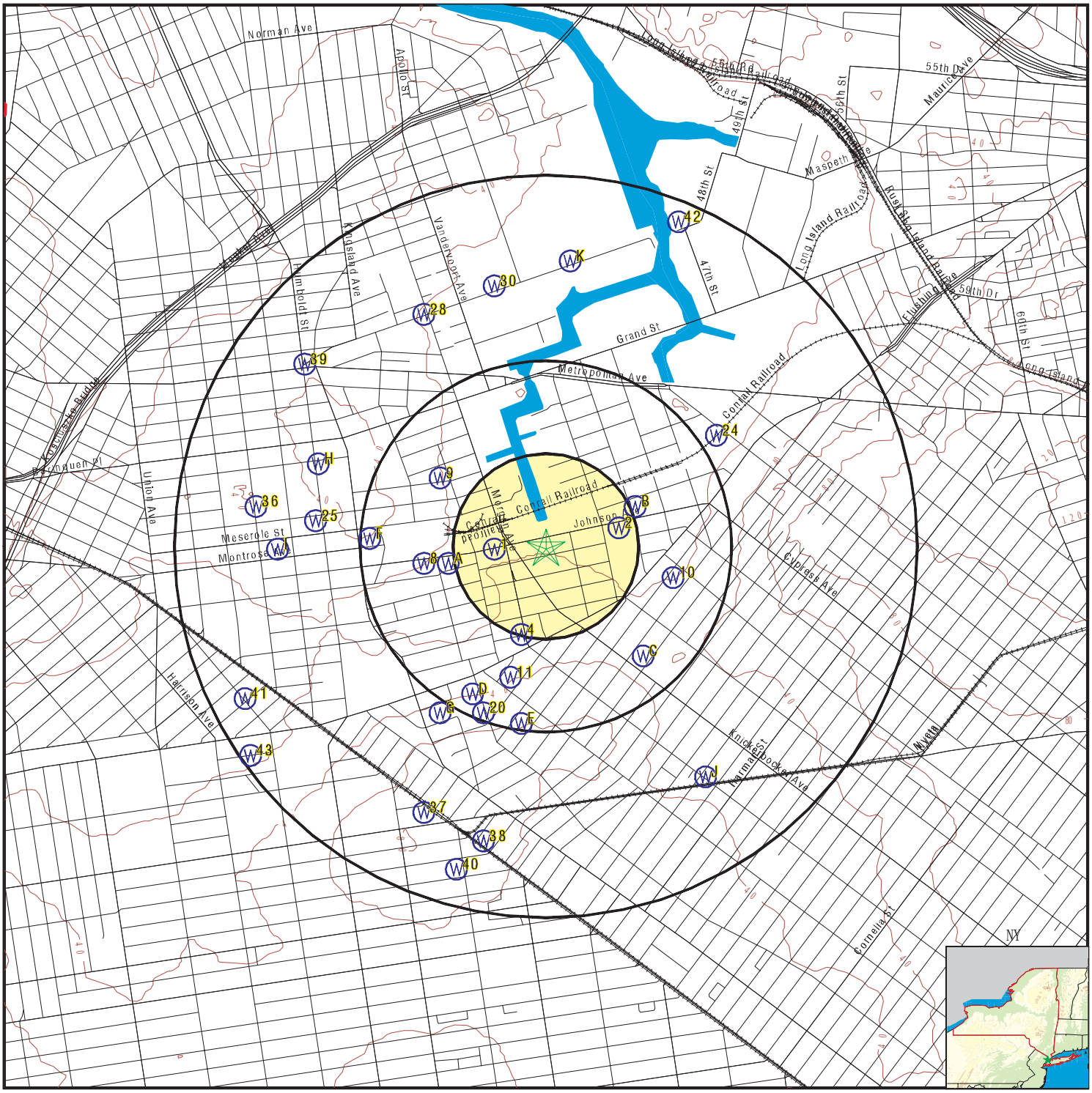
STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 5684962.2s



0 1/4 1/2 1 Miles

- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	450 Johnson Avenue	CLIENT:	Langan
ADDRESS:	450 Johnson Avenue Brooklyn NY 11237	CONTACT:	Andrew Kerr
		INQUIRY #:	5684962.2s
LAT/LONG:	40.707711 / 73.930274	DATE:	June 17, 2019 8:18 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

1
West
1/8 - 1/4 Mile
Lower

FED USGS **USGS40000829247**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 3111. 1	Type:	Well
Description:	0001	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Northern Atlantic Coastal Plain aquifer system		
Formation Type:	Glacial Aquifer, Upper	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	95
Well Hole Depth Units:	ft		

2
ENE
1/8 - 1/4 Mile
Lower

FED USGS **USGS40000829283**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 2598. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Northern Atlantic Coastal Plain aquifer system		
Formation Type:	Glacial Aquifer, Upper	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

A3
West
1/8 - 1/4 Mile
Lower

FED USGS **USGS40000829232**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 893. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	118	Well Hole Depth Units:	ft

4
SSW
1/8 - 1/4 Mile
Higher

FED USGS **USGS40000829116**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 894. 1	Type:	Well

Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	282	Well Hole Depth Units:	ft

B5
ENE **FED USGS** **USGS40000829330**
1/8 - 1/4 Mile
Lower

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 1990. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	70	Well Hole Depth Units:	ft

B6
ENE **FED USGS** **USGS40000829306**
1/4 - 1/2 Mile
Lower

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 1346. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	168	Well Hole Depth Units:	ft

A7
West **FED USGS** **USGS40000829233**
1/4 - 1/2 Mile
Lower

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 955. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	72	Well Hole Depth Units:	ft

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

8
West
1/4 - 1/2 Mile
Higher

FED USGS **USGS40000829234**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 1130. 1	Type:	Well
Description:	1301	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	89	Well Hole Depth Units:	ft

9
WNW
1/4 - 1/2 Mile
Higher

FED USGS **USGS40000829364**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 889. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Northern Atlantic Coastal Plain aquifer system		
Formation Type:	Glacial Aquifer, Upper	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	74
Well Depth Units:	ft	Well Hole Depth:	74
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	265	Level reading date:	1985-10-01
Feet below surface:	Not Reported	Feet to sea level:	3.53
Note:	Not Reported		

Level reading date:	1985-05-21	Feet below surface:	Not Reported
Feet to sea level:	4.48	Note:	Not Reported
Level reading date:	1984-12-18	Feet below surface:	Not Reported
Feet to sea level:	4.95	Note:	Not Reported
Level reading date:	1984-10-05	Feet below surface:	Not Reported
Feet to sea level:	5.16	Note:	Not Reported
Level reading date:	1984-06-27	Feet below surface:	Not Reported
Feet to sea level:	5.47	Note:	Not Reported
Level reading date:	1984-03-15	Feet below surface:	Not Reported
Feet to sea level:	5.13	Note:	Not Reported
Level reading date:	1984-01-05	Feet below surface:	Not Reported
Feet to sea level:	5.76	Note:	Not Reported
Level reading date:	1983-09-29	Feet below surface:	Not Reported
Feet to sea level:	4.96	Note:	Not Reported
Level reading date:	1983-06-29	Feet below surface:	Not Reported

Feet to sea level:	4.59	Note:	Not Reported
Level reading date:	1983-03-25	Feet below surface:	Not Reported
Feet to sea level:	3.96	Note:	Not Reported
Level reading date:	1982-12-21	Feet below surface:	Not Reported
Feet to sea level:	3.69	Note:	Not Reported
Level reading date:	1982-10-06	Feet below surface:	Not Reported
Feet to sea level:	3.86	Note:	Not Reported
Level reading date:	1982-06-30	Feet below surface:	Not Reported
Feet to sea level:	3.96	Note:	Not Reported
Level reading date:	1982-04-02	Feet below surface:	Not Reported
Feet to sea level:	4.19	Note:	Not Reported
Level reading date:	1981-12-29	Feet below surface:	Not Reported
Feet to sea level:	4.01	Note:	Not Reported
Level reading date:	1981-09-23	Feet below surface:	Not Reported
Feet to sea level:	4.10	Note:	Not Reported
Level reading date:	1981-06-24	Feet below surface:	Not Reported
Feet to sea level:	4.28	Note:	Not Reported
Level reading date:	1981-03-18	Feet below surface:	Not Reported
Feet to sea level:	5.36	Note:	Not Reported
Level reading date:	1980-12-30	Feet below surface:	Not Reported
Feet to sea level:	3.96	Note:	Not Reported
Level reading date:	1980-09-23	Feet below surface:	Not Reported
Feet to sea level:	5.06	Note:	Not Reported
Level reading date:	1980-06-24	Feet below surface:	Not Reported
Feet to sea level:	5.14	Note:	Not Reported
Level reading date:	1980-03-13	Feet below surface:	Not Reported
Feet to sea level:	4.02	Note:	Not Reported
Level reading date:	1979-12-18	Feet below surface:	Not Reported
Feet to sea level:	4.92	Note:	Not Reported
Level reading date:	1979-09-17	Feet below surface:	Not Reported
Feet to sea level:	4.57	Note:	Not Reported
Level reading date:	1979-06-28	Feet below surface:	Not Reported
Feet to sea level:	4.07	Note:	Not Reported
Level reading date:	1979-03-26	Feet below surface:	Not Reported
Feet to sea level:	5.46	Note:	Not Reported
Level reading date:	1978-12-22	Feet below surface:	Not Reported
Feet to sea level:	5.11	Note:	Not Reported
Level reading date:	1978-10-02	Feet below surface:	Not Reported
Feet to sea level:	5.94	Note:	Not Reported
Level reading date:	1978-06-23	Feet below surface:	Not Reported
Feet to sea level:	3.93	Note:	Not Reported

Level reading date:	1978-04-04	Feet below surface:	Not Reported
Feet to sea level:	4.06	Note:	Not Reported
Level reading date:	1978-01-03	Feet below surface:	Not Reported
Feet to sea level:	4.29	Note:	Not Reported
Level reading date:	1977-09-22	Feet below surface:	Not Reported
Feet to sea level:	3.81	Note:	Not Reported
Level reading date:	1977-07-07	Feet below surface:	Not Reported
Feet to sea level:	3.33	Note:	Not Reported
Level reading date:	1977-03-29	Feet below surface:	Not Reported
Feet to sea level:	2.60	Note:	Not Reported
Level reading date:	1976-12-22	Feet below surface:	Not Reported
Feet to sea level:	2.81	Note:	Not Reported
Level reading date:	1976-09-23	Feet below surface:	Not Reported
Feet to sea level:	3.25	Note:	Not Reported
Level reading date:	1976-07-09	Feet below surface:	Not Reported
Feet to sea level:	3.97	Note:	Not Reported
Level reading date:	1976-06-28	Feet below surface:	Not Reported
Feet to sea level:	3.21	Note:	Not Reported
Level reading date:	1976-03-23	Feet below surface:	Not Reported
Feet to sea level:	3.02	Note:	Not Reported
Level reading date:	1975-12-16	Feet below surface:	Not Reported
Feet to sea level:	3.17	Note:	Not Reported
Level reading date:	1975-10-07	Feet below surface:	Not Reported
Feet to sea level:	3.10	Note:	Not Reported
Level reading date:	1975-06-30	Feet below surface:	Not Reported
Feet to sea level:	2.80	Note:	Not Reported
Level reading date:	1975-03-26	Feet below surface:	Not Reported
Feet to sea level:	2.67	Note:	Not Reported
Level reading date:	1974-12-19	Feet below surface:	Not Reported
Feet to sea level:	1.99	Note:	Not Reported
Level reading date:	1974-09-04	Feet below surface:	Not Reported
Feet to sea level:	2.44	Note:	Not Reported
Level reading date:	1974-06-26	Feet below surface:	Not Reported
Feet to sea level:	2.58	Note:	Not Reported
Level reading date:	1974-03-19	Feet below surface:	Not Reported
Feet to sea level:	2.36	Note:	Not Reported
Level reading date:	1974-01-09	Feet below surface:	Not Reported
Feet to sea level:	2.26	Note:	Not Reported
Level reading date:	1973-09-24	Feet below surface:	Not Reported
Feet to sea level:	1.86	Note:	Not Reported
Level reading date:	1973-07-02	Feet below surface:	Not Reported
Feet to sea level:	2.22	Note:	Not Reported

Level reading date:	1973-04-03	Feet below surface:	Not Reported
Feet to sea level:	0.97	Note:	Not Reported
Level reading date:	1972-12-27	Feet below surface:	Not Reported
Feet to sea level:	1.70	Note:	Not Reported
Level reading date:	1972-10-02	Feet below surface:	Not Reported
Feet to sea level:	1.57	Note:	Not Reported
Level reading date:	1972-07-10	Feet below surface:	Not Reported
Feet to sea level:	1.94	Note:	Not Reported
Level reading date:	1972-03-28	Feet below surface:	Not Reported
Feet to sea level:	0.27	Note:	Not Reported
Level reading date:	1972-01-13	Feet below surface:	Not Reported
Feet to sea level:	0.44	Note:	Not Reported
Level reading date:	1971-09-27	Feet below surface:	Not Reported
Feet to sea level:	0.57	Note:	Not Reported
Level reading date:	1971-03-08	Feet below surface:	Not Reported
Feet to sea level:	1.08	Note:	Not Reported
Level reading date:	1970-11-02	Feet below surface:	Not Reported
Feet to sea level:	1.02	Note:	Not Reported
Level reading date:	1970-03-13	Feet below surface:	Not Reported
Feet to sea level:	1.52	Note:	Not Reported
Level reading date:	1969-11-12	Feet below surface:	Not Reported
Feet to sea level:	0.49	Note:	Not Reported
Level reading date:	1969-09-05	Feet below surface:	Not Reported
Feet to sea level:	0.24	Note:	Not Reported
Level reading date:	1969-04-23	Feet below surface:	Not Reported
Feet to sea level:	-0.34	Note:	Not Reported
Level reading date:	1968-11-06	Feet below surface:	Not Reported
Feet to sea level:	-3.34	Note:	Not Reported
Level reading date:	1968-04-22	Feet below surface:	Not Reported
Feet to sea level:	0.46	Note:	Not Reported
Level reading date:	1967-10-20	Feet below surface:	Not Reported
Feet to sea level:	-0.01	Note:	Not Reported
Level reading date:	1967-03-28	Feet below surface:	Not Reported
Feet to sea level:	-0.64	Note:	Not Reported
Level reading date:	1966-10-24	Feet below surface:	Not Reported
Feet to sea level:	-2.53	Note:	Not Reported
Level reading date:	1966-05-03	Feet below surface:	Not Reported
Feet to sea level:	-0.64	Note:	Not Reported
Level reading date:	1965-10-28	Feet below surface:	Not Reported
Feet to sea level:	-1.85	Note:	Not Reported
Level reading date:	1965-09-14	Feet below surface:	Not Reported
Feet to sea level:	-2.21	Note:	Not Reported

Level reading date:	1964-10-30	Feet below surface:	Not Reported
Feet to sea level:	-1.79	Note:	Not Reported
Level reading date:	1964-04-27	Feet below surface:	Not Reported
Feet to sea level:	-0.19	Note:	Not Reported
Level reading date:	1963-11-05	Feet below surface:	Not Reported
Feet to sea level:	-1.31	Note:	Not Reported
Level reading date:	1963-04-29	Feet below surface:	Not Reported
Feet to sea level:	-0.13	Note:	Not Reported
Level reading date:	1962-12-04	Feet below surface:	Not Reported
Feet to sea level:	-0.88	Note:	Not Reported
Level reading date:	1962-04-26	Feet below surface:	Not Reported
Feet to sea level:	-0.54	Note:	Not Reported
Level reading date:	1961-12-28	Feet below surface:	Not Reported
Feet to sea level:	-1.92	Note:	Not Reported
Level reading date:	1961-10-02	Feet below surface:	Not Reported
Feet to sea level:	-2.45	Note:	Not Reported
Level reading date:	1961-03-28	Feet below surface:	Not Reported
Feet to sea level:	-3.06	Note:	Not Reported
Level reading date:	1960-12-27	Feet below surface:	Not Reported
Feet to sea level:	-3.44	Note:	Not Reported
Level reading date:	1960-09-28	Feet below surface:	Not Reported
Feet to sea level:	-4.38	Note:	Not Reported
Level reading date:	1960-07-05	Feet below surface:	Not Reported
Feet to sea level:	-4.23	Note:	Not Reported
Level reading date:	1960-03-31	Feet below surface:	Not Reported
Feet to sea level:	-4.56	Note:	Not Reported
Level reading date:	1960-01-14	Feet below surface:	Not Reported
Feet to sea level:	-4.97	Note:	Not Reported
Level reading date:	1959-10-07	Feet below surface:	Not Reported
Feet to sea level:	-5.06	Note:	Not Reported
Level reading date:	1959-07-17	Feet below surface:	Not Reported
Feet to sea level:	-4.44	Note:	Not Reported
Level reading date:	1959-03-18	Feet below surface:	Not Reported
Feet to sea level:	-4.96	Note:	Not Reported
Level reading date:	1958-01-10	Feet below surface:	Not Reported
Feet to sea level:	-4.06	Note:	Not Reported
Level reading date:	1957-09-24	Feet below surface:	Not Reported
Feet to sea level:	-4.44	Note:	Not Reported
Level reading date:	1957-06-27	Feet below surface:	Not Reported
Feet to sea level:	-3.61	Note:	Not Reported
Level reading date:	1957-03-27	Feet below surface:	Not Reported
Feet to sea level:	-3.58	Note:	Not Reported

Level reading date:	1956-12-18	Feet below surface:	Not Reported
Feet to sea level:	-3.19	Note:	Not Reported
Level reading date:	1956-11-29	Feet below surface:	Not Reported
Feet to sea level:	-3.09	Note:	Not Reported
Level reading date:	1956-10-25	Feet below surface:	Not Reported
Feet to sea level:	-3.01	Note:	Not Reported
Level reading date:	1956-10-02	Feet below surface:	Not Reported
Feet to sea level:	-3.06	Note:	Not Reported
Level reading date:	1956-08-02	Feet below surface:	Not Reported
Feet to sea level:	-3.00	Note:	Not Reported
Level reading date:	1956-07-11	Feet below surface:	Not Reported
Feet to sea level:	-2.95	Note:	Not Reported
Level reading date:	1956-06-05	Feet below surface:	Not Reported
Feet to sea level:	-3.05	Note:	Not Reported
Level reading date:	1956-05-15	Feet below surface:	Not Reported
Feet to sea level:	-3.26	Note:	Not Reported
Level reading date:	1956-03-05	Feet below surface:	Not Reported
Feet to sea level:	-3.53	Note:	Not Reported
Level reading date:	1956-02-03	Feet below surface:	Not Reported
Feet to sea level:	-3.69	Note:	Not Reported
Level reading date:	1955-12-22	Feet below surface:	Not Reported
Feet to sea level:	-3.74	Note:	Not Reported
Level reading date:	1955-11-15	Feet below surface:	Not Reported
Feet to sea level:	-4.04	Note:	Not Reported
Level reading date:	1955-10-07	Feet below surface:	Not Reported
Feet to sea level:	-4.61	Note:	Not Reported
Level reading date:	1955-08-25	Feet below surface:	Not Reported
Feet to sea level:	-4.74	Note:	Not Reported
Level reading date:	1955-07-27	Feet below surface:	Not Reported
Feet to sea level:	-4.72	Note:	Not Reported
Level reading date:	1955-06-23	Feet below surface:	Not Reported
Feet to sea level:	-4.43	Note:	Not Reported
Level reading date:	1955-04-26	Feet below surface:	Not Reported
Feet to sea level:	-4.91	Note:	Not Reported
Level reading date:	1955-03-29	Feet below surface:	Not Reported
Feet to sea level:	-5.07	Note:	Not Reported
Level reading date:	1955-02-25	Feet below surface:	Not Reported
Feet to sea level:	-5.33	Note:	Not Reported
Level reading date:	1955-01-25	Feet below surface:	Not Reported
Feet to sea level:	-5.34	Note:	Not Reported
Level reading date:	1954-12-27	Feet below surface:	Not Reported
Feet to sea level:	-5.61	Note:	Not Reported

Level reading date:	1954-06-29	Feet below surface:	Not Reported
Feet to sea level:	-6.25	Note:	Not Reported
Level reading date:	1954-05-27	Feet below surface:	Not Reported
Feet to sea level:	-6.72	Note:	Not Reported
Level reading date:	1954-04-28	Feet below surface:	Not Reported
Feet to sea level:	-6.79	Note:	Not Reported
Level reading date:	1954-03-30	Feet below surface:	Not Reported
Feet to sea level:	-6.87	Note:	Not Reported
Level reading date:	1954-02-25	Feet below surface:	Not Reported
Feet to sea level:	-7.02	Note:	Not Reported
Level reading date:	1954-01-28	Feet below surface:	Not Reported
Feet to sea level:	-7.19	Note:	Not Reported
Level reading date:	1953-12-23	Feet below surface:	Not Reported
Feet to sea level:	-7.15	Note:	Not Reported
Level reading date:	1953-12-02	Feet below surface:	Not Reported
Feet to sea level:	-7.25	Note:	Not Reported
Level reading date:	1953-10-02	Feet below surface:	Not Reported
Feet to sea level:	-7.61	Note:	Not Reported
Level reading date:	1953-08-03	Feet below surface:	Not Reported
Feet to sea level:	-7.45	Note:	Not Reported
Level reading date:	1953-06-23	Feet below surface:	Not Reported
Feet to sea level:	-7.47	Note:	Not Reported
Level reading date:	1953-05-25	Feet below surface:	Not Reported
Feet to sea level:	-7.91	Note:	Not Reported
Level reading date:	1953-04-27	Feet below surface:	Not Reported
Feet to sea level:	-8.26	Note:	Not Reported
Level reading date:	1953-03-24	Feet below surface:	Not Reported
Feet to sea level:	-8.82	Note:	Not Reported
Level reading date:	1953-02-27	Feet below surface:	Not Reported
Feet to sea level:	-9.10	Note:	Not Reported
Level reading date:	1953-02-05	Feet below surface:	Not Reported
Feet to sea level:	-9.37	Note:	Not Reported
Level reading date:	1952-12-24	Feet below surface:	Not Reported
Feet to sea level:	-10.14	Note:	Not Reported
Level reading date:	1952-12-05	Feet below surface:	Not Reported
Feet to sea level:	-10.54	Note:	Not Reported
Level reading date:	1952-11-03	Feet below surface:	Not Reported
Feet to sea level:	-11.13	Note:	Not Reported
Level reading date:	1952-08-25	Feet below surface:	Not Reported
Feet to sea level:	-12.22	Note:	Not Reported
Level reading date:	1952-07-25	Feet below surface:	Not Reported
Feet to sea level:	-12.62	Note:	Not Reported

Level reading date:	1952-06-24	Feet below surface:	Not Reported
Feet to sea level:	-13.11	Note:	Not Reported
Level reading date:	1952-05-27	Feet below surface:	Not Reported
Feet to sea level:	-13.84	Note:	Not Reported
Level reading date:	1952-04-29	Feet below surface:	Not Reported
Feet to sea level:	-14.33	Note:	Not Reported
Level reading date:	1952-03-24	Feet below surface:	Not Reported
Feet to sea level:	-15.09	Note:	Not Reported
Level reading date:	1952-02-20	Feet below surface:	Not Reported
Feet to sea level:	-15.88	Note:	Not Reported
Level reading date:	1952-01-29	Feet below surface:	Not Reported
Feet to sea level:	-16.33	Note:	Not Reported
Level reading date:	1951-12-20	Feet below surface:	Not Reported
Feet to sea level:	-16.98	Note:	Not Reported
Level reading date:	1951-11-28	Feet below surface:	Not Reported
Feet to sea level:	-17.37	Note:	Not Reported
Level reading date:	1951-11-02	Feet below surface:	Not Reported
Feet to sea level:	-17.86	Note:	Not Reported
Level reading date:	1951-09-26	Feet below surface:	Not Reported
Feet to sea level:	-18.29	Note:	Not Reported
Level reading date:	1951-08-28	Feet below surface:	Not Reported
Feet to sea level:	-18.53	Note:	Not Reported
Level reading date:	1951-07-26	Feet below surface:	Not Reported
Feet to sea level:	-18.97	Note:	Not Reported
Level reading date:	1951-06-28	Feet below surface:	Not Reported
Feet to sea level:	-19.39	Note:	Not Reported
Level reading date:	1951-05-29	Feet below surface:	Not Reported
Feet to sea level:	-19.79	Note:	Not Reported
Level reading date:	1951-05-02	Feet below surface:	Not Reported
Feet to sea level:	-20.22	Note:	Not Reported
Level reading date:	1951-03-27	Feet below surface:	Not Reported
Feet to sea level:	-20.97	Note:	Not Reported
Level reading date:	1951-02-26	Feet below surface:	Not Reported
Feet to sea level:	-21.64	Note:	Not Reported
Level reading date:	1951-01-30	Feet below surface:	Not Reported
Feet to sea level:	-22.36	Note:	Not Reported
Level reading date:	1950-12-20	Feet below surface:	Not Reported
Feet to sea level:	-24.01	Note:	Not Reported
Level reading date:	1950-11-28	Feet below surface:	Not Reported
Feet to sea level:	-24.60	Note:	Not Reported
Level reading date:	1950-10-31	Feet below surface:	Not Reported
Feet to sea level:	-24.76	Note:	Not Reported

Level reading date:	1950-09-27	Feet below surface:	Not Reported
Feet to sea level:	-24.78	Note:	Not Reported
Level reading date:	1950-08-29	Feet below surface:	Not Reported
Feet to sea level:	-24.63	Note:	Not Reported
Level reading date:	1950-07-27	Feet below surface:	Not Reported
Feet to sea level:	-24.48	Note:	Not Reported
Level reading date:	1950-06-29	Feet below surface:	Not Reported
Feet to sea level:	-24.52	Note:	Not Reported
Level reading date:	1950-06-05	Feet below surface:	Not Reported
Feet to sea level:	-24.63	Note:	Not Reported
Level reading date:	1950-04-27	Feet below surface:	Not Reported
Feet to sea level:	-24.97	Note:	Not Reported
Level reading date:	1950-03-29	Feet below surface:	Not Reported
Feet to sea level:	-24.90	Note:	Not Reported
Level reading date:	1950-03-01	Feet below surface:	Not Reported
Feet to sea level:	-25.44	Note:	Not Reported
Level reading date:	1950-01-26	Feet below surface:	Not Reported
Feet to sea level:	-25.69	Note:	Not Reported
Level reading date:	1949-12-28	Feet below surface:	Not Reported
Feet to sea level:	-25.78	Note:	Not Reported
Level reading date:	1949-11-28	Feet below surface:	Not Reported
Feet to sea level:	-25.76	Note:	Not Reported
Level reading date:	1949-10-31	Feet below surface:	Not Reported
Feet to sea level:	-25.53	Note:	Not Reported
Level reading date:	1949-09-28	Feet below surface:	Not Reported
Feet to sea level:	-25.59	Note:	Not Reported
Level reading date:	1949-08-31	Feet below surface:	Not Reported
Feet to sea level:	-25.62	Note:	Not Reported
Level reading date:	1949-07-28	Feet below surface:	Not Reported
Feet to sea level:	-25.72	Note:	Not Reported
Level reading date:	1949-06-30	Feet below surface:	Not Reported
Feet to sea level:	-25.89	Note:	Not Reported
Level reading date:	1949-06-01	Feet below surface:	Not Reported
Feet to sea level:	-26.02	Note:	Not Reported
Level reading date:	1949-04-28	Feet below surface:	Not Reported
Feet to sea level:	-26.14	Note:	Not Reported
Level reading date:	1949-04-05	Feet below surface:	Not Reported
Feet to sea level:	-26.39	Note:	Not Reported
Level reading date:	1949-02-23	Feet below surface:	Not Reported
Feet to sea level:	-27.08	Note:	Not Reported
Level reading date:	1949-01-27	Feet below surface:	Not Reported
Feet to sea level:	-27.47	Note:	Not Reported

Level reading date:	1948-12-28	Feet below surface:	Not Reported
Feet to sea level:	-27.87	Note:	Not Reported
Level reading date:	1948-12-14	Feet below surface:	Not Reported
Feet to sea level:	-28.03	Note:	Not Reported
Level reading date:	1948-11-04	Feet below surface:	Not Reported
Feet to sea level:	-28.60	Note:	Not Reported
Level reading date:	1948-10-06	Feet below surface:	Not Reported
Feet to sea level:	-28.94	Note:	Not Reported
Level reading date:	1948-08-30	Feet below surface:	Not Reported
Feet to sea level:	-29.46	Note:	Not Reported
Level reading date:	1948-07-26	Feet below surface:	Not Reported
Feet to sea level:	-30.22	Note:	Not Reported
Level reading date:	1948-06-30	Feet below surface:	Not Reported
Feet to sea level:	-30.77	Note:	Not Reported
Level reading date:	1948-06-02	Feet below surface:	Not Reported
Feet to sea level:	-31.35	Note:	Not Reported
Level reading date:	1948-04-27	Feet below surface:	Not Reported
Feet to sea level:	-32.12	Note:	Not Reported
Level reading date:	1948-03-26	Feet below surface:	Not Reported
Feet to sea level:	-32.84	Note:	Not Reported
Level reading date:	1948-03-02	Feet below surface:	Not Reported
Feet to sea level:	-33.43	Note:	Not Reported
Level reading date:	1948-02-03	Feet below surface:	Not Reported
Feet to sea level:	-34.37	Note:	Not Reported
Level reading date:	1948-01-07	Feet below surface:	Not Reported
Feet to sea level:	-35.55	Note:	Not Reported
Level reading date:	1947-12-17	Feet below surface:	Not Reported
Feet to sea level:	-35.93	Note:	Not Reported
Level reading date:	1947-11-26	Feet below surface:	Not Reported
Feet to sea level:	-36.76	Note:	Not Reported
Level reading date:	1947-11-20	Feet below surface:	Not Reported
Feet to sea level:	-36.87	Note:	Not Reported
Level reading date:	1947-10-31	Feet below surface:	Not Reported
Feet to sea level:	-37.15	Note:	Not Reported
Level reading date:	1947-10-14	Feet below surface:	Not Reported
Feet to sea level:	-37.22	Note:	Not Reported
Level reading date:	1947-10-07	Feet below surface:	Not Reported
Feet to sea level:	-37.17	Note:	Not Reported
Level reading date:	1947-09-30	Feet below surface:	Not Reported
Feet to sea level:	-37.13	Note:	Not Reported
Level reading date:	1947-09-16	Feet below surface:	Not Reported
Feet to sea level:	-37.00	Note:	Not Reported

Level reading date:	1947-08-27	Feet below surface:	Not Reported
Feet to sea level:	-36.56	Note:	Not Reported
Level reading date:	1947-08-13	Feet below surface:	Not Reported
Feet to sea level:	-36.15	Note:	Not Reported
Level reading date:	1947-07-30	Feet below surface:	Not Reported
Feet to sea level:	-35.58	Note:	Not Reported
Level reading date:	1947-07-23	Feet below surface:	Not Reported
Feet to sea level:	-35.29	Note:	Not Reported
Level reading date:	1947-07-16	Feet below surface:	Not Reported
Feet to sea level:	-35.21	Note:	Not Reported
Level reading date:	1947-07-07	Feet below surface:	Not Reported
Feet to sea level:	-35.95	Note:	Not Reported
Level reading date:	1947-07-02	Feet below surface:	Not Reported
Feet to sea level:	-36.46	Note:	Not Reported
Level reading date:	1947-07-01	Feet below surface:	Not Reported
Feet to sea level:	-36.32	Note:	Not Reported
Level reading date:	1947-06-30	Feet below surface:	Not Reported
Feet to sea level:	-36.69	Note:	Not Reported
Level reading date:	1947-06-24	Feet below surface:	Not Reported
Feet to sea level:	-37.12	Note:	Not Reported
Level reading date:	1947-06-20	Feet below surface:	Not Reported
Feet to sea level:	-37.16	Note:	Not Reported
Level reading date:	1947-06-13	Feet below surface:	Not Reported
Feet to sea level:	-37.06	Note:	Not Reported
Level reading date:	1947-06-06	Feet below surface:	Not Reported
Feet to sea level:	-36.95	Note:	Not Reported
Level reading date:	1947-05-29	Feet below surface:	Not Reported
Feet to sea level:	-36.78	Note:	Not Reported
Level reading date:	1947-05-23	Feet below surface:	Not Reported
Feet to sea level:	-36.63	Note:	Not Reported
Level reading date:	1947-05-17	Feet below surface:	Not Reported
Feet to sea level:	-36.47	Note:	Not Reported
Level reading date:	1947-05-16	Feet below surface:	Not Reported
Feet to sea level:	-36.41	Note:	Not Reported
Level reading date:	1947-05-10	Feet below surface:	Not Reported
Feet to sea level:	-35.93	Note:	Not Reported
Level reading date:	1947-05-03	Feet below surface:	Not Reported
Feet to sea level:	-35.89	Note:	Not Reported
Level reading date:	1947-04-26	Feet below surface:	Not Reported
Feet to sea level:	-35.43	Note:	Not Reported
Level reading date:	1947-04-19	Feet below surface:	Not Reported
Feet to sea level:	-35.17	Note:	Not Reported

Level reading date:	1947-04-18	Feet below surface:	Not Reported
Feet to sea level:	-35.09	Note:	Not Reported
Level reading date:	1947-03-29	Feet below surface:	Not Reported
Feet to sea level:	-33.64	Note:	Not Reported
Level reading date:	1947-03-22	Feet below surface:	Not Reported
Feet to sea level:	-33.32	Note:	Not Reported
Level reading date:	1947-03-08	Feet below surface:	Not Reported
Feet to sea level:	-34.08	Note:	Not Reported
Level reading date:	1947-03-01	Feet below surface:	Not Reported
Feet to sea level:	-35.65	Note:	Not Reported
Level reading date:	1947-02-22	Feet below surface:	Not Reported
Feet to sea level:	-36.06	Note:	Not Reported
Level reading date:	1947-02-15	Feet below surface:	Not Reported
Feet to sea level:	-36.93	Note:	Not Reported
Level reading date:	1947-02-08	Feet below surface:	Not Reported
Feet to sea level:	-37.58	Note:	Not Reported
Level reading date:	1947-02-01	Feet below surface:	Not Reported
Feet to sea level:	-38.31	Note:	Not Reported
Level reading date:	1947-01-25	Feet below surface:	Not Reported
Feet to sea level:	-39.01	Note:	Not Reported
Level reading date:	1947-01-18	Feet below surface:	Not Reported
Feet to sea level:	-37.73	Note:	Not Reported
Level reading date:	1947-01-10	Feet below surface:	Not Reported
Feet to sea level:	-37.61	Note:	Not Reported
Level reading date:	1946-10-19	Feet below surface:	Not Reported
Feet to sea level:	-31.90	Note:	Not Reported
Level reading date:	1946-10-12	Feet below surface:	Not Reported
Feet to sea level:	-27.83	Note:	Not Reported
Level reading date:	1946-10-05	Feet below surface:	Not Reported
Feet to sea level:	-20.51	Note:	Not Reported
Level reading date:	1946-09-23	Feet below surface:	Not Reported
Feet to sea level:	-36.25	Note:	Not Reported
Level reading date:	1946-09-16	Feet below surface:	Not Reported
Feet to sea level:	-37.75	Note:	Not Reported
Level reading date:	1946-08-30	Feet below surface:	Not Reported
Feet to sea level:	-38.35	Note:	Not Reported
Level reading date:	1946-08-19	Feet below surface:	Not Reported
Feet to sea level:	-38.17	Note:	Not Reported
Level reading date:	1946-07-30	Feet below surface:	Not Reported
Feet to sea level:	-37.69	Note:	Not Reported
Level reading date:	1946-07-08	Feet below surface:	Not Reported
Feet to sea level:	-37.25	Note:	Not Reported

Level reading date:	1946-06-10	Feet below surface:	Not Reported
Feet to sea level:	-36.63	Note:	Not Reported
Level reading date:	1946-05-27	Feet below surface:	Not Reported
Feet to sea level:	-36.17	Note:	Not Reported
Level reading date:	1946-05-20	Feet below surface:	Not Reported
Feet to sea level:	-35.97	Note:	Not Reported
Level reading date:	1946-05-13	Feet below surface:	Not Reported
Feet to sea level:	-35.55	Note:	Not Reported
Level reading date:	1946-05-06	Feet below surface:	Not Reported
Feet to sea level:	-35.32	Note:	Not Reported
Level reading date:	1946-04-29	Feet below surface:	Not Reported
Feet to sea level:	-35.07	Note:	Not Reported
Level reading date:	1946-04-22	Feet below surface:	Not Reported
Feet to sea level:	-35.31	Note:	Not Reported
Level reading date:	1946-04-15	Feet below surface:	Not Reported
Feet to sea level:	-35.44	Note:	Not Reported
Level reading date:	1946-04-08	Feet below surface:	Not Reported
Feet to sea level:	-35.56	Note:	Not Reported
Level reading date:	1946-04-01	Feet below surface:	Not Reported
Feet to sea level:	-35.67	Note:	Not Reported
Level reading date:	1946-03-25	Feet below surface:	Not Reported
Feet to sea level:	-35.66	Note:	Not Reported
Level reading date:	1946-03-18	Feet below surface:	Not Reported
Feet to sea level:	-35.80	Note:	Not Reported
Level reading date:	1946-03-11	Feet below surface:	Not Reported
Feet to sea level:	-35.79	Note:	Not Reported
Level reading date:	1946-03-04	Feet below surface:	Not Reported
Feet to sea level:	-35.75	Note:	Not Reported
Level reading date:	1946-02-25	Feet below surface:	Not Reported
Feet to sea level:	-35.66	Note:	Not Reported
Level reading date:	1946-02-18	Feet below surface:	Not Reported
Feet to sea level:	-35.67	Note:	Not Reported
Level reading date:	1946-02-11	Feet below surface:	Not Reported
Feet to sea level:	-35.61	Note:	Not Reported
Level reading date:	1946-01-08	Feet below surface:	Not Reported
Feet to sea level:	-35.07	Note:	Not Reported
Level reading date:	1945-12-03	Feet below surface:	Not Reported
Feet to sea level:	-34.78	Note:	Not Reported
Level reading date:	1945-11-06	Feet below surface:	Not Reported
Feet to sea level:	-34.30	Note:	Not Reported
Level reading date:	1945-09-28	Feet below surface:	Not Reported
Feet to sea level:	-33.23	Note:	Not Reported

Level reading date:	1945-09-12	Feet below surface:	Not Reported
Feet to sea level:	-32.54	Note:	Not Reported
Level reading date:	1945-08-08	Feet below surface:	Not Reported
Feet to sea level:	-30.12	Note:	Not Reported
Level reading date:	1945-07-23	Feet below surface:	Not Reported
Feet to sea level:	-30.27	Note:	Not Reported
Level reading date:	1945-07-03	Feet below surface:	Not Reported
Feet to sea level:	-30.41	Note:	Not Reported
Level reading date:	1945-06-04	Feet below surface:	Not Reported
Feet to sea level:	-30.46	Note:	Not Reported

10
ESE
1/4 - 1/2 Mile
Higher

FED USGS **USGS40000829202**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 2568. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	100	Well Hole Depth Units:	ft

11
SSW
1/4 - 1/2 Mile
Higher

FED USGS **USGS40000829063**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 87. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	160	Well Depth Units:	ft
Well Hole Depth:	Not Reported	Well Hole Depth Units:	Not Reported

Ground water levels,Number of Measurements:	184	Level reading date:	1941-05-31
Feet below surface:	Not Reported	Feet to sea level:	-9.41
Note:	Not Reported		
Level reading date:	1941-05-24	Feet below surface:	Not Reported
Feet to sea level:	-9.39	Note:	Not Reported
Level reading date:	1941-05-17	Feet below surface:	Not Reported
Feet to sea level:	-9.36	Note:	Not Reported
Level reading date:	1941-05-10	Feet below surface:	Not Reported
Feet to sea level:	-9.36	Note:	Not Reported

Level reading date:	1941-05-03	Feet below surface:	Not Reported
Feet to sea level:	-9.32	Note:	Not Reported
Level reading date:	1941-04-26	Feet below surface:	Not Reported
Feet to sea level:	-9.30	Note:	Not Reported
Level reading date:	1941-04-19	Feet below surface:	Not Reported
Feet to sea level:	-9.27	Note:	Not Reported
Level reading date:	1941-04-12	Feet below surface:	Not Reported
Feet to sea level:	-9.27	Note:	Not Reported
Level reading date:	1941-04-05	Feet below surface:	Not Reported
Feet to sea level:	-9.25	Note:	Not Reported
Level reading date:	1941-03-29	Feet below surface:	Not Reported
Feet to sea level:	-9.25	Note:	Not Reported
Level reading date:	1941-03-22	Feet below surface:	Not Reported
Feet to sea level:	-9.24	Note:	Not Reported
Level reading date:	1941-03-15	Feet below surface:	Not Reported
Feet to sea level:	-9.24	Note:	Not Reported
Level reading date:	1941-03-08	Feet below surface:	Not Reported
Feet to sea level:	-9.22	Note:	Not Reported
Level reading date:	1941-03-01	Feet below surface:	Not Reported
Feet to sea level:	-9.22	Note:	Not Reported
Level reading date:	1941-02-22	Feet below surface:	Not Reported
Feet to sea level:	-9.22	Note:	Not Reported
Level reading date:	1941-02-15	Feet below surface:	Not Reported
Feet to sea level:	-9.22	Note:	Not Reported
Level reading date:	1941-02-08	Feet below surface:	Not Reported
Feet to sea level:	-9.22	Note:	Not Reported
Level reading date:	1941-02-01	Feet below surface:	Not Reported
Feet to sea level:	-9.23	Note:	Not Reported
Level reading date:	1941-01-25	Feet below surface:	Not Reported
Feet to sea level:	-9.23	Note:	Not Reported
Level reading date:	1941-01-18	Feet below surface:	Not Reported
Feet to sea level:	-9.24	Note:	Not Reported
Level reading date:	1941-01-11	Feet below surface:	Not Reported
Feet to sea level:	-9.24	Note:	Not Reported
Level reading date:	1941-01-04	Feet below surface:	Not Reported
Feet to sea level:	-9.26	Note:	Not Reported
Level reading date:	1940-12-28	Feet below surface:	Not Reported
Feet to sea level:	-9.25	Note:	Not Reported
Level reading date:	1940-12-21	Feet below surface:	Not Reported
Feet to sea level:	-9.24	Note:	Not Reported
Level reading date:	1940-12-14	Feet below surface:	Not Reported
Feet to sea level:	-9.20	Note:	Not Reported

Level reading date:	1940-12-07	Feet below surface:	Not Reported
Feet to sea level:	-9.19	Note:	Not Reported
Level reading date:	1940-11-30	Feet below surface:	Not Reported
Feet to sea level:	-9.16	Note:	Not Reported
Level reading date:	1940-11-23	Feet below surface:	Not Reported
Feet to sea level:	-9.13	Note:	Not Reported
Level reading date:	1940-11-16	Feet below surface:	Not Reported
Feet to sea level:	-9.13	Note:	Not Reported
Level reading date:	1940-11-09	Feet below surface:	Not Reported
Feet to sea level:	-9.10	Note:	Not Reported
Level reading date:	1940-11-02	Feet below surface:	Not Reported
Feet to sea level:	-9.05	Note:	Not Reported
Level reading date:	1940-10-26	Feet below surface:	Not Reported
Feet to sea level:	-9.03	Note:	Not Reported
Level reading date:	1940-10-19	Feet below surface:	Not Reported
Feet to sea level:	-8.98	Note:	Not Reported
Level reading date:	1940-10-12	Feet below surface:	Not Reported
Feet to sea level:	-8.92	Note:	Not Reported
Level reading date:	1940-10-05	Feet below surface:	Not Reported
Feet to sea level:	-8.91	Note:	Not Reported
Level reading date:	1940-09-28	Feet below surface:	Not Reported
Feet to sea level:	-8.88	Note:	Not Reported
Level reading date:	1940-09-21	Feet below surface:	Not Reported
Feet to sea level:	-8.82	Note:	Not Reported
Level reading date:	1940-09-14	Feet below surface:	Not Reported
Feet to sea level:	-8.74	Note:	Not Reported
Level reading date:	1940-09-07	Feet below surface:	Not Reported
Feet to sea level:	-8.67	Note:	Not Reported
Level reading date:	1940-08-31	Feet below surface:	Not Reported
Feet to sea level:	-8.51	Note:	Not Reported
Level reading date:	1940-08-24	Feet below surface:	Not Reported
Feet to sea level:	-8.55	Note:	Not Reported
Level reading date:	1940-08-17	Feet below surface:	Not Reported
Feet to sea level:	-8.44	Note:	Not Reported
Level reading date:	1940-08-10	Feet below surface:	Not Reported
Feet to sea level:	-8.50	Note:	Not Reported
Level reading date:	1940-08-03	Feet below surface:	Not Reported
Feet to sea level:	-8.34	Note:	Not Reported
Level reading date:	1940-07-20	Feet below surface:	Not Reported
Feet to sea level:	-8.86	Note:	Not Reported
Level reading date:	1940-07-13	Feet below surface:	Not Reported
Feet to sea level:	-8.70	Note:	Not Reported

Level reading date:	1940-07-06	Feet below surface:	Not Reported
Feet to sea level:	-8.72	Note:	Not Reported
Level reading date:	1940-06-29	Feet below surface:	Not Reported
Feet to sea level:	-7.98	Note:	Not Reported
Level reading date:	1940-06-22	Feet below surface:	Not Reported
Feet to sea level:	-8.45	Note:	Not Reported
Level reading date:	1940-06-15	Feet below surface:	Not Reported
Feet to sea level:	-8.10	Note:	Not Reported
Level reading date:	1940-06-08	Feet below surface:	Not Reported
Feet to sea level:	-7.91	Note:	Not Reported
Level reading date:	1940-06-01	Feet below surface:	Not Reported
Feet to sea level:	-7.83	Note:	Not Reported
Level reading date:	1940-05-25	Feet below surface:	Not Reported
Feet to sea level:	-7.79	Note:	Not Reported
Level reading date:	1940-05-18	Feet below surface:	Not Reported
Feet to sea level:	-7.78	Note:	Not Reported
Level reading date:	1940-05-11	Feet below surface:	Not Reported
Feet to sea level:	-7.77	Note:	Not Reported
Level reading date:	1940-05-04	Feet below surface:	Not Reported
Feet to sea level:	-7.75	Note:	Not Reported
Level reading date:	1940-04-27	Feet below surface:	Not Reported
Feet to sea level:	-7.73	Note:	Not Reported
Level reading date:	1940-04-20	Feet below surface:	Not Reported
Feet to sea level:	-7.72	Note:	Not Reported
Level reading date:	1940-04-13	Feet below surface:	Not Reported
Feet to sea level:	-7.69	Note:	Not Reported
Level reading date:	1940-04-06	Feet below surface:	Not Reported
Feet to sea level:	-7.60	Note:	Not Reported
Level reading date:	1940-03-30	Feet below surface:	Not Reported
Feet to sea level:	-7.69	Note:	Not Reported
Level reading date:	1940-03-23	Feet below surface:	Not Reported
Feet to sea level:	-7.71	Note:	Not Reported
Level reading date:	1940-03-16	Feet below surface:	Not Reported
Feet to sea level:	-7.69	Note:	Not Reported
Level reading date:	1940-03-09	Feet below surface:	Not Reported
Feet to sea level:	-7.71	Note:	Not Reported
Level reading date:	1940-03-02	Feet below surface:	Not Reported
Feet to sea level:	-7.68	Note:	Not Reported
Level reading date:	1940-02-24	Feet below surface:	Not Reported
Feet to sea level:	-7.71	Note:	Not Reported
Level reading date:	1940-02-17	Feet below surface:	Not Reported
Feet to sea level:	-7.69	Note:	Not Reported

Level reading date:	1940-02-10	Feet below surface:	Not Reported
Feet to sea level:	-8.44	Note:	Not Reported
Level reading date:	1940-02-03	Feet below surface:	Not Reported
Feet to sea level:	-8.47	Note:	Not Reported
Level reading date:	1940-01-27	Feet below surface:	Not Reported
Feet to sea level:	-8.37	Note:	Not Reported
Level reading date:	1940-01-20	Feet below surface:	Not Reported
Feet to sea level:	-8.43	Note:	Not Reported
Level reading date:	1940-01-13	Feet below surface:	Not Reported
Feet to sea level:	-8.51	Note:	Not Reported
Level reading date:	1940-01-06	Feet below surface:	Not Reported
Feet to sea level:	-8.73	Note:	Not Reported
Level reading date:	1939-12-30	Feet below surface:	Not Reported
Feet to sea level:	-8.58	Note:	Not Reported
Level reading date:	1939-12-23	Feet below surface:	Not Reported
Feet to sea level:	-8.73	Note:	Not Reported
Level reading date:	1939-12-16	Feet below surface:	Not Reported
Feet to sea level:	-8.77	Note:	Not Reported
Level reading date:	1939-12-09	Feet below surface:	Not Reported
Feet to sea level:	-8.56	Note:	Not Reported
Level reading date:	1939-12-02	Feet below surface:	Not Reported
Feet to sea level:	-8.70	Note:	Not Reported
Level reading date:	1939-11-25	Feet below surface:	Not Reported
Feet to sea level:	-8.92	Note:	Not Reported
Level reading date:	1939-11-18	Feet below surface:	Not Reported
Feet to sea level:	-9.02	Note:	Not Reported
Level reading date:	1939-11-11	Feet below surface:	Not Reported
Feet to sea level:	-8.91	Note:	Not Reported
Level reading date:	1939-11-04	Feet below surface:	Not Reported
Feet to sea level:	-8.93	Note:	Not Reported
Level reading date:	1939-10-28	Feet below surface:	Not Reported
Feet to sea level:	-8.98	Note:	Not Reported
Level reading date:	1939-10-21	Feet below surface:	Not Reported
Feet to sea level:	-8.92	Note:	Not Reported
Level reading date:	1939-10-14	Feet below surface:	Not Reported
Feet to sea level:	-8.98	Note:	Not Reported
Level reading date:	1939-10-07	Feet below surface:	Not Reported
Feet to sea level:	-8.82	Note:	Not Reported
Level reading date:	1939-09-30	Feet below surface:	Not Reported
Feet to sea level:	-8.87	Note:	Not Reported
Level reading date:	1939-09-23	Feet below surface:	Not Reported
Feet to sea level:	-7.99	Note:	Not Reported

Level reading date:	1939-09-16	Feet below surface:	Not Reported
Feet to sea level:	-7.92	Note:	Not Reported
Level reading date:	1939-09-08	Feet below surface:	Not Reported
Feet to sea level:	-7.87	Note:	Not Reported
Level reading date:	1939-09-01	Feet below surface:	Not Reported
Feet to sea level:	-7.82	Note:	Not Reported
Level reading date:	1939-08-25	Feet below surface:	Not Reported
Feet to sea level:	-7.76	Note:	Not Reported
Level reading date:	1939-08-18	Feet below surface:	Not Reported
Feet to sea level:	-7.70	Note:	Not Reported
Level reading date:	1939-08-11	Feet below surface:	Not Reported
Feet to sea level:	-7.63	Note:	Not Reported
Level reading date:	1939-08-04	Feet below surface:	Not Reported
Feet to sea level:	-7.60	Note:	Not Reported
Level reading date:	1939-07-28	Feet below surface:	Not Reported
Feet to sea level:	-7.53	Note:	Not Reported
Level reading date:	1939-07-07	Feet below surface:	Not Reported
Feet to sea level:	-7.33	Note:	Not Reported
Level reading date:	1939-06-30	Feet below surface:	Not Reported
Feet to sea level:	-7.33	Note:	Not Reported
Level reading date:	1939-06-23	Feet below surface:	Not Reported
Feet to sea level:	-7.33	Note:	Not Reported
Level reading date:	1939-06-16	Feet below surface:	Not Reported
Feet to sea level:	-7.36	Note:	Not Reported
Level reading date:	1939-06-09	Feet below surface:	Not Reported
Feet to sea level:	-7.38	Note:	Not Reported
Level reading date:	1939-06-02	Feet below surface:	Not Reported
Feet to sea level:	-7.39	Note:	Not Reported
Level reading date:	1939-05-26	Feet below surface:	Not Reported
Feet to sea level:	-7.41	Note:	Not Reported
Level reading date:	1939-05-19	Feet below surface:	Not Reported
Feet to sea level:	-7.45	Note:	Not Reported
Level reading date:	1939-05-12	Feet below surface:	Not Reported
Feet to sea level:	-7.48	Note:	Not Reported
Level reading date:	1939-05-05	Feet below surface:	Not Reported
Feet to sea level:	-7.46	Note:	Not Reported
Level reading date:	1939-04-28	Feet below surface:	Not Reported
Feet to sea level:	-7.48	Note:	Not Reported
Level reading date:	1939-04-21	Feet below surface:	Not Reported
Feet to sea level:	-7.48	Note:	Not Reported
Level reading date:	1939-04-15	Feet below surface:	Not Reported
Feet to sea level:	-7.50	Note:	Not Reported

Level reading date:	1939-04-08	Feet below surface:	Not Reported
Feet to sea level:	-7.52	Note:	Not Reported
Level reading date:	1939-03-31	Feet below surface:	Not Reported
Feet to sea level:	-7.61	Note:	Not Reported
Level reading date:	1939-03-24	Feet below surface:	Not Reported
Feet to sea level:	-7.69	Note:	Not Reported
Level reading date:	1939-03-17	Feet below surface:	Not Reported
Feet to sea level:	-7.69	Note:	Not Reported
Level reading date:	1939-03-10	Feet below surface:	Not Reported
Feet to sea level:	-7.63	Note:	Not Reported
Level reading date:	1939-03-03	Feet below surface:	Not Reported
Feet to sea level:	-7.92	Note:	Not Reported
Level reading date:	1939-02-24	Feet below surface:	Not Reported
Feet to sea level:	-7.70	Note:	Not Reported
Level reading date:	1939-02-17	Feet below surface:	Not Reported
Feet to sea level:	-7.72	Note:	Not Reported
Level reading date:	1939-02-10	Feet below surface:	Not Reported
Feet to sea level:	-7.74	Note:	Not Reported
Level reading date:	1939-02-03	Feet below surface:	Not Reported
Feet to sea level:	-7.79	Note:	Not Reported
Level reading date:	1939-01-27	Feet below surface:	Not Reported
Feet to sea level:	-7.85	Note:	Not Reported
Level reading date:	1939-01-20	Feet below surface:	Not Reported
Feet to sea level:	-7.86	Note:	Not Reported
Level reading date:	1939-01-13	Feet below surface:	Not Reported
Feet to sea level:	-7.89	Note:	Not Reported
Level reading date:	1939-01-06	Feet below surface:	Not Reported
Feet to sea level:	-7.93	Note:	Not Reported
Level reading date:	1938-12-30	Feet below surface:	Not Reported
Feet to sea level:	-7.95	Note:	Not Reported
Level reading date:	1938-12-23	Feet below surface:	Not Reported
Feet to sea level:	-8.00	Note:	Not Reported
Level reading date:	1938-12-16	Feet below surface:	Not Reported
Feet to sea level:	-8.03	Note:	Not Reported
Level reading date:	1938-12-09	Feet below surface:	Not Reported
Feet to sea level:	-8.07	Note:	Not Reported
Level reading date:	1938-12-02	Feet below surface:	Not Reported
Feet to sea level:	-8.13	Note:	Not Reported
Level reading date:	1938-11-25	Feet below surface:	Not Reported
Feet to sea level:	-8.13	Note:	Not Reported
Level reading date:	1938-11-18	Feet below surface:	Not Reported
Feet to sea level:	-8.17	Note:	Not Reported

Level reading date:	1938-11-11	Feet below surface:	Not Reported
Feet to sea level:	-8.16	Note:	Not Reported
Level reading date:	1938-11-04	Feet below surface:	Not Reported
Feet to sea level:	-8.21	Note:	Not Reported
Level reading date:	1938-10-28	Feet below surface:	Not Reported
Feet to sea level:	-8.22	Note:	Not Reported
Level reading date:	1938-10-21	Feet below surface:	Not Reported
Feet to sea level:	-8.24	Note:	Not Reported
Level reading date:	1938-10-14	Feet below surface:	Not Reported
Feet to sea level:	-8.27	Note:	Not Reported
Level reading date:	1938-10-07	Feet below surface:	Not Reported
Feet to sea level:	-8.29	Note:	Not Reported
Level reading date:	1938-09-30	Feet below surface:	Not Reported
Feet to sea level:	-8.33	Note:	Not Reported
Level reading date:	1938-09-23	Feet below surface:	Not Reported
Feet to sea level:	-8.36	Note:	Not Reported
Level reading date:	1938-09-16	Feet below surface:	Not Reported
Feet to sea level:	-8.38	Note:	Not Reported
Level reading date:	1938-09-09	Feet below surface:	Not Reported
Feet to sea level:	-8.36	Note:	Not Reported
Level reading date:	1938-09-02	Feet below surface:	Not Reported
Feet to sea level:	-8.34	Note:	Not Reported
Level reading date:	1938-08-26	Feet below surface:	Not Reported
Feet to sea level:	-8.28	Note:	Not Reported
Level reading date:	1938-08-19	Feet below surface:	Not Reported
Feet to sea level:	-8.26	Note:	Not Reported
Level reading date:	1938-08-12	Feet below surface:	Not Reported
Feet to sea level:	-8.22	Note:	Not Reported
Level reading date:	1938-08-05	Feet below surface:	Not Reported
Feet to sea level:	-8.18	Note:	Not Reported
Level reading date:	1938-07-29	Feet below surface:	Not Reported
Feet to sea level:	-8.13	Note:	Not Reported
Level reading date:	1938-07-22	Feet below surface:	Not Reported
Feet to sea level:	-8.08	Note:	Not Reported
Level reading date:	1938-07-15	Feet below surface:	Not Reported
Feet to sea level:	-8.08	Note:	Not Reported
Level reading date:	1938-07-08	Feet below surface:	Not Reported
Feet to sea level:	-8.00	Note:	Not Reported
Level reading date:	1938-07-01	Feet below surface:	Not Reported
Feet to sea level:	-7.96	Note:	Not Reported
Level reading date:	1938-06-25	Feet below surface:	Not Reported
Feet to sea level:	-7.93	Note:	Not Reported

Level reading date:	1938-06-18	Feet below surface:	Not Reported
Feet to sea level:	-7.86	Note:	Not Reported
Level reading date:	1938-06-11	Feet below surface:	Not Reported
Feet to sea level:	-7.83	Note:	Not Reported
Level reading date:	1938-06-04	Feet below surface:	Not Reported
Feet to sea level:	-7.82	Note:	Not Reported
Level reading date:	1938-05-28	Feet below surface:	Not Reported
Feet to sea level:	-7.77	Note:	Not Reported
Level reading date:	1938-05-21	Feet below surface:	Not Reported
Feet to sea level:	-7.76	Note:	Not Reported
Level reading date:	1938-05-14	Feet below surface:	Not Reported
Feet to sea level:	-7.74	Note:	Not Reported
Level reading date:	1938-05-07	Feet below surface:	Not Reported
Feet to sea level:	-7.74	Note:	Not Reported
Level reading date:	1938-04-30	Feet below surface:	Not Reported
Feet to sea level:	-7.72	Note:	Not Reported
Level reading date:	1938-04-23	Feet below surface:	Not Reported
Feet to sea level:	-7.71	Note:	Not Reported
Level reading date:	1938-04-16	Feet below surface:	Not Reported
Feet to sea level:	-7.68	Note:	Not Reported
Level reading date:	1938-04-09	Feet below surface:	Not Reported
Feet to sea level:	-7.66	Note:	Not Reported
Level reading date:	1938-04-02	Feet below surface:	Not Reported
Feet to sea level:	-7.67	Note:	Not Reported
Level reading date:	1938-03-26	Feet below surface:	Not Reported
Feet to sea level:	-7.67	Note:	Not Reported
Level reading date:	1938-03-19	Feet below surface:	Not Reported
Feet to sea level:	-7.69	Note:	Not Reported
Level reading date:	1938-03-12	Feet below surface:	Not Reported
Feet to sea level:	-7.71	Note:	Not Reported
Level reading date:	1938-03-05	Feet below surface:	Not Reported
Feet to sea level:	-7.73	Note:	Not Reported
Level reading date:	1938-02-26	Feet below surface:	Not Reported
Feet to sea level:	-7.76	Note:	Not Reported
Level reading date:	1938-02-19	Feet below surface:	Not Reported
Feet to sea level:	-7.79	Note:	Not Reported
Level reading date:	1938-02-12	Feet below surface:	Not Reported
Feet to sea level:	-7.83	Note:	Not Reported
Level reading date:	1938-02-04	Feet below surface:	Not Reported
Feet to sea level:	-7.84	Note:	Not Reported
Level reading date:	1938-01-28	Feet below surface:	Not Reported
Feet to sea level:	-7.89	Note:	Not Reported

Level reading date:	1938-01-21	Feet below surface:	Not Reported
Feet to sea level:	-7.91	Note:	Not Reported
Level reading date:	1938-01-14	Feet below surface:	Not Reported
Feet to sea level:	-7.93	Note:	Not Reported
Level reading date:	1938-01-07	Feet below surface:	Not Reported
Feet to sea level:	-7.99	Note:	Not Reported
Level reading date:	1937-12-31	Feet below surface:	Not Reported
Feet to sea level:	-8.02	Note:	Not Reported
Level reading date:	1937-12-24	Feet below surface:	Not Reported
Feet to sea level:	-8.04	Note:	Not Reported
Level reading date:	1937-12-18	Feet below surface:	Not Reported
Feet to sea level:	-8.06	Note:	Not Reported
Level reading date:	1937-12-11	Feet below surface:	Not Reported
Feet to sea level:	-8.13	Note:	Not Reported
Level reading date:	1937-12-04	Feet below surface:	Not Reported
Feet to sea level:	-8.13	Note:	Not Reported
Level reading date:	1937-11-27	Feet below surface:	Not Reported
Feet to sea level:	-8.18	Note:	Not Reported
Level reading date:	1937-11-20	Feet below surface:	Not Reported
Feet to sea level:	-8.23	Note:	Not Reported
Level reading date:	1937-11-13	Feet below surface:	Not Reported
Feet to sea level:	-8.23	Note:	Not Reported
Level reading date:	1937-11-08	Feet below surface:	Not Reported
Feet to sea level:	-8.25	Note:	Not Reported

C12
SE
1/4 - 1/2 Mile
Higher

FED USGS **USGS40000829082**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 1575. 1	Type:	Well
Description:	3401	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	85	Well Hole Depth Units:	ft

C13
SE
1/4 - 1/2 Mile
Higher

FED USGS **USGS40000829101**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 1576. 1	Type:	Well
Description:	Not Reported	HUC:	02030201

Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	68	Well Depth Units:	ft
Well Hole Depth:	Not Reported	Well Hole Depth Units:	Not Reported

Ground water levels,Number of Measurements:	22	Level reading date:	1969-04-23
Feet below surface:	Not Reported	Feet to sea level:	2.13
Note:	Not Reported		

Level reading date:	1968-11-06	Feet below surface:	Not Reported
Feet to sea level:	-1.59	Note:	Not Reported
Level reading date:	1968-04-22	Feet below surface:	Not Reported
Feet to sea level:	2.68	Note:	Not Reported
Level reading date:	1967-10-20	Feet below surface:	Not Reported
Feet to sea level:	1.81	Note:	Not Reported
Level reading date:	1967-03-28	Feet below surface:	Not Reported
Feet to sea level:	1.37	Note:	Not Reported
Level reading date:	1966-10-24	Feet below surface:	Not Reported
Feet to sea level:	-0.39	Note:	Not Reported
Level reading date:	1966-05-03	Feet below surface:	Not Reported
Feet to sea level:	1.92	Note:	Not Reported
Level reading date:	1965-09-15	Feet below surface:	Not Reported
Feet to sea level:	-0.04	Note:	Not Reported
Level reading date:	1965-05-03	Feet below surface:	Not Reported
Feet to sea level:	0.89	Note:	Not Reported
Level reading date:	1964-10-30	Feet below surface:	Not Reported
Feet to sea level:	0.55	Note:	Not Reported
Level reading date:	1964-04-27	Feet below surface:	Not Reported
Feet to sea level:	2.46	Note:	Not Reported
Level reading date:	1963-04-11	Feet below surface:	Not Reported
Feet to sea level:	2.69	Note:	Not Reported
Level reading date:	1962-04-26	Feet below surface:	Not Reported
Feet to sea level:	2.64	Note:	Not Reported
Level reading date:	1961-12-27	Feet below surface:	Not Reported
Feet to sea level:	1.13	Note:	Not Reported
Level reading date:	1961-01-09	Feet below surface:	Not Reported
Feet to sea level:	-0.69	Note:	Not Reported
Level reading date:	1960-01-14	Feet below surface:	Not Reported
Feet to sea level:	-0.81	Note:	Not Reported
Level reading date:	1959-03-18	Feet below surface:	Not Reported
Feet to sea level:	-1.83	Note:	Not Reported
Level reading date:	1957-03-15	Feet below surface:	Not Reported
Feet to sea level:	-1.50	Note:	Not Reported

Level reading date:	1953-01-13	Feet below surface:	Not Reported
Feet to sea level:	-8.08	Note:	Not Reported
Level reading date:	1952-01-02	Feet below surface:	Not Reported
Feet to sea level:	-14.55	Note:	Not Reported
Level reading date:	1950-12-12	Feet below surface:	Not Reported
Feet to sea level:	-17.74	Note:	Not Reported
Level reading date:	1949-12-16	Feet below surface:	Not Reported
Feet to sea level:	-19.23	Note:	Not Reported

D14
SSW
1/4 - 1/2 Mile
Higher

FED USGS **USGS40000829052**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 36. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Northern Atlantic Coastal Plain aquifer system		
Formation Type:	Glacial Aquifer, Upper	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	115
Well Hole Depth Units:	ft		

E15
South
1/4 - 1/2 Mile
Higher

FED USGS **USGS40000829000**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 1031. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	Not Reported	Well Hole Depth Units:	Not Reported

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D16
SSW
1/4 - 1/2 Mile
Higher

FED USGS **USGS40000829031**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 1153. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Northern Atlantic Coastal Plain aquifer system		
Formation Type:	Glacial Aquifer, Upper	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	Not Reported
Well Depth Units:	Not Reported	Well Hole Depth:	103

Well Hole Depth Units: ft

D17
SSW
1/4 - 1/2 Mile
Higher

FED USGS **USGS40000829032**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 1273. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	275	Well Hole Depth Units:	ft

F18
West
1/4 - 1/2 Mile
Higher

FED USGS **USGS40000829261**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 37. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	130	Well Hole Depth Units:	ft

F19
West
1/4 - 1/2 Mile
Higher

FED USGS **USGS40000829273**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 1490. 1	Type:	Well
Description:	2301	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	135	Well Hole Depth Units:	ft

20
SSW
1/4 - 1/2 Mile
Higher

FED USGS **USGS40000829001**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 1336. 1	Type:	Well

Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	163	Well Hole Depth Units:	ft

E21
South
1/2 - 1 Mile
Higher

FED USGS **USGS40000828957**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 887. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	125	Well Hole Depth Units:	ft

G22
SSW
1/2 - 1 Mile
Higher

FED USGS **USGS40000829002**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 2136. 1	Type:	Well
Description:	1001	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	112	Well Hole Depth Units:	ft

G23
SSW
1/2 - 1 Mile
Higher

FED USGS **USGS40000829003**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 236. 1	Type:	Well
Description:	1008	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	130	Well Depth Units:	ft
Well Hole Depth:	130	Well Hole Depth Units:	ft

Ground water levels,Number of Measurements:	52	Level reading date:	1954-12-17
Feet below surface:	Not Reported	Feet to sea level:	-8.30

Note:	Not Reported		
Level reading date:	1954-06-29	Feet below surface:	Not Reported
Feet to sea level:	-9.31	Note:	Not Reported
Level reading date:	1954-05-27	Feet below surface:	Not Reported
Feet to sea level:	-8.45	Note:	Not Reported
Level reading date:	1954-04-28	Feet below surface:	Not Reported
Feet to sea level:	-10.08	Note:	Not Reported
Level reading date:	1954-03-30	Feet below surface:	Not Reported
Feet to sea level:	-9.85	Note:	Not Reported
Level reading date:	1954-02-25	Feet below surface:	Not Reported
Feet to sea level:	-9.49	Note:	Not Reported
Level reading date:	1954-01-28	Feet below surface:	Not Reported
Feet to sea level:	-10.11	Note:	Not Reported
Level reading date:	1953-12-23	Feet below surface:	Not Reported
Feet to sea level:	-10.76	Note:	Not Reported
Level reading date:	1953-12-02	Feet below surface:	Not Reported
Feet to sea level:	-10.78	Note:	Not Reported
Level reading date:	1953-10-28	Feet below surface:	Not Reported
Feet to sea level:	-10.03	Note:	Not Reported
Level reading date:	1953-10-02	Feet below surface:	Not Reported
Feet to sea level:	-11.58	Note:	Not Reported
Level reading date:	1953-08-28	Feet below surface:	Not Reported
Feet to sea level:	-11.23	Note:	Not Reported
Level reading date:	1953-08-03	Feet below surface:	Not Reported
Feet to sea level:	-11.25	Note:	Not Reported
Level reading date:	1953-06-24	Feet below surface:	Not Reported
Feet to sea level:	-10.48	Note:	Not Reported
Level reading date:	1953-05-25	Feet below surface:	Not Reported
Feet to sea level:	-10.59	Note:	Not Reported
Level reading date:	1953-04-27	Feet below surface:	Not Reported
Feet to sea level:	-11.85	Note:	Not Reported
Level reading date:	1953-03-24	Feet below surface:	Not Reported
Feet to sea level:	-12.38	Note:	Not Reported
Level reading date:	1953-02-27	Feet below surface:	Not Reported
Feet to sea level:	-12.18	Note:	Not Reported
Level reading date:	1953-02-05	Feet below surface:	Not Reported
Feet to sea level:	-12.68	Note:	Not Reported
Level reading date:	1952-12-24	Feet below surface:	Not Reported
Feet to sea level:	-12.74	Note:	Not Reported
Level reading date:	1952-12-05	Feet below surface:	Not Reported
Feet to sea level:	-12.60	Note:	Not Reported

Level reading date:	1952-11-03	Feet below surface:	Not Reported
Feet to sea level:	-13.70	Note:	Not Reported
Level reading date:	1952-09-23	Feet below surface:	Not Reported
Feet to sea level:	-16.95	Note:	Not Reported
Level reading date:	1952-08-25	Feet below surface:	Not Reported
Feet to sea level:	-16.73	Note:	Not Reported
Level reading date:	1952-07-23	Feet below surface:	Not Reported
Feet to sea level:	-17.79	Note:	Not Reported
Level reading date:	1952-06-24	Feet below surface:	Not Reported
Feet to sea level:	-17.05	Note:	Not Reported
Level reading date:	1952-05-27	Feet below surface:	Not Reported
Feet to sea level:	-17.69	Note:	Not Reported
Level reading date:	1952-04-29	Feet below surface:	Not Reported
Feet to sea level:	-19.03	Note:	Not Reported
Level reading date:	1952-03-24	Feet below surface:	Not Reported
Feet to sea level:	-19.20	Note:	Not Reported
Level reading date:	1952-02-20	Feet below surface:	Not Reported
Feet to sea level:	-20.10	Note:	Not Reported
Level reading date:	1952-01-29	Feet below surface:	Not Reported
Feet to sea level:	-20.88	Note:	Not Reported
Level reading date:	1951-12-20	Feet below surface:	Not Reported
Feet to sea level:	-22.55	Note:	Not Reported
Level reading date:	1951-11-28	Feet below surface:	Not Reported
Feet to sea level:	-22.59	Note:	Not Reported
Level reading date:	1951-09-26	Feet below surface:	Not Reported
Feet to sea level:	-24.85	Note:	Not Reported
Level reading date:	1951-08-28	Feet below surface:	Not Reported
Feet to sea level:	-25.66	Note:	Not Reported
Level reading date:	1951-07-26	Feet below surface:	Not Reported
Feet to sea level:	-25.95	Note:	Not Reported
Level reading date:	1951-06-28	Feet below surface:	Not Reported
Feet to sea level:	-25.47	Note:	Not Reported
Level reading date:	1951-05-29	Feet below surface:	Not Reported
Feet to sea level:	-26.24	Note:	Not Reported
Level reading date:	1951-05-02	Feet below surface:	Not Reported
Feet to sea level:	-26.53	Note:	Not Reported
Level reading date:	1951-03-27	Feet below surface:	Not Reported
Feet to sea level:	-26.63	Note:	Not Reported
Level reading date:	1951-02-26	Feet below surface:	Not Reported
Feet to sea level:	-26.78	Note:	Not Reported
Level reading date:	1951-01-30	Feet below surface:	Not Reported
Feet to sea level:	-27.90	Note:	Not Reported

Level reading date:	1950-12-20	Feet below surface:	Not Reported
Feet to sea level:	-28.49	Note:	Not Reported
Level reading date:	1950-11-28	Feet below surface:	Not Reported
Feet to sea level:	-28.00	Note:	Not Reported
Level reading date:	1950-10-31	Feet below surface:	Not Reported
Feet to sea level:	-27.98	Note:	Not Reported
Level reading date:	1950-09-27	Feet below surface:	Not Reported
Feet to sea level:	-29.66	Note:	Not Reported
Level reading date:	1950-08-29	Feet below surface:	Not Reported
Feet to sea level:	-29.53	Note:	Not Reported
Level reading date:	1950-07-27	Feet below surface:	Not Reported
Feet to sea level:	-29.04	Note:	Not Reported
Level reading date:	1950-06-29	Feet below surface:	Not Reported
Feet to sea level:	-27.59	Note:	Not Reported
Level reading date:	1950-06-05	Feet below surface:	Not Reported
Feet to sea level:	-26.28	Note:	Not Reported
Level reading date:	1950-04-27	Feet below surface:	Not Reported
Feet to sea level:	-28.80	Note:	Not Reported
Level reading date:	1950-03-29	Feet below surface:	Not Reported
Feet to sea level:	-28.80	Note:	Not Reported

24
ENE
1/2 - 1 Mile
Lower

FED USGS **USGS40000829428**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	Q 1947. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Northern Atlantic Coastal Plain aquifer system		
Formation Type:	Glacial Aquifer, Upper	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	83
Well Depth Units:	ft	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

25
West
1/2 - 1 Mile
Higher

FED USGS **USGS40000829291**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 426. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported

Well Hole Depth:	140	Well Hole Depth Units:	ft

H26
WNW
1/2 - 1 Mile
Higher

FED USGS **USGS40000829385**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 1283. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	240	Well Hole Depth Units:	ft

H27
WNW
1/2 - 1 Mile
Higher

FED USGS **USGS40000829386**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 724. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	137	Well Hole Depth Units:	ft

28
NNW
1/2 - 1 Mile
Higher

FED USGS **USGS40000829597**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 677. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	215	Well Hole Depth Units:	ft

I29
West
1/2 - 1 Mile
Higher

FED USGS **USGS40000829262**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 2533. 1	Type:	Well

Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	92	Well Hole Depth Units:	ft

30
North
1/2 - 1 Mile
Lower

FED USGS **USGS40000829655**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 569. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	190	Well Hole Depth Units:	ft

I31
West
1/2 - 1 Mile
Higher

FED USGS **USGS40000829242**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 637. 1	Type:	Well
Description:	4101	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	212	Well Hole Depth Units:	ft

J32
SE
1/2 - 1 Mile
Higher

FED USGS **USGS40000828894**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 3245. 2	Type:	Well
Description:	WILSON AVE. AND STANHOPE ST., BUSHWICK		
HUC:	02030201	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported		
Aquifer:	Northern Atlantic Coastal Plain aquifer system		
Formation Type:	Glacial Aquifer, Upper	Aquifer Type:	Unconfined single aquifer
Construction Date:	20001019	Well Depth:	21.9
Well Depth Units:	ft	Well Hole Depth:	21.9
Well Hole Depth Units:	ft		

Ground water levels,Number of Measurements:	47	Level reading date:	2005-02-15
Feet below surface:	Not Reported	Feet to sea level:	13.06
Note:	Not Reported		

Level reading date:	2005-01-21	Feet below surface:	Not Reported
Feet to sea level:	12.11	Note:	Not Reported
Level reading date:	2004-12-15	Feet below surface:	Not Reported
Feet to sea level:	12.19	Note:	Not Reported
Level reading date:	2004-11-23	Feet below surface:	Not Reported
Feet to sea level:	12.28	Note:	Not Reported
Level reading date:	2004-10-21	Feet below surface:	Not Reported
Feet to sea level:	12.55	Note:	Not Reported
Level reading date:	2004-09-21	Feet below surface:	Not Reported
Feet to sea level:	12.58	Note:	Not Reported
Level reading date:	2004-08-25	Feet below surface:	Not Reported
Feet to sea level:	12.53	Note:	Not Reported
Level reading date:	2004-07-19	Feet below surface:	Not Reported
Feet to sea level:	12.36	Note:	Not Reported
Level reading date:	2004-06-16	Feet below surface:	Not Reported
Feet to sea level:	12.15	Note:	Not Reported
Level reading date:	2004-05-25	Feet below surface:	Not Reported
Feet to sea level:	12.16	Note:	Not Reported
Level reading date:	2004-04-29	Feet below surface:	Not Reported
Feet to sea level:	12.13	Note:	Not Reported
Level reading date:	2004-02-25	Feet below surface:	Not Reported
Feet to sea level:	12.04	Note:	Not Reported
Level reading date:	2003-12-18	Feet below surface:	Not Reported
Feet to sea level:	11.85	Note:	Not Reported
Level reading date:	2003-11-25	Feet below surface:	Not Reported
Feet to sea level:	11.82	Note:	Not Reported
Level reading date:	2003-10-29	Feet below surface:	Not Reported
Feet to sea level:	11.75	Note:	Not Reported
Level reading date:	2003-09-24	Feet below surface:	Not Reported
Feet to sea level:	11.80	Note:	Not Reported
Level reading date:	2003-08-25	Feet below surface:	Not Reported
Feet to sea level:	11.75	Note:	Not Reported
Level reading date:	2003-07-21	Feet below surface:	Not Reported
Feet to sea level:	11.41	Note:	Not Reported
Level reading date:	2003-06-25	Feet below surface:	Not Reported
Feet to sea level:	11.07	Note:	Not Reported
Level reading date:	2003-05-19	Feet below surface:	Not Reported
Feet to sea level:	10.40	Note:	Not Reported
Level reading date:	2003-04-28	Feet below surface:	Not Reported

Feet to sea level:	10.41	Note:	Not Reported
Level reading date:	2003-02-27	Feet below surface:	Not Reported
Feet to sea level:	10.56	Note:	Not Reported
Level reading date:	2003-01-28	Feet below surface:	Not Reported
Feet to sea level:	10.83	Note:	Not Reported
Level reading date:	2002-12-27	Feet below surface:	Not Reported
Feet to sea level:	10.97	Note:	Not Reported
Level reading date:	2002-11-26	Feet below surface:	Not Reported
Feet to sea level:	11.15	Note:	Not Reported
Level reading date:	2002-10-21	Feet below surface:	Not Reported
Feet to sea level:	11.19	Note:	Not Reported
Level reading date:	2002-09-25	Feet below surface:	Not Reported
Feet to sea level:	11.04	Note:	Not Reported
Level reading date:	2002-08-27	Feet below surface:	Not Reported
Feet to sea level:	10.77	Note:	Not Reported
Level reading date:	2002-07-22	Feet below surface:	Not Reported
Feet to sea level:	10.82	Note:	Not Reported
Level reading date:	2002-06-18	Feet below surface:	Not Reported
Feet to sea level:	10.83	Note:	Not Reported
Level reading date:	2002-04-24	Feet below surface:	Not Reported
Feet to sea level:	10.81	Note:	Not Reported
Level reading date:	2002-02-27	Feet below surface:	Not Reported
Feet to sea level:	11.00	Note:	Not Reported
Level reading date:	2002-01-28	Feet below surface:	Not Reported
Feet to sea level:	11.10	Note:	Not Reported
Level reading date:	2001-12-28	Feet below surface:	Not Reported
Feet to sea level:	11.27	Note:	Not Reported
Level reading date:	2001-11-15	Feet below surface:	Not Reported
Feet to sea level:	11.51	Note:	Not Reported
Level reading date:	2001-10-24	Feet below surface:	Not Reported
Feet to sea level:	11.64	Note:	Not Reported
Level reading date:	2001-09-26	Feet below surface:	Not Reported
Feet to sea level:	11.71	Note:	Not Reported
Level reading date:	2001-08-29	Feet below surface:	Not Reported
Feet to sea level:	11.83	Note:	Not Reported
Level reading date:	2001-07-24	Feet below surface:	Not Reported
Feet to sea level:	11.78	Note:	Not Reported
Level reading date:	2001-06-28	Feet below surface:	Not Reported
Feet to sea level:	11.84	Note:	Not Reported
Level reading date:	2001-05-24	Feet below surface:	Not Reported
Feet to sea level:	11.86	Note:	Not Reported

Level reading date:	2001-04-25	Feet below surface:	Not Reported
Feet to sea level:	11.92	Note:	Not Reported
Level reading date:	2001-02-22	Feet below surface:	Not Reported
Feet to sea level:	11.42	Note:	Not Reported
Level reading date:	2001-01-17	Feet below surface:	Not Reported
Feet to sea level:	11.43	Note:	Not Reported
Level reading date:	2000-12-19	Feet below surface:	Not Reported
Feet to sea level:	11.55	Note:	Not Reported
Level reading date:	2000-11-28	Feet below surface:	Not Reported
Feet to sea level:	11.64	Note:	Not Reported
Level reading date:	2000-10-24	Feet below surface:	Not Reported
Feet to sea level:	11.79	Note:	Not Reported

J33
SE
1/2 - 1 Mile
Higher

FED USGS **USGS40000828893**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 3245. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Northern Atlantic Coastal Plain aquifer system		
Formation Type:	Glacial Aquifer, Upper	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	24
Well Depth Units:	ft	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

Ground water levels,Number of Measurements:	148	Level reading date:	2000-09-27
Feet below surface:	Not Reported	Feet to sea level:	6.92
Note:	Not Reported		
Level reading date:	2000-08-24	Feet below surface:	Not Reported
Feet to sea level:	6.94	Note:	Not Reported
Level reading date:	2000-07-27	Feet below surface:	Not Reported
Feet to sea level:	6.96	Note:	Not Reported
Level reading date:	2000-06-28	Feet below surface:	Not Reported
Feet to sea level:	6.83	Note:	Not Reported
Level reading date:	2000-05-23	Feet below surface:	Not Reported
Feet to sea level:	6.65	Note:	Not Reported
Level reading date:	2000-04-27	Feet below surface:	Not Reported
Feet to sea level:	6.61	Note:	Not Reported
Level reading date:	2000-03-23	Feet below surface:	Not Reported
Feet to sea level:	6.61	Note:	Not Reported
Level reading date:	2000-02-29	Feet below surface:	Not Reported
Feet to sea level:	6.51	Note:	Not Reported
Level reading date:	1999-12-13	Feet below surface:	Not Reported

Feet to sea level:	6.69	Note:	Not Reported
Level reading date:	1999-11-23	Feet below surface:	Not Reported
Feet to sea level:	6.79	Note:	Not Reported
Level reading date:	1999-10-19	Feet below surface:	Not Reported
Feet to sea level:	6.82	Note:	Not Reported
Level reading date:	1999-09-23	Feet below surface:	Not Reported
Feet to sea level:	7.01	Note:	Not Reported
Level reading date:	1999-08-17	Feet below surface:	Not Reported
Feet to sea level:	6.99	Note:	Not Reported
Level reading date:	1999-07-20	Feet below surface:	Not Reported
Feet to sea level:	7.03	Note:	Not Reported
Level reading date:	1999-06-24	Feet below surface:	Not Reported
Feet to sea level:	7.02	Note:	Not Reported
Level reading date:	1999-05-18	Feet below surface:	Not Reported
Feet to sea level:	7.06	Note:	Not Reported
Level reading date:	1999-04-28	Feet below surface:	Not Reported
Feet to sea level:	7.07	Note:	Not Reported
Level reading date:	1999-03-23	Feet below surface:	Not Reported
Feet to sea level:	7.11	Note:	Not Reported
Level reading date:	1999-03-02	Feet below surface:	Not Reported
Feet to sea level:	7.13	Note:	Not Reported
Level reading date:	1999-01-27	Feet below surface:	Not Reported
Feet to sea level:	7.17	Note:	Not Reported
Level reading date:	1998-11-24	Feet below surface:	Not Reported
Feet to sea level:	7.36	Note:	Not Reported
Level reading date:	1998-09-29	Feet below surface:	Not Reported
Feet to sea level:	7.84	Note:	Not Reported
Level reading date:	1998-09-01	Feet below surface:	Not Reported
Feet to sea level:	7.95	Note:	Not Reported
Level reading date:	1998-07-28	Feet below surface:	Not Reported
Feet to sea level:	8.17	Note:	Not Reported
Level reading date:	1998-06-10	Feet below surface:	Not Reported
Feet to sea level:	8.19	Note:	Not Reported
Level reading date:	1998-05-20	Feet below surface:	Not Reported
Feet to sea level:	8.24	Note:	Not Reported
Level reading date:	1998-04-29	Feet below surface:	Not Reported
Feet to sea level:	7.83	Note:	Not Reported
Level reading date:	1998-01-29	Feet below surface:	Not Reported
Feet to sea level:	7.39	Note:	Not Reported
Level reading date:	1997-12-17	Feet below surface:	Not Reported
Feet to sea level:	7.30	Note:	Not Reported

Level reading date:	1997-11-26	Feet below surface:	Not Reported
Feet to sea level:	7.36	Note:	Not Reported
Level reading date:	1997-11-05	Feet below surface:	Not Reported
Feet to sea level:	7.34	Note:	Not Reported
Level reading date:	1997-09-29	Feet below surface:	Not Reported
Feet to sea level:	7.64	Note:	Not Reported
Level reading date:	1997-07-23	Feet below surface:	Not Reported
Feet to sea level:	7.47	Note:	Not Reported
Level reading date:	1997-06-26	Feet below surface:	Not Reported
Feet to sea level:	7.52	Note:	Not Reported
Level reading date:	1997-05-29	Feet below surface:	Not Reported
Feet to sea level:	7.28	Note:	Not Reported
Level reading date:	1997-03-18	Feet below surface:	Not Reported
Feet to sea level:	7.32	Note:	Not Reported
Level reading date:	1997-02-28	Feet below surface:	Not Reported
Feet to sea level:	7.27	Note:	Not Reported
Level reading date:	1997-01-24	Feet below surface:	Not Reported
Feet to sea level:	7.26	Note:	Not Reported
Level reading date:	1997-01-07	Feet below surface:	Not Reported
Feet to sea level:	7.36	Note:	Not Reported
Level reading date:	1996-09-19	Feet below surface:	Not Reported
Feet to sea level:	6.80	Note:	Not Reported
Level reading date:	1996-03-13	Feet below surface:	Not Reported
Feet to sea level:	6.57	Note:	Not Reported
Level reading date:	1996-01-23	Feet below surface:	Not Reported
Feet to sea level:	6.23	Note:	Not Reported
Level reading date:	1995-11-28	Feet below surface:	Not Reported
Feet to sea level:	6.25	Note:	Not Reported
Level reading date:	1995-09-26	Feet below surface:	Not Reported
Feet to sea level:	6.68	Note:	Not Reported
Level reading date:	1995-07-19	Feet below surface:	Not Reported
Feet to sea level:	6.74	Note:	Not Reported
Level reading date:	1995-05-23	Feet below surface:	Not Reported
Feet to sea level:	6.43	Note:	Not Reported
Level reading date:	1995-03-14	Feet below surface:	Not Reported
Feet to sea level:	6.69	Note:	Not Reported
Level reading date:	1995-01-25	Feet below surface:	Not Reported
Feet to sea level:	6.77	Note:	Not Reported
Level reading date:	1994-12-13	Feet below surface:	Not Reported
Feet to sea level:	6.73	Note:	Not Reported
Level reading date:	1994-10-18	Feet below surface:	Not Reported
Feet to sea level:	6.95	Note:	Not Reported

Level reading date:	1994-09-21	Feet below surface:	Not Reported
Feet to sea level:	7.06	Note:	Not Reported
Level reading date:	1994-08-24	Feet below surface:	Not Reported
Feet to sea level:	7.16	Note:	Not Reported
Level reading date:	1994-07-27	Feet below surface:	Not Reported
Feet to sea level:	7.24	Note:	Not Reported
Level reading date:	1994-06-20	Feet below surface:	Not Reported
Feet to sea level:	7.17	Note:	Not Reported
Level reading date:	1994-05-17	Feet below surface:	Not Reported
Feet to sea level:	7.23	Note:	Not Reported
Level reading date:	1994-04-26	Feet below surface:	Not Reported
Feet to sea level:	7.19	Note:	Not Reported
Level reading date:	1994-03-25	Feet below surface:	Not Reported
Feet to sea level:	6.95	Note:	Not Reported
Level reading date:	1994-02-02	Feet below surface:	Not Reported
Feet to sea level:	6.47	Note:	Not Reported
Level reading date:	1993-12-27	Feet below surface:	Not Reported
Feet to sea level:	6.28	Note:	Not Reported
Level reading date:	1993-11-18	Feet below surface:	Not Reported
Feet to sea level:	6.46	Note:	Not Reported
Level reading date:	1993-10-28	Feet below surface:	Not Reported
Feet to sea level:	6.70	Note:	Not Reported
Level reading date:	1993-09-15	Feet below surface:	Not Reported
Feet to sea level:	6.95	Note:	Not Reported
Level reading date:	1993-08-18	Feet below surface:	Not Reported
Feet to sea level:	7.05	Note:	Not Reported
Level reading date:	1993-07-15	Feet below surface:	Not Reported
Feet to sea level:	7.12	Note:	Not Reported
Level reading date:	1993-06-22	Feet below surface:	Not Reported
Feet to sea level:	7.20	Note:	Not Reported
Level reading date:	1993-05-20	Feet below surface:	Not Reported
Feet to sea level:	7.28	Note:	Not Reported
Level reading date:	1993-04-29	Feet below surface:	Not Reported
Feet to sea level:	7.32	Note:	Not Reported
Level reading date:	1993-03-23	Feet below surface:	Not Reported
Feet to sea level:	6.98	Note:	Not Reported
Level reading date:	1993-02-24	Feet below surface:	Not Reported
Feet to sea level:	6.97	Note:	Not Reported
Level reading date:	1993-01-26	Feet below surface:	Not Reported
Feet to sea level:	7.95	Note:	Not Reported
Level reading date:	1992-12-29	Feet below surface:	Not Reported
Feet to sea level:	7.98	Note:	Not Reported

Level reading date:	1992-11-24	Feet below surface:	Not Reported
Feet to sea level:	9.12	Note:	Not Reported
Level reading date:	1992-10-28	Feet below surface:	Not Reported
Feet to sea level:	8.63	Note:	Not Reported
Level reading date:	1992-09-16	Feet below surface:	Not Reported
Feet to sea level:	7.22	Note:	Not Reported
Level reading date:	1992-08-25	Feet below surface:	Not Reported
Feet to sea level:	7.17	Note:	Not Reported
Level reading date:	1992-06-23	Feet below surface:	Not Reported
Feet to sea level:	7.22	Note:	Not Reported
Level reading date:	1992-06-15	Feet below surface:	Not Reported
Feet to sea level:	6.95	Note:	Not Reported
Level reading date:	1992-05-12	Feet below surface:	Not Reported
Feet to sea level:	7.51	Note:	Not Reported
Level reading date:	1992-04-14	Feet below surface:	Not Reported
Feet to sea level:	8.23	Note:	Not Reported
Level reading date:	1992-03-18	Feet below surface:	Not Reported
Feet to sea level:	8.66	Note:	Not Reported
Level reading date:	1992-02-19	Feet below surface:	Not Reported
Feet to sea level:	8.76	Note:	Not Reported
Level reading date:	1992-01-22	Feet below surface:	Not Reported
Feet to sea level:	9.17	Note:	Not Reported
Level reading date:	1991-12-18	Feet below surface:	Not Reported
Feet to sea level:	9.05	Note:	Not Reported
Level reading date:	1991-11-14	Feet below surface:	Not Reported
Feet to sea level:	8.81	Note:	Not Reported
Level reading date:	1991-10-16	Feet below surface:	Not Reported
Feet to sea level:	8.42	Note:	Not Reported
Level reading date:	1991-09-17	Feet below surface:	Not Reported
Feet to sea level:	8.57	Note:	Not Reported
Level reading date:	1991-08-15	Feet below surface:	Not Reported
Feet to sea level:	8.35	Note:	Not Reported
Level reading date:	1991-07-16	Feet below surface:	Not Reported
Feet to sea level:	8.28	Note:	Not Reported
Level reading date:	1991-06-12	Feet below surface:	Not Reported
Feet to sea level:	8.24	Note:	Not Reported
Level reading date:	1991-05-15	Feet below surface:	Not Reported
Feet to sea level:	8.15	Note:	Not Reported
Level reading date:	1991-04-15	Feet below surface:	Not Reported
Feet to sea level:	7.83	Note:	Not Reported
Level reading date:	1991-03-20	Feet below surface:	Not Reported
Feet to sea level:	8.04	Note:	Not Reported

Level reading date:	1991-02-21	Feet below surface:	Not Reported
Feet to sea level:	8.11	Note:	Not Reported
Level reading date:	1991-01-24	Feet below surface:	Not Reported
Feet to sea level:	8.51	Note:	Not Reported
Level reading date:	1990-12-10	Feet below surface:	Not Reported
Feet to sea level:	8.17	Note:	Not Reported
Level reading date:	1990-11-13	Feet below surface:	Not Reported
Feet to sea level:	8.69	Note:	Not Reported
Level reading date:	1990-10-10	Feet below surface:	Not Reported
Feet to sea level:	8.50	Note:	Not Reported
Level reading date:	1990-09-12	Feet below surface:	Not Reported
Feet to sea level:	7.61	Note:	Not Reported
Level reading date:	1990-08-14	Feet below surface:	Not Reported
Feet to sea level:	8.62	Note:	Not Reported
Level reading date:	1990-07-12	Feet below surface:	Not Reported
Feet to sea level:	8.54	Note:	Not Reported
Level reading date:	1990-06-20	Feet below surface:	Not Reported
Feet to sea level:	8.40	Note:	Not Reported
Level reading date:	1990-05-25	Feet below surface:	Not Reported
Feet to sea level:	8.24	Note:	Not Reported
Level reading date:	1990-04-24	Feet below surface:	Not Reported
Feet to sea level:	8.15	Note:	Not Reported
Level reading date:	1990-04-04	Feet below surface:	Not Reported
Feet to sea level:	8.23	Note:	Not Reported
Level reading date:	1990-02-26	Feet below surface:	Not Reported
Feet to sea level:	8.19	Note:	Not Reported
Level reading date:	1990-01-24	Feet below surface:	Not Reported
Feet to sea level:	8.31	Note:	Not Reported
Level reading date:	1989-12-28	Feet below surface:	Not Reported
Feet to sea level:	8.38	Note:	Not Reported
Level reading date:	1989-11-21	Feet below surface:	Not Reported
Feet to sea level:	8.40	Note:	Not Reported
Level reading date:	1989-10-27	Feet below surface:	Not Reported
Feet to sea level:	8.40	Note:	Not Reported
Level reading date:	1989-09-29	Feet below surface:	Not Reported
Feet to sea level:	8.32	Note:	Not Reported
Level reading date:	1989-08-31	Feet below surface:	Not Reported
Feet to sea level:	8.30	Note:	Not Reported
Level reading date:	1989-07-25	Feet below surface:	Not Reported
Feet to sea level:	7.95	Note:	Not Reported
Level reading date:	1989-06-22	Feet below surface:	Not Reported
Feet to sea level:	7.68	Note:	Not Reported

Level reading date:	1989-05-22	Feet below surface:	Not Reported
Feet to sea level:	7.20	Note:	Not Reported
Level reading date:	1989-04-28	Feet below surface:	Not Reported
Feet to sea level:	6.99	Note:	Not Reported
Level reading date:	1989-03-29	Feet below surface:	Not Reported
Feet to sea level:	6.70	Note:	Not Reported
Level reading date:	1989-02-28	Feet below surface:	Not Reported
Feet to sea level:	7.22	Note:	Not Reported
Level reading date:	1989-01-17	Feet below surface:	Not Reported
Feet to sea level:	7.26	Note:	Not Reported
Level reading date:	1988-12-09	Feet below surface:	Not Reported
Feet to sea level:	7.35	Note:	Not Reported
Level reading date:	1988-11-16	Feet below surface:	Not Reported
Feet to sea level:	7.11	Note:	Not Reported
Level reading date:	1988-10-19	Feet below surface:	Not Reported
Feet to sea level:	6.89	Note:	Not Reported
Level reading date:	1988-09-14	Feet below surface:	Not Reported
Feet to sea level:	6.99	Note:	Not Reported
Level reading date:	1988-08-31	Feet below surface:	Not Reported
Feet to sea level:	6.97	Note:	Not Reported
Level reading date:	1988-07-22	Feet below surface:	Not Reported
Feet to sea level:	6.92	Note:	Not Reported
Level reading date:	1988-06-17	Feet below surface:	Not Reported
Feet to sea level:	6.76	Note:	Not Reported
Level reading date:	1988-06-01	Feet below surface:	Not Reported
Feet to sea level:	5.80	Note:	Not Reported
Level reading date:	1985-10-01	Feet below surface:	Not Reported
Feet to sea level:	8.18	Note:	Not Reported
Level reading date:	1985-05-18	Feet below surface:	Not Reported
Feet to sea level:	8.22	Note:	Not Reported
Level reading date:	1984-12-18	Feet below surface:	Not Reported
Feet to sea level:	10.11	Note:	Not Reported
Level reading date:	1984-10-05	Feet below surface:	Not Reported
Feet to sea level:	10.85	Note:	Not Reported
Level reading date:	1984-06-27	Feet below surface:	Not Reported
Feet to sea level:	11.37	Note:	Not Reported
Level reading date:	1984-03-16	Feet below surface:	Not Reported
Feet to sea level:	10.58	Note:	Not Reported
Level reading date:	1984-01-05	Feet below surface:	Not Reported
Feet to sea level:	10.35	Note:	Not Reported
Level reading date:	1983-09-29	Feet below surface:	Not Reported
Feet to sea level:	9.08	Note:	Not Reported

Level reading date:	1983-06-29	Feet below surface:	Not Reported
Feet to sea level:	9.51	Note:	Not Reported
Level reading date:	1983-03-25	Feet below surface:	Not Reported
Feet to sea level:	9.36	Note:	Not Reported
Level reading date:	1982-12-21	Feet below surface:	Not Reported
Feet to sea level:	9.05	Note:	Not Reported
Level reading date:	1982-10-06	Feet below surface:	Not Reported
Feet to sea level:	9.40	Note:	Not Reported
Level reading date:	1982-06-30	Feet below surface:	Not Reported
Feet to sea level:	8.84	Note:	Not Reported
Level reading date:	1982-04-05	Feet below surface:	Not Reported
Feet to sea level:	9.44	Note:	Not Reported
Level reading date:	1981-12-29	Feet below surface:	Not Reported
Feet to sea level:	9.65	Note:	Not Reported
Level reading date:	1981-09-23	Feet below surface:	Not Reported
Feet to sea level:	9.70	Note:	Not Reported
Level reading date:	1981-06-24	Feet below surface:	Not Reported
Feet to sea level:	9.95	Note:	Not Reported
Level reading date:	1981-03-18	Feet below surface:	Not Reported
Feet to sea level:	11.20	Note:	Not Reported
Level reading date:	1981-02-10	Feet below surface:	Not Reported
Feet to sea level:	11.23	Note:	Not Reported
Level reading date:	1980-12-30	Feet below surface:	Not Reported
Feet to sea level:	11.24	Note:	Not Reported
Level reading date:	1980-09-23	Feet below surface:	Not Reported
Feet to sea level:	11.52	Note:	Not Reported
Level reading date:	1980-06-24	Feet below surface:	Not Reported
Feet to sea level:	11.20	Note:	Not Reported

K34
North
1/2 - 1 Mile
Lower

FED USGS **USGS40000829706**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 675. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	222	Well Hole Depth Units:	ft

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

K35
North
1/2 - 1 Mile
Lower

FED USGS **USGS40000829722**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 1977. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	163	Well Hole Depth Units:	ft

36
West
1/2 - 1 Mile
Higher

FED USGS **USGS40000829320**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 715. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	120	Well Hole Depth Units:	ft

37
SSW
1/2 - 1 Mile
Higher

FED USGS **USGS40000828836**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 255. 1	Type:	Well
Description:	1301	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	123	Well Depth Units:	ft
Well Hole Depth:	123	Well Hole Depth Units:	ft

38
SSW
1/2 - 1 Mile
Higher

FED USGS **USGS40000828808**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 952. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported

Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	122	Well Hole Depth Units:	ft

39
NW
1/2 - 1 Mile
Higher

FED USGS **USGS40000829528**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 678. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	221	Well Hole Depth Units:	ft

40
SSW
1/2 - 1 Mile
Higher

FED USGS **USGS40000828781**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 92. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Northern Atlantic Coastal Plain aquifer system		
Formation Type:	Glacial Aquifer, Upper	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	185
Well Depth Units:	ft	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

Ground water levels,Number of Measurements:	439	Level reading date:	1960-01-11
Feet below surface:	Not Reported	Feet to sea level:	0.40
Note:	Not Reported		
Level reading date:	1959-10-08	Feet below surface:	Not Reported
Feet to sea level:	0.51	Note:	Not Reported
Level reading date:	1959-07-21	Feet below surface:	Not Reported
Feet to sea level:	0.73	Note:	Not Reported
Level reading date:	1958-01-10	Feet below surface:	Not Reported
Feet to sea level:	-0.15	Note:	Not Reported
Level reading date:	1957-09-24	Feet below surface:	Not Reported
Feet to sea level:	-0.30	Note:	Not Reported
Level reading date:	1957-06-27	Feet below surface:	Not Reported
Feet to sea level:	0.15	Note:	Not Reported
Level reading date:	1957-03-27	Feet below surface:	Not Reported

Feet to sea level:	0.53	Note:	Not Reported
Level reading date:	1956-12-18	Feet below surface:	Not Reported
Feet to sea level:	0.36	Note:	Not Reported
Level reading date:	1956-11-29	Feet below surface:	Not Reported
Feet to sea level:	0.37	Note:	Not Reported
Level reading date:	1956-10-25	Feet below surface:	Not Reported
Feet to sea level:	0.05	Note:	Not Reported
Level reading date:	1956-10-02	Feet below surface:	Not Reported
Feet to sea level:	0.05	Note:	Not Reported
Level reading date:	1956-08-02	Feet below surface:	Not Reported
Feet to sea level:	-0.13	Note:	Not Reported
Level reading date:	1956-07-11	Feet below surface:	Not Reported
Feet to sea level:	-0.01	Note:	Not Reported
Level reading date:	1956-06-05	Feet below surface:	Not Reported
Feet to sea level:	0.02	Note:	Not Reported
Level reading date:	1956-05-15	Feet below surface:	Not Reported
Feet to sea level:	-0.05	Note:	Not Reported
Level reading date:	1956-03-05	Feet below surface:	Not Reported
Feet to sea level:	-0.34	Note:	Not Reported
Level reading date:	1956-02-07	Feet below surface:	Not Reported
Feet to sea level:	-0.47	Note:	Not Reported
Level reading date:	1955-12-22	Feet below surface:	Not Reported
Feet to sea level:	-1.34	Note:	Not Reported
Level reading date:	1955-11-15	Feet below surface:	Not Reported
Feet to sea level:	-1.12	Note:	Not Reported
Level reading date:	1955-10-07	Feet below surface:	Not Reported
Feet to sea level:	-1.27	Note:	Not Reported
Level reading date:	1955-08-25	Feet below surface:	Not Reported
Feet to sea level:	-1.69	Note:	Not Reported
Level reading date:	1955-07-28	Feet below surface:	Not Reported
Feet to sea level:	-1.62	Note:	Not Reported
Level reading date:	1955-06-23	Feet below surface:	Not Reported
Feet to sea level:	-1.56	Note:	Not Reported
Level reading date:	1955-05-25	Feet below surface:	Not Reported
Feet to sea level:	-1.15	Note:	Not Reported
Level reading date:	1955-04-26	Feet below surface:	Not Reported
Feet to sea level:	-1.24	Note:	Not Reported
Level reading date:	1955-03-29	Feet below surface:	Not Reported
Feet to sea level:	-1.44	Note:	Not Reported
Level reading date:	1955-02-25	Feet below surface:	Not Reported
Feet to sea level:	-1.43	Note:	Not Reported

Level reading date:	1955-01-25	Feet below surface:	Not Reported
Feet to sea level:	-1.68	Note:	Not Reported
Level reading date:	1954-12-27	Feet below surface:	Not Reported
Feet to sea level:	-1.99	Note:	Not Reported
Level reading date:	1954-06-29	Feet below surface:	Not Reported
Feet to sea level:	-2.45	Note:	Not Reported
Level reading date:	1954-04-28	Feet below surface:	Not Reported
Feet to sea level:	-2.24	Note:	Not Reported
Level reading date:	1954-03-30	Feet below surface:	Not Reported
Feet to sea level:	-2.38	Note:	Not Reported
Level reading date:	1954-02-25	Feet below surface:	Not Reported
Feet to sea level:	-2.51	Note:	Not Reported
Level reading date:	1954-01-28	Feet below surface:	Not Reported
Feet to sea level:	-2.78	Note:	Not Reported
Level reading date:	1953-12-23	Feet below surface:	Not Reported
Feet to sea level:	-3.30	Note:	Not Reported
Level reading date:	1953-12-02	Feet below surface:	Not Reported
Feet to sea level:	-3.43	Note:	Not Reported
Level reading date:	1953-10-28	Feet below surface:	Not Reported
Feet to sea level:	-3.86	Note:	Not Reported
Level reading date:	1953-10-01	Feet below surface:	Not Reported
Feet to sea level:	-4.17	Note:	Not Reported
Level reading date:	1953-08-28	Feet below surface:	Not Reported
Feet to sea level:	-4.06	Note:	Not Reported
Level reading date:	1953-08-03	Feet below surface:	Not Reported
Feet to sea level:	-4.40	Note:	Not Reported
Level reading date:	1953-06-24	Feet below surface:	Not Reported
Feet to sea level:	-4.45	Note:	Not Reported
Level reading date:	1953-05-22	Feet below surface:	Not Reported
Feet to sea level:	-4.41	Note:	Not Reported
Level reading date:	1953-04-27	Feet below surface:	Not Reported
Feet to sea level:	-4.64	Note:	Not Reported
Level reading date:	1953-03-24	Feet below surface:	Not Reported
Feet to sea level:	-5.29	Note:	Not Reported
Level reading date:	1953-02-27	Feet below surface:	Not Reported
Feet to sea level:	-5.68	Note:	Not Reported
Level reading date:	1953-02-05	Feet below surface:	Not Reported
Feet to sea level:	-6.12	Note:	Not Reported
Level reading date:	1952-12-24	Feet below surface:	Not Reported
Feet to sea level:	-6.98	Note:	Not Reported
Level reading date:	1952-12-05	Feet below surface:	Not Reported
Feet to sea level:	-7.35	Note:	Not Reported

Level reading date:	1952-11-03	Feet below surface:	Not Reported
Feet to sea level:	-8.23	Note:	Not Reported
Level reading date:	1952-09-22	Feet below surface:	Not Reported
Feet to sea level:	-8.82	Note:	Not Reported
Level reading date:	1952-08-25	Feet below surface:	Not Reported
Feet to sea level:	-9.25	Note:	Not Reported
Level reading date:	1952-07-23	Feet below surface:	Not Reported
Feet to sea level:	-9.64	Note:	Not Reported
Level reading date:	1952-06-24	Feet below surface:	Not Reported
Feet to sea level:	-9.99	Note:	Not Reported
Level reading date:	1952-05-27	Feet below surface:	Not Reported
Feet to sea level:	-10.33	Note:	Not Reported
Level reading date:	1952-04-29	Feet below surface:	Not Reported
Feet to sea level:	-10.64	Note:	Not Reported
Level reading date:	1952-03-24	Feet below surface:	Not Reported
Feet to sea level:	-10.95	Note:	Not Reported
Level reading date:	1952-02-20	Feet below surface:	Not Reported
Feet to sea level:	-11.37	Note:	Not Reported
Level reading date:	1952-01-29	Feet below surface:	Not Reported
Feet to sea level:	-11.64	Note:	Not Reported
Level reading date:	1951-12-20	Feet below surface:	Not Reported
Feet to sea level:	-11.99	Note:	Not Reported
Level reading date:	1951-11-28	Feet below surface:	Not Reported
Feet to sea level:	-12.18	Note:	Not Reported
Level reading date:	1951-11-01	Feet below surface:	Not Reported
Feet to sea level:	-12.27	Note:	Not Reported
Level reading date:	1951-09-26	Feet below surface:	Not Reported
Feet to sea level:	-12.46	Note:	Not Reported
Level reading date:	1951-08-28	Feet below surface:	Not Reported
Feet to sea level:	-12.59	Note:	Not Reported
Level reading date:	1951-07-26	Feet below surface:	Not Reported
Feet to sea level:	-12.54	Note:	Not Reported
Level reading date:	1951-06-28	Feet below surface:	Not Reported
Feet to sea level:	-12.60	Note:	Not Reported
Level reading date:	1951-05-29	Feet below surface:	Not Reported
Feet to sea level:	-12.34	Note:	Not Reported
Level reading date:	1951-05-02	Feet below surface:	Not Reported
Feet to sea level:	-12.13	Note:	Not Reported
Level reading date:	1951-03-27	Feet below surface:	Not Reported
Feet to sea level:	-12.56	Note:	Not Reported
Level reading date:	1951-02-26	Feet below surface:	Not Reported
Feet to sea level:	-12.75	Note:	Not Reported

Level reading date:	1951-01-30	Feet below surface:	Not Reported
Feet to sea level:	-13.05	Note:	Not Reported
Level reading date:	1950-12-20	Feet below surface:	Not Reported
Feet to sea level:	-13.40	Note:	Not Reported
Level reading date:	1950-11-28	Feet below surface:	Not Reported
Feet to sea level:	-13.61	Note:	Not Reported
Level reading date:	1950-10-31	Feet below surface:	Not Reported
Feet to sea level:	-13.99	Note:	Not Reported
Level reading date:	1950-09-27	Feet below surface:	Not Reported
Feet to sea level:	-14.20	Note:	Not Reported
Level reading date:	1950-08-29	Feet below surface:	Not Reported
Feet to sea level:	-14.05	Note:	Not Reported
Level reading date:	1950-07-27	Feet below surface:	Not Reported
Feet to sea level:	-13.93	Note:	Not Reported
Level reading date:	1950-06-29	Feet below surface:	Not Reported
Feet to sea level:	-13.71	Note:	Not Reported
Level reading date:	1950-06-05	Feet below surface:	Not Reported
Feet to sea level:	-13.39	Note:	Not Reported
Level reading date:	1950-04-27	Feet below surface:	Not Reported
Feet to sea level:	-13.29	Note:	Not Reported
Level reading date:	1950-03-29	Feet below surface:	Not Reported
Feet to sea level:	-13.43	Note:	Not Reported
Level reading date:	1950-03-01	Feet below surface:	Not Reported
Feet to sea level:	-13.63	Note:	Not Reported
Level reading date:	1950-01-26	Feet below surface:	Not Reported
Feet to sea level:	-14.01	Note:	Not Reported
Level reading date:	1949-12-28	Feet below surface:	Not Reported
Feet to sea level:	-14.45	Note:	Not Reported
Level reading date:	1949-11-28	Feet below surface:	Not Reported
Feet to sea level:	-14.89	Note:	Not Reported
Level reading date:	1949-10-31	Feet below surface:	Not Reported
Feet to sea level:	-15.35	Note:	Not Reported
Level reading date:	1949-09-28	Feet below surface:	Not Reported
Feet to sea level:	-15.52	Note:	Not Reported
Level reading date:	1949-08-31	Feet below surface:	Not Reported
Feet to sea level:	-15.78	Note:	Not Reported
Level reading date:	1949-07-28	Feet below surface:	Not Reported
Feet to sea level:	-16.00	Note:	Not Reported
Level reading date:	1949-06-30	Feet below surface:	Not Reported
Feet to sea level:	-16.17	Note:	Not Reported
Level reading date:	1949-06-01	Feet below surface:	Not Reported
Feet to sea level:	-16.23	Note:	Not Reported

Level reading date:	1949-04-28	Feet below surface:	Not Reported
Feet to sea level:	-16.48	Note:	Not Reported
Level reading date:	1949-04-05	Feet below surface:	Not Reported
Feet to sea level:	-16.79	Note:	Not Reported
Level reading date:	1949-02-21	Feet below surface:	Not Reported
Feet to sea level:	-17.52	Note:	Not Reported
Level reading date:	1949-01-27	Feet below surface:	Not Reported
Feet to sea level:	-18.15	Note:	Not Reported
Level reading date:	1948-12-28	Feet below surface:	Not Reported
Feet to sea level:	-18.68	Note:	Not Reported
Level reading date:	1948-12-09	Feet below surface:	Not Reported
Feet to sea level:	-18.80	Note:	Not Reported
Level reading date:	1948-11-04	Feet below surface:	Not Reported
Feet to sea level:	-19.04	Note:	Not Reported
Level reading date:	1948-10-04	Feet below surface:	Not Reported
Feet to sea level:	-19.30	Note:	Not Reported
Level reading date:	1948-08-30	Feet below surface:	Not Reported
Feet to sea level:	-19.58	Note:	Not Reported
Level reading date:	1948-07-26	Feet below surface:	Not Reported
Feet to sea level:	-19.83	Note:	Not Reported
Level reading date:	1948-07-01	Feet below surface:	Not Reported
Feet to sea level:	-19.90	Note:	Not Reported
Level reading date:	1948-06-02	Feet below surface:	Not Reported
Feet to sea level:	-19.95	Note:	Not Reported
Level reading date:	1948-04-27	Feet below surface:	Not Reported
Feet to sea level:	-20.19	Note:	Not Reported
Level reading date:	1948-03-26	Feet below surface:	Not Reported
Feet to sea level:	-20.17	Note:	Not Reported
Level reading date:	1948-03-02	Feet below surface:	Not Reported
Feet to sea level:	-20.33	Note:	Not Reported
Level reading date:	1948-02-03	Feet below surface:	Not Reported
Feet to sea level:	-20.77	Note:	Not Reported
Level reading date:	1948-01-07	Feet below surface:	Not Reported
Feet to sea level:	-21.16	Note:	Not Reported
Level reading date:	1947-12-16	Feet below surface:	Not Reported
Feet to sea level:	-21.55	Note:	Not Reported
Level reading date:	1947-11-26	Feet below surface:	Not Reported
Feet to sea level:	-21.73	Note:	Not Reported
Level reading date:	1947-11-20	Feet below surface:	Not Reported
Feet to sea level:	-21.85	Note:	Not Reported
Level reading date:	1947-10-31	Feet below surface:	Not Reported
Feet to sea level:	-22.23	Note:	Not Reported

Level reading date:	1947-10-14	Feet below surface:	Not Reported
Feet to sea level:	-22.47	Note:	Not Reported
Level reading date:	1947-10-07	Feet below surface:	Not Reported
Feet to sea level:	-22.57	Note:	Not Reported
Level reading date:	1947-09-30	Feet below surface:	Not Reported
Feet to sea level:	-22.65	Note:	Not Reported
Level reading date:	1947-09-15	Feet below surface:	Not Reported
Feet to sea level:	-22.75	Note:	Not Reported
Level reading date:	1947-08-27	Feet below surface:	Not Reported
Feet to sea level:	-22.81	Note:	Not Reported
Level reading date:	1947-08-13	Feet below surface:	Not Reported
Feet to sea level:	-22.83	Note:	Not Reported
Level reading date:	1947-07-30	Feet below surface:	Not Reported
Feet to sea level:	-22.81	Note:	Not Reported
Level reading date:	1947-07-23	Feet below surface:	Not Reported
Feet to sea level:	-22.82	Note:	Not Reported
Level reading date:	1947-07-16	Feet below surface:	Not Reported
Feet to sea level:	-22.77	Note:	Not Reported
Level reading date:	1947-07-07	Feet below surface:	Not Reported
Feet to sea level:	-22.71	Note:	Not Reported
Level reading date:	1947-07-02	Feet below surface:	Not Reported
Feet to sea level:	-22.70	Note:	Not Reported
Level reading date:	1947-07-01	Feet below surface:	Not Reported
Feet to sea level:	-22.69	Note:	Not Reported
Level reading date:	1947-06-30	Feet below surface:	Not Reported
Feet to sea level:	-22.71	Note:	Not Reported
Level reading date:	1947-06-24	Feet below surface:	Not Reported
Feet to sea level:	-22.69	Note:	Not Reported
Level reading date:	1947-05-27	Feet below surface:	Not Reported
Feet to sea level:	-22.67	Note:	Not Reported
Level reading date:	1947-05-07	Feet below surface:	Not Reported
Feet to sea level:	-22.66	Note:	Not Reported
Level reading date:	1947-04-04	Feet below surface:	Not Reported
Feet to sea level:	-22.61	Note:	Not Reported
Level reading date:	1947-03-05	Feet below surface:	Not Reported
Feet to sea level:	-22.57	Note:	Not Reported
Level reading date:	1947-01-27	Feet below surface:	Not Reported
Feet to sea level:	-22.51	Note:	Not Reported
Level reading date:	1946-12-27	Feet below surface:	Not Reported
Feet to sea level:	-22.43	Note:	Not Reported
Level reading date:	1946-11-26	Feet below surface:	Not Reported
Feet to sea level:	-22.34	Note:	Not Reported

Level reading date:	1946-10-22	Feet below surface:	Not Reported
Feet to sea level:	-22.60	Note:	Not Reported
Level reading date:	1946-09-26	Feet below surface:	Not Reported
Feet to sea level:	-22.22	Note:	Not Reported
Level reading date:	1946-08-30	Feet below surface:	Not Reported
Feet to sea level:	-21.95	Note:	Not Reported
Level reading date:	1946-07-26	Feet below surface:	Not Reported
Feet to sea level:	-22.04	Note:	Not Reported
Level reading date:	1946-07-01	Feet below surface:	Not Reported
Feet to sea level:	-21.95	Note:	Not Reported
Level reading date:	1946-06-18	Feet below surface:	Not Reported
Feet to sea level:	-21.85	Note:	Not Reported
Level reading date:	1946-05-10	Feet below surface:	Not Reported
Feet to sea level:	-21.78	Note:	Not Reported
Level reading date:	1946-04-12	Feet below surface:	Not Reported
Feet to sea level:	-21.67	Note:	Not Reported
Level reading date:	1946-03-18	Feet below surface:	Not Reported
Feet to sea level:	-21.50	Note:	Not Reported
Level reading date:	1946-02-15	Feet below surface:	Not Reported
Feet to sea level:	-21.41	Note:	Not Reported
Level reading date:	1946-01-08	Feet below surface:	Not Reported
Feet to sea level:	-21.55	Note:	Not Reported
Level reading date:	1945-12-04	Feet below surface:	Not Reported
Feet to sea level:	-21.91	Note:	Not Reported
Level reading date:	1945-11-06	Feet below surface:	Not Reported
Feet to sea level:	-22.12	Note:	Not Reported
Level reading date:	1945-09-28	Feet below surface:	Not Reported
Feet to sea level:	-22.38	Note:	Not Reported
Level reading date:	1945-09-12	Feet below surface:	Not Reported
Feet to sea level:	-22.38	Note:	Not Reported
Level reading date:	1945-08-08	Feet below surface:	Not Reported
Feet to sea level:	-22.28	Note:	Not Reported
Level reading date:	1945-07-03	Feet below surface:	Not Reported
Feet to sea level:	-22.04	Note:	Not Reported
Level reading date:	1945-06-04	Feet below surface:	Not Reported
Feet to sea level:	-21.84	Note:	Not Reported
Level reading date:	1945-04-27	Feet below surface:	Not Reported
Feet to sea level:	-21.65	Note:	Not Reported
Level reading date:	1945-04-04	Feet below surface:	Not Reported
Feet to sea level:	-21.54	Note:	Not Reported
Level reading date:	1945-03-03	Feet below surface:	Not Reported
Feet to sea level:	-21.26	Note:	Not Reported

Level reading date:	1945-02-06	Feet below surface:	Not Reported
Feet to sea level:	-21.62	Note:	Not Reported
Level reading date:	1945-01-02	Feet below surface:	Not Reported
Feet to sea level:	-22.09	Note:	Not Reported
Level reading date:	1944-12-06	Feet below surface:	Not Reported
Feet to sea level:	-22.17	Note:	Not Reported
Level reading date:	1944-10-27	Feet below surface:	Not Reported
Feet to sea level:	-22.68	Note:	Not Reported
Level reading date:	1944-10-04	Feet below surface:	Not Reported
Feet to sea level:	-22.98	Note:	Not Reported
Level reading date:	1944-09-02	Feet below surface:	Not Reported
Feet to sea level:	-22.98	Note:	Not Reported
Level reading date:	1944-07-31	Feet below surface:	Not Reported
Feet to sea level:	-22.84	Note:	Not Reported
Level reading date:	1944-07-05	Feet below surface:	Not Reported
Feet to sea level:	-22.64	Note:	Not Reported
Level reading date:	1944-05-27	Feet below surface:	Not Reported
Feet to sea level:	-22.29	Note:	Not Reported
Level reading date:	1944-05-05	Feet below surface:	Not Reported
Feet to sea level:	-22.12	Note:	Not Reported
Level reading date:	1944-04-01	Feet below surface:	Not Reported
Feet to sea level:	-21.71	Note:	Not Reported
Level reading date:	1944-02-26	Feet below surface:	Not Reported
Feet to sea level:	-22.94	Note:	Not Reported
Level reading date:	1944-01-29	Feet below surface:	Not Reported
Feet to sea level:	-22.89	Note:	Not Reported
Level reading date:	1944-01-01	Feet below surface:	Not Reported
Feet to sea level:	-22.93	Note:	Not Reported
Level reading date:	1943-11-27	Feet below surface:	Not Reported
Feet to sea level:	-22.90	Note:	Not Reported
Level reading date:	1943-10-30	Feet below surface:	Not Reported
Feet to sea level:	-22.82	Note:	Not Reported
Level reading date:	1943-08-28	Feet below surface:	Not Reported
Feet to sea level:	-21.70	Note:	Not Reported
Level reading date:	1943-07-31	Feet below surface:	Not Reported
Feet to sea level:	-21.68	Note:	Not Reported
Level reading date:	1943-06-26	Feet below surface:	Not Reported
Feet to sea level:	-21.65	Note:	Not Reported
Level reading date:	1943-05-29	Feet below surface:	Not Reported
Feet to sea level:	-21.61	Note:	Not Reported
Level reading date:	1943-05-01	Feet below surface:	Not Reported
Feet to sea level:	-21.72	Note:	Not Reported

Level reading date:	1943-03-27	Feet below surface:	Not Reported
Feet to sea level:	-21.88	Note:	Not Reported
Level reading date:	1943-02-27	Feet below surface:	Not Reported
Feet to sea level:	-22.08	Note:	Not Reported
Level reading date:	1943-01-30	Feet below surface:	Not Reported
Feet to sea level:	-22.20	Note:	Not Reported
Level reading date:	1943-01-02	Feet below surface:	Not Reported
Feet to sea level:	-22.41	Note:	Not Reported
Level reading date:	1942-12-26	Feet below surface:	Not Reported
Feet to sea level:	-22.48	Note:	Not Reported
Level reading date:	1942-12-19	Feet below surface:	Not Reported
Feet to sea level:	-22.52	Note:	Not Reported
Level reading date:	1942-12-12	Feet below surface:	Not Reported
Feet to sea level:	-22.56	Note:	Not Reported
Level reading date:	1942-12-05	Feet below surface:	Not Reported
Feet to sea level:	-22.64	Note:	Not Reported
Level reading date:	1942-11-28	Feet below surface:	Not Reported
Feet to sea level:	-22.68	Note:	Not Reported
Level reading date:	1942-11-21	Feet below surface:	Not Reported
Feet to sea level:	-22.75	Note:	Not Reported
Level reading date:	1942-11-14	Feet below surface:	Not Reported
Feet to sea level:	-22.81	Note:	Not Reported
Level reading date:	1942-11-07	Feet below surface:	Not Reported
Feet to sea level:	-22.90	Note:	Not Reported
Level reading date:	1942-10-31	Feet below surface:	Not Reported
Feet to sea level:	-22.98	Note:	Not Reported
Level reading date:	1942-10-24	Feet below surface:	Not Reported
Feet to sea level:	-23.10	Note:	Not Reported
Level reading date:	1942-10-17	Feet below surface:	Not Reported
Feet to sea level:	-23.19	Note:	Not Reported
Level reading date:	1942-10-10	Feet below surface:	Not Reported
Feet to sea level:	-23.30	Note:	Not Reported
Level reading date:	1942-10-03	Feet below surface:	Not Reported
Feet to sea level:	-23.41	Note:	Not Reported
Level reading date:	1942-09-26	Feet below surface:	Not Reported
Feet to sea level:	-23.40	Note:	Not Reported
Level reading date:	1942-09-19	Feet below surface:	Not Reported
Feet to sea level:	-23.35	Note:	Not Reported
Level reading date:	1942-09-12	Feet below surface:	Not Reported
Feet to sea level:	-23.34	Note:	Not Reported
Level reading date:	1942-09-05	Feet below surface:	Not Reported
Feet to sea level:	-23.31	Note:	Not Reported

Level reading date:	1942-08-29	Feet below surface:	Not Reported
Feet to sea level:	-23.29	Note:	Not Reported
Level reading date:	1942-08-22	Feet below surface:	Not Reported
Feet to sea level:	-23.25	Note:	Not Reported
Level reading date:	1942-08-15	Feet below surface:	Not Reported
Feet to sea level:	-23.20	Note:	Not Reported
Level reading date:	1942-08-08	Feet below surface:	Not Reported
Feet to sea level:	-23.15	Note:	Not Reported
Level reading date:	1942-08-01	Feet below surface:	Not Reported
Feet to sea level:	-23.04	Note:	Not Reported
Level reading date:	1942-07-25	Feet below surface:	Not Reported
Feet to sea level:	-22.98	Note:	Not Reported
Level reading date:	1942-07-18	Feet below surface:	Not Reported
Feet to sea level:	-22.86	Note:	Not Reported
Level reading date:	1942-07-11	Feet below surface:	Not Reported
Feet to sea level:	-22.78	Note:	Not Reported
Level reading date:	1942-06-27	Feet below surface:	Not Reported
Feet to sea level:	-22.53	Note:	Not Reported
Level reading date:	1942-06-20	Feet below surface:	Not Reported
Feet to sea level:	-22.38	Note:	Not Reported
Level reading date:	1942-06-13	Feet below surface:	Not Reported
Feet to sea level:	-22.24	Note:	Not Reported
Level reading date:	1942-06-06	Feet below surface:	Not Reported
Feet to sea level:	-22.10	Note:	Not Reported
Level reading date:	1942-05-30	Feet below surface:	Not Reported
Feet to sea level:	-22.04	Note:	Not Reported
Level reading date:	1942-05-23	Feet below surface:	Not Reported
Feet to sea level:	-22.03	Note:	Not Reported
Level reading date:	1942-05-16	Feet below surface:	Not Reported
Feet to sea level:	-22.06	Note:	Not Reported
Level reading date:	1942-05-09	Feet below surface:	Not Reported
Feet to sea level:	-22.08	Note:	Not Reported
Level reading date:	1942-05-02	Feet below surface:	Not Reported
Feet to sea level:	-22.10	Note:	Not Reported
Level reading date:	1942-04-25	Feet below surface:	Not Reported
Feet to sea level:	-22.12	Note:	Not Reported
Level reading date:	1942-04-18	Feet below surface:	Not Reported
Feet to sea level:	-22.15	Note:	Not Reported
Level reading date:	1942-04-11	Feet below surface:	Not Reported
Feet to sea level:	-22.18	Note:	Not Reported
Level reading date:	1942-04-04	Feet below surface:	Not Reported
Feet to sea level:	-22.23	Note:	Not Reported

Level reading date:	1942-03-28	Feet below surface:	Not Reported
Feet to sea level:	-22.25	Note:	Not Reported
Level reading date:	1942-03-21	Feet below surface:	Not Reported
Feet to sea level:	-22.25	Note:	Not Reported
Level reading date:	1942-03-14	Feet below surface:	Not Reported
Feet to sea level:	-22.30	Note:	Not Reported
Level reading date:	1942-03-07	Feet below surface:	Not Reported
Feet to sea level:	-22.36	Note:	Not Reported
Level reading date:	1942-02-28	Feet below surface:	Not Reported
Feet to sea level:	-22.39	Note:	Not Reported
Level reading date:	1942-02-21	Feet below surface:	Not Reported
Feet to sea level:	-22.41	Note:	Not Reported
Level reading date:	1942-02-14	Feet below surface:	Not Reported
Feet to sea level:	-22.45	Note:	Not Reported
Level reading date:	1942-02-07	Feet below surface:	Not Reported
Feet to sea level:	-22.49	Note:	Not Reported
Level reading date:	1942-01-31	Feet below surface:	Not Reported
Feet to sea level:	-22.54	Note:	Not Reported
Level reading date:	1942-01-24	Feet below surface:	Not Reported
Feet to sea level:	-22.61	Note:	Not Reported
Level reading date:	1942-01-17	Feet below surface:	Not Reported
Feet to sea level:	-22.67	Note:	Not Reported
Level reading date:	1942-01-10	Feet below surface:	Not Reported
Feet to sea level:	-22.71	Note:	Not Reported
Level reading date:	1942-01-03	Feet below surface:	Not Reported
Feet to sea level:	-22.81	Note:	Not Reported
Level reading date:	1941-12-27	Feet below surface:	Not Reported
Feet to sea level:	-22.85	Note:	Not Reported
Level reading date:	1941-12-20	Feet below surface:	Not Reported
Feet to sea level:	-22.93	Note:	Not Reported
Level reading date:	1941-12-13	Feet below surface:	Not Reported
Feet to sea level:	-22.99	Note:	Not Reported
Level reading date:	1941-12-06	Feet below surface:	Not Reported
Feet to sea level:	-23.08	Note:	Not Reported
Level reading date:	1941-11-29	Feet below surface:	Not Reported
Feet to sea level:	-23.17	Note:	Not Reported
Level reading date:	1941-11-22	Feet below surface:	Not Reported
Feet to sea level:	-23.27	Note:	Not Reported
Level reading date:	1941-11-15	Feet below surface:	Not Reported
Feet to sea level:	-23.36	Note:	Not Reported
Level reading date:	1941-11-08	Feet below surface:	Not Reported
Feet to sea level:	-23.48	Note:	Not Reported

Level reading date:	1941-11-01	Feet below surface:	Not Reported
Feet to sea level:	-23.59	Note:	Not Reported
Level reading date:	1941-10-25	Feet below surface:	Not Reported
Feet to sea level:	-23.72	Note:	Not Reported
Level reading date:	1941-10-18	Feet below surface:	Not Reported
Feet to sea level:	-23.85	Note:	Not Reported
Level reading date:	1941-10-11	Feet below surface:	Not Reported
Feet to sea level:	-24.00	Note:	Not Reported
Level reading date:	1941-10-04	Feet below surface:	Not Reported
Feet to sea level:	-24.08	Note:	Not Reported
Level reading date:	1941-09-27	Feet below surface:	Not Reported
Feet to sea level:	-24.04	Note:	Not Reported
Level reading date:	1941-09-20	Feet below surface:	Not Reported
Feet to sea level:	-23.97	Note:	Not Reported
Level reading date:	1941-09-13	Feet below surface:	Not Reported
Feet to sea level:	-23.90	Note:	Not Reported
Level reading date:	1941-09-06	Feet below surface:	Not Reported
Feet to sea level:	-23.80	Note:	Not Reported
Level reading date:	1941-08-30	Feet below surface:	Not Reported
Feet to sea level:	-23.72	Note:	Not Reported
Level reading date:	1941-08-23	Feet below surface:	Not Reported
Feet to sea level:	-23.62	Note:	Not Reported
Level reading date:	1941-08-16	Feet below surface:	Not Reported
Feet to sea level:	-23.52	Note:	Not Reported
Level reading date:	1941-08-09	Feet below surface:	Not Reported
Feet to sea level:	-23.41	Note:	Not Reported
Level reading date:	1941-08-02	Feet below surface:	Not Reported
Feet to sea level:	-23.29	Note:	Not Reported
Level reading date:	1941-07-26	Feet below surface:	Not Reported
Feet to sea level:	-23.15	Note:	Not Reported
Level reading date:	1941-07-19	Feet below surface:	Not Reported
Feet to sea level:	-23.02	Note:	Not Reported
Level reading date:	1941-07-12	Feet below surface:	Not Reported
Feet to sea level:	-22.86	Note:	Not Reported
Level reading date:	1941-07-05	Feet below surface:	Not Reported
Feet to sea level:	-22.73	Note:	Not Reported
Level reading date:	1941-06-28	Feet below surface:	Not Reported
Feet to sea level:	-22.54	Note:	Not Reported
Level reading date:	1941-06-21	Feet below surface:	Not Reported
Feet to sea level:	-22.35	Note:	Not Reported
Level reading date:	1941-06-14	Feet below surface:	Not Reported
Feet to sea level:	-22.17	Note:	Not Reported

Level reading date:	1941-06-07	Feet below surface:	Not Reported
Feet to sea level:	-22.03	Note:	Not Reported
Level reading date:	1941-05-31	Feet below surface:	Not Reported
Feet to sea level:	-21.89	Note:	Not Reported
Level reading date:	1941-05-24	Feet below surface:	Not Reported
Feet to sea level:	-21.76	Note:	Not Reported
Level reading date:	1941-05-17	Feet below surface:	Not Reported
Feet to sea level:	-21.61	Note:	Not Reported
Level reading date:	1941-05-10	Feet below surface:	Not Reported
Feet to sea level:	-21.45	Note:	Not Reported
Level reading date:	1941-05-03	Feet below surface:	Not Reported
Feet to sea level:	-21.29	Note:	Not Reported
Level reading date:	1941-04-26	Feet below surface:	Not Reported
Feet to sea level:	-21.31	Note:	Not Reported
Level reading date:	1941-04-19	Feet below surface:	Not Reported
Feet to sea level:	-21.34	Note:	Not Reported
Level reading date:	1941-04-12	Feet below surface:	Not Reported
Feet to sea level:	-21.38	Note:	Not Reported
Level reading date:	1941-04-05	Feet below surface:	Not Reported
Feet to sea level:	-21.41	Note:	Not Reported
Level reading date:	1941-03-29	Feet below surface:	Not Reported
Feet to sea level:	-21.45	Note:	Not Reported
Level reading date:	1941-03-22	Feet below surface:	Not Reported
Feet to sea level:	-21.50	Note:	Not Reported
Level reading date:	1941-03-15	Feet below surface:	Not Reported
Feet to sea level:	-21.56	Note:	Not Reported
Level reading date:	1941-03-08	Feet below surface:	Not Reported
Feet to sea level:	-21.61	Note:	Not Reported
Level reading date:	1941-03-01	Feet below surface:	Not Reported
Feet to sea level:	-21.68	Note:	Not Reported
Level reading date:	1941-02-22	Feet below surface:	Not Reported
Feet to sea level:	-21.73	Note:	Not Reported
Level reading date:	1941-02-15	Feet below surface:	Not Reported
Feet to sea level:	-21.80	Note:	Not Reported
Level reading date:	1941-02-08	Feet below surface:	Not Reported
Feet to sea level:	-21.88	Note:	Not Reported
Level reading date:	1941-02-01	Feet below surface:	Not Reported
Feet to sea level:	-21.93	Note:	Not Reported
Level reading date:	1941-01-25	Feet below surface:	Not Reported
Feet to sea level:	-22.01	Note:	Not Reported
Level reading date:	1941-01-18	Feet below surface:	Not Reported
Feet to sea level:	-22.07	Note:	Not Reported

Level reading date:	1941-01-11	Feet below surface:	Not Reported
Feet to sea level:	-22.15	Note:	Not Reported
Level reading date:	1941-01-04	Feet below surface:	Not Reported
Feet to sea level:	-22.22	Note:	Not Reported
Level reading date:	1940-12-28	Feet below surface:	Not Reported
Feet to sea level:	-22.32	Note:	Not Reported
Level reading date:	1940-12-21	Feet below surface:	Not Reported
Feet to sea level:	-22.41	Note:	Not Reported
Level reading date:	1940-12-14	Feet below surface:	Not Reported
Feet to sea level:	-22.53	Note:	Not Reported
Level reading date:	1940-12-07	Feet below surface:	Not Reported
Feet to sea level:	-22.63	Note:	Not Reported
Level reading date:	1940-11-30	Feet below surface:	Not Reported
Feet to sea level:	-22.76	Note:	Not Reported
Level reading date:	1940-11-23	Feet below surface:	Not Reported
Feet to sea level:	-22.89	Note:	Not Reported
Level reading date:	1940-11-16	Feet below surface:	Not Reported
Feet to sea level:	-23.01	Note:	Not Reported
Level reading date:	1940-11-09	Feet below surface:	Not Reported
Feet to sea level:	-23.17	Note:	Not Reported
Level reading date:	1940-11-02	Feet below surface:	Not Reported
Feet to sea level:	-23.33	Note:	Not Reported
Level reading date:	1940-10-26	Feet below surface:	Not Reported
Feet to sea level:	-23.49	Note:	Not Reported
Level reading date:	1940-10-19	Feet below surface:	Not Reported
Feet to sea level:	-23.66	Note:	Not Reported
Level reading date:	1940-10-12	Feet below surface:	Not Reported
Feet to sea level:	-23.81	Note:	Not Reported
Level reading date:	1940-10-05	Feet below surface:	Not Reported
Feet to sea level:	-23.97	Note:	Not Reported
Level reading date:	1940-09-28	Feet below surface:	Not Reported
Feet to sea level:	-23.98	Note:	Not Reported
Level reading date:	1940-09-21	Feet below surface:	Not Reported
Feet to sea level:	-23.92	Note:	Not Reported
Level reading date:	1940-09-14	Feet below surface:	Not Reported
Feet to sea level:	-23.97	Note:	Not Reported
Level reading date:	1940-09-07	Feet below surface:	Not Reported
Feet to sea level:	-23.95	Note:	Not Reported
Level reading date:	1940-08-31	Feet below surface:	Not Reported
Feet to sea level:	-23.83	Note:	Not Reported
Level reading date:	1940-08-24	Feet below surface:	Not Reported
Feet to sea level:	-23.84	Note:	Not Reported

Level reading date:	1940-08-17	Feet below surface:	Not Reported
Feet to sea level:	-23.79	Note:	Not Reported
Level reading date:	1940-08-10	Feet below surface:	Not Reported
Feet to sea level:	-23.73	Note:	Not Reported
Level reading date:	1940-08-03	Feet below surface:	Not Reported
Feet to sea level:	-23.64	Note:	Not Reported
Level reading date:	1940-07-27	Feet below surface:	Not Reported
Feet to sea level:	-23.61	Note:	Not Reported
Level reading date:	1940-07-20	Feet below surface:	Not Reported
Feet to sea level:	-23.64	Note:	Not Reported
Level reading date:	1940-07-13	Feet below surface:	Not Reported
Feet to sea level:	-23.40	Note:	Not Reported
Level reading date:	1940-07-06	Feet below surface:	Not Reported
Feet to sea level:	-23.38	Note:	Not Reported
Level reading date:	1940-06-29	Feet below surface:	Not Reported
Feet to sea level:	-23.20	Note:	Not Reported
Level reading date:	1940-06-22	Feet below surface:	Not Reported
Feet to sea level:	-23.23	Note:	Not Reported
Level reading date:	1940-06-15	Feet below surface:	Not Reported
Feet to sea level:	-23.12	Note:	Not Reported
Level reading date:	1940-06-08	Feet below surface:	Not Reported
Feet to sea level:	-23.01	Note:	Not Reported
Level reading date:	1940-06-01	Feet below surface:	Not Reported
Feet to sea level:	-22.85	Note:	Not Reported
Level reading date:	1940-05-25	Feet below surface:	Not Reported
Feet to sea level:	-22.84	Note:	Not Reported
Level reading date:	1940-05-18	Feet below surface:	Not Reported
Feet to sea level:	-22.83	Note:	Not Reported
Level reading date:	1940-05-11	Feet below surface:	Not Reported
Feet to sea level:	-22.86	Note:	Not Reported
Level reading date:	1940-05-04	Feet below surface:	Not Reported
Feet to sea level:	-22.81	Note:	Not Reported
Level reading date:	1940-04-27	Feet below surface:	Not Reported
Feet to sea level:	-22.83	Note:	Not Reported
Level reading date:	1940-04-20	Feet below surface:	Not Reported
Feet to sea level:	-22.81	Note:	Not Reported
Level reading date:	1940-04-13	Feet below surface:	Not Reported
Feet to sea level:	-22.84	Note:	Not Reported
Level reading date:	1940-04-06	Feet below surface:	Not Reported
Feet to sea level:	-22.85	Note:	Not Reported
Level reading date:	1940-03-30	Feet below surface:	Not Reported
Feet to sea level:	-22.84	Note:	Not Reported

Level reading date:	1940-03-23	Feet below surface:	Not Reported
Feet to sea level:	-22.85	Note:	Not Reported
Level reading date:	1940-03-16	Feet below surface:	Not Reported
Feet to sea level:	-22.89	Note:	Not Reported
Level reading date:	1940-03-09	Feet below surface:	Not Reported
Feet to sea level:	-22.92	Note:	Not Reported
Level reading date:	1940-03-02	Feet below surface:	Not Reported
Feet to sea level:	-22.92	Note:	Not Reported
Level reading date:	1940-02-24	Feet below surface:	Not Reported
Feet to sea level:	-22.93	Note:	Not Reported
Level reading date:	1940-02-17	Feet below surface:	Not Reported
Feet to sea level:	-23.02	Note:	Not Reported
Level reading date:	1940-02-10	Feet below surface:	Not Reported
Feet to sea level:	-22.96	Note:	Not Reported
Level reading date:	1940-02-03	Feet below surface:	Not Reported
Feet to sea level:	-23.00	Note:	Not Reported
Level reading date:	1940-01-27	Feet below surface:	Not Reported
Feet to sea level:	-23.01	Note:	Not Reported
Level reading date:	1940-01-20	Feet below surface:	Not Reported
Feet to sea level:	-23.01	Note:	Not Reported
Level reading date:	1940-01-13	Feet below surface:	Not Reported
Feet to sea level:	-23.04	Note:	Not Reported
Level reading date:	1940-01-06	Feet below surface:	Not Reported
Feet to sea level:	-23.05	Note:	Not Reported
Level reading date:	1939-12-30	Feet below surface:	Not Reported
Feet to sea level:	-23.06	Note:	Not Reported
Level reading date:	1939-12-23	Feet below surface:	Not Reported
Feet to sea level:	-23.07	Note:	Not Reported
Level reading date:	1939-12-16	Feet below surface:	Not Reported
Feet to sea level:	-23.14	Note:	Not Reported
Level reading date:	1939-12-09	Feet below surface:	Not Reported
Feet to sea level:	-23.21	Note:	Not Reported
Level reading date:	1939-12-02	Feet below surface:	Not Reported
Feet to sea level:	-23.40	Note:	Not Reported
Level reading date:	1939-11-25	Feet below surface:	Not Reported
Feet to sea level:	-23.61	Note:	Not Reported
Level reading date:	1939-11-18	Feet below surface:	Not Reported
Feet to sea level:	-23.82	Note:	Not Reported
Level reading date:	1939-11-11	Feet below surface:	Not Reported
Feet to sea level:	-24.00	Note:	Not Reported
Level reading date:	1939-11-04	Feet below surface:	Not Reported
Feet to sea level:	-24.16	Note:	Not Reported

Level reading date:	1939-10-28	Feet below surface:	Not Reported
Feet to sea level:	-24.21	Note:	Not Reported
Level reading date:	1939-10-21	Feet below surface:	Not Reported
Feet to sea level:	-24.25	Note:	Not Reported
Level reading date:	1939-10-14	Feet below surface:	Not Reported
Feet to sea level:	-24.33	Note:	Not Reported
Level reading date:	1939-10-07	Feet below surface:	Not Reported
Feet to sea level:	-24.38	Note:	Not Reported
Level reading date:	1939-09-30	Feet below surface:	Not Reported
Feet to sea level:	-24.46	Note:	Not Reported
Level reading date:	1939-09-23	Feet below surface:	Not Reported
Feet to sea level:	-24.35	Note:	Not Reported
Level reading date:	1939-09-16	Feet below surface:	Not Reported
Feet to sea level:	-24.21	Note:	Not Reported
Level reading date:	1939-09-08	Feet below surface:	Not Reported
Feet to sea level:	-24.35	Note:	Not Reported
Level reading date:	1939-09-01	Feet below surface:	Not Reported
Feet to sea level:	-24.32	Note:	Not Reported
Level reading date:	1939-08-25	Feet below surface:	Not Reported
Feet to sea level:	-24.29	Note:	Not Reported
Level reading date:	1939-08-18	Feet below surface:	Not Reported
Feet to sea level:	-24.25	Note:	Not Reported
Level reading date:	1939-08-11	Feet below surface:	Not Reported
Feet to sea level:	-24.24	Note:	Not Reported
Level reading date:	1939-08-04	Feet below surface:	Not Reported
Feet to sea level:	-24.20	Note:	Not Reported
Level reading date:	1939-07-28	Feet below surface:	Not Reported
Feet to sea level:	-23.81	Note:	Not Reported
Level reading date:	1939-07-21	Feet below surface:	Not Reported
Feet to sea level:	-24.05	Note:	Not Reported
Level reading date:	1939-07-14	Feet below surface:	Not Reported
Feet to sea level:	-23.99	Note:	Not Reported
Level reading date:	1939-07-07	Feet below surface:	Not Reported
Feet to sea level:	-23.94	Note:	Not Reported
Level reading date:	1939-06-30	Feet below surface:	Not Reported
Feet to sea level:	-23.85	Note:	Not Reported
Level reading date:	1939-06-23	Feet below surface:	Not Reported
Feet to sea level:	-23.82	Note:	Not Reported
Level reading date:	1939-06-16	Feet below surface:	Not Reported
Feet to sea level:	-23.79	Note:	Not Reported
Level reading date:	1939-06-09	Feet below surface:	Not Reported
Feet to sea level:	-23.73	Note:	Not Reported

Level reading date:	1939-06-02	Feet below surface:	Not Reported
Feet to sea level:	-23.64	Note:	Not Reported
Level reading date:	1939-05-26	Feet below surface:	Not Reported
Feet to sea level:	-23.54	Note:	Not Reported
Level reading date:	1939-05-19	Feet below surface:	Not Reported
Feet to sea level:	-23.47	Note:	Not Reported
Level reading date:	1939-05-12	Feet below surface:	Not Reported
Feet to sea level:	-23.41	Note:	Not Reported
Level reading date:	1939-05-05	Feet below surface:	Not Reported
Feet to sea level:	-23.30	Note:	Not Reported
Level reading date:	1939-04-28	Feet below surface:	Not Reported
Feet to sea level:	-23.35	Note:	Not Reported
Level reading date:	1939-04-21	Feet below surface:	Not Reported
Feet to sea level:	-23.40	Note:	Not Reported
Level reading date:	1939-04-15	Feet below surface:	Not Reported
Feet to sea level:	-23.37	Note:	Not Reported
Level reading date:	1939-04-08	Feet below surface:	Not Reported
Feet to sea level:	-23.52	Note:	Not Reported
Level reading date:	1939-03-31	Feet below surface:	Not Reported
Feet to sea level:	-23.66	Note:	Not Reported
Level reading date:	1939-03-24	Feet below surface:	Not Reported
Feet to sea level:	-23.73	Note:	Not Reported
Level reading date:	1939-03-17	Feet below surface:	Not Reported
Feet to sea level:	-23.77	Note:	Not Reported
Level reading date:	1939-03-10	Feet below surface:	Not Reported
Feet to sea level:	-23.68	Note:	Not Reported
Level reading date:	1939-03-03	Feet below surface:	Not Reported
Feet to sea level:	-23.74	Note:	Not Reported
Level reading date:	1939-02-24	Feet below surface:	Not Reported
Feet to sea level:	-23.80	Note:	Not Reported
Level reading date:	1939-02-17	Feet below surface:	Not Reported
Feet to sea level:	-23.84	Note:	Not Reported
Level reading date:	1939-02-10	Feet below surface:	Not Reported
Feet to sea level:	-23.89	Note:	Not Reported
Level reading date:	1939-02-03	Feet below surface:	Not Reported
Feet to sea level:	-23.93	Note:	Not Reported
Level reading date:	1939-01-27	Feet below surface:	Not Reported
Feet to sea level:	-24.04	Note:	Not Reported
Level reading date:	1939-01-20	Feet below surface:	Not Reported
Feet to sea level:	-24.06	Note:	Not Reported
Level reading date:	1939-01-13	Feet below surface:	Not Reported
Feet to sea level:	-24.12	Note:	Not Reported

Level reading date:	1939-01-06	Feet below surface:	Not Reported
Feet to sea level:	-24.21	Note:	Not Reported
Level reading date:	1938-12-30	Feet below surface:	Not Reported
Feet to sea level:	-24.28	Note:	Not Reported
Level reading date:	1938-12-23	Feet below surface:	Not Reported
Feet to sea level:	-24.35	Note:	Not Reported
Level reading date:	1938-12-16	Feet below surface:	Not Reported
Feet to sea level:	-24.42	Note:	Not Reported
Level reading date:	1938-12-09	Feet below surface:	Not Reported
Feet to sea level:	-24.53	Note:	Not Reported
Level reading date:	1938-12-02	Feet below surface:	Not Reported
Feet to sea level:	-24.53	Note:	Not Reported
Level reading date:	1938-11-25	Feet below surface:	Not Reported
Feet to sea level:	-24.57	Note:	Not Reported
Level reading date:	1938-11-18	Feet below surface:	Not Reported
Feet to sea level:	-24.60	Note:	Not Reported
Level reading date:	1938-11-04	Feet below surface:	Not Reported
Feet to sea level:	-24.69	Note:	Not Reported
Level reading date:	1938-10-28	Feet below surface:	Not Reported
Feet to sea level:	-24.73	Note:	Not Reported
Level reading date:	1938-10-21	Feet below surface:	Not Reported
Feet to sea level:	-24.80	Note:	Not Reported
Level reading date:	1938-10-14	Feet below surface:	Not Reported
Feet to sea level:	-24.88	Note:	Not Reported
Level reading date:	1938-10-07	Feet below surface:	Not Reported
Feet to sea level:	-24.99	Note:	Not Reported
Level reading date:	1938-09-23	Feet below surface:	Not Reported
Feet to sea level:	-25.15	Note:	Not Reported
Level reading date:	1938-09-16	Feet below surface:	Not Reported
Feet to sea level:	-25.23	Note:	Not Reported
Level reading date:	1938-09-09	Feet below surface:	Not Reported
Feet to sea level:	-25.28	Note:	Not Reported
Level reading date:	1938-09-02	Feet below surface:	Not Reported
Feet to sea level:	-25.25	Note:	Not Reported
Level reading date:	1938-08-26	Feet below surface:	Not Reported
Feet to sea level:	-25.15	Note:	Not Reported
Level reading date:	1938-08-19	Feet below surface:	Not Reported
Feet to sea level:	-25.04	Note:	Not Reported
Level reading date:	1938-08-12	Feet below surface:	Not Reported
Feet to sea level:	-24.92	Note:	Not Reported
Level reading date:	1938-08-05	Feet below surface:	Not Reported
Feet to sea level:	-24.85	Note:	Not Reported

Level reading date:	1938-07-29	Feet below surface:	Not Reported
Feet to sea level:	-24.71	Note:	Not Reported
Level reading date:	1938-07-22	Feet below surface:	Not Reported
Feet to sea level:	-24.61	Note:	Not Reported
Level reading date:	1938-07-15	Feet below surface:	Not Reported
Feet to sea level:	-24.51	Note:	Not Reported
Level reading date:	1938-07-08	Feet below surface:	Not Reported
Feet to sea level:	-24.15	Note:	Not Reported
Level reading date:	1938-07-01	Feet below surface:	Not Reported
Feet to sea level:	-24.21	Note:	Not Reported
Level reading date:	1938-06-25	Feet below surface:	Not Reported
Feet to sea level:	-24.06	Note:	Not Reported
Level reading date:	1938-06-18	Feet below surface:	Not Reported
Feet to sea level:	-23.71	Note:	Not Reported
Level reading date:	1938-06-11	Feet below surface:	Not Reported
Feet to sea level:	-23.73	Note:	Not Reported
Level reading date:	1938-06-04	Feet below surface:	Not Reported
Feet to sea level:	-23.70	Note:	Not Reported
Level reading date:	1938-05-28	Feet below surface:	Not Reported
Feet to sea level:	-23.80	Note:	Not Reported
Level reading date:	1938-05-21	Feet below surface:	Not Reported
Feet to sea level:	-23.79	Note:	Not Reported
Level reading date:	1938-05-14	Feet below surface:	Not Reported
Feet to sea level:	-23.81	Note:	Not Reported
Level reading date:	1938-05-07	Feet below surface:	Not Reported
Feet to sea level:	-23.84	Note:	Not Reported
Level reading date:	1938-04-30	Feet below surface:	Not Reported
Feet to sea level:	-23.92	Note:	Not Reported
Level reading date:	1938-04-23	Feet below surface:	Not Reported
Feet to sea level:	-23.94	Note:	Not Reported
Level reading date:	1938-04-16	Feet below surface:	Not Reported
Feet to sea level:	-24.00	Note:	Not Reported
Level reading date:	1938-04-09	Feet below surface:	Not Reported
Feet to sea level:	-24.04	Note:	Not Reported
Level reading date:	1938-04-02	Feet below surface:	Not Reported
Feet to sea level:	-24.13	Note:	Not Reported
Level reading date:	1938-03-26	Feet below surface:	Not Reported
Feet to sea level:	-24.23	Note:	Not Reported
Level reading date:	1938-03-19	Feet below surface:	Not Reported
Feet to sea level:	-24.28	Note:	Not Reported
Level reading date:	1938-03-12	Feet below surface:	Not Reported
Feet to sea level:	-24.40	Note:	Not Reported

Level reading date:	1938-03-05	Feet below surface:	Not Reported
Feet to sea level:	-24.89	Note:	Not Reported
Level reading date:	1938-02-26	Feet below surface:	Not Reported
Feet to sea level:	-26.59	Note:	Not Reported
Level reading date:	1938-02-19	Feet below surface:	Not Reported
Feet to sea level:	-26.67	Note:	Not Reported
Level reading date:	1938-02-12	Feet below surface:	Not Reported
Feet to sea level:	-28.05	Note:	Not Reported
Level reading date:	1938-02-04	Feet below surface:	Not Reported
Feet to sea level:	-28.37	Note:	Not Reported
Level reading date:	1938-01-28	Feet below surface:	Not Reported
Feet to sea level:	-29.07	Note:	Not Reported
Level reading date:	1938-01-21	Feet below surface:	Not Reported
Feet to sea level:	-29.20	Note:	Not Reported
Level reading date:	1938-01-14	Feet below surface:	Not Reported
Feet to sea level:	-28.78	Note:	Not Reported
Level reading date:	1938-01-07	Feet below surface:	Not Reported
Feet to sea level:	-29.34	Note:	Not Reported
Level reading date:	1937-12-31	Feet below surface:	Not Reported
Feet to sea level:	-29.31	Note:	Not Reported
Level reading date:	1937-12-24	Feet below surface:	Not Reported
Feet to sea level:	-29.24	Note:	Not Reported
Level reading date:	1937-12-18	Feet below surface:	Not Reported
Feet to sea level:	-29.62	Note:	Not Reported
Level reading date:	1937-12-11	Feet below surface:	Not Reported
Feet to sea level:	-29.69	Note:	Not Reported

41
WSW
1/2 - 1 Mile
Lower

FED USGS **USGS40000829033**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 3483. 1	Type:	Well
Description:	Throop Ave and Bartleet St, Tompkins Park North		
HUC:	02030201	Drainage Area:	Not Reported
Drainage Area Units:	Not Reported	Contrib Drainage Area:	Not Reported
Contrib Drainage Area Unts:	Not Reported		
Aquifer:	Northern Atlantic Coastal Plain aquifer system		
Formation Type:	Glacial Aquifer, Upper	Aquifer Type:	Unconfined single aquifer
Construction Date:	20001018	Well Depth:	45.6
Well Depth Units:	ft	Well Hole Depth:	45.6
Well Hole Depth Units:	ft		

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

42
NNE
1/2 - 1 Mile
Lower

FED USGS **USGS40000829791**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	Q 436. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Not Reported
Aquifer Type:	Not Reported	Construction Date:	Not Reported
Well Depth:	Not Reported	Well Depth Units:	Not Reported
Well Hole Depth:	217	Well Hole Depth Units:	ft

43
SW
1/2 - 1 Mile
Lower

FED USGS **USGS40000828916**

Organization ID:	USGS-NY	Organization Name:	USGS New York Water Science Center
Monitor Location:	K 1237. 1	Type:	Well
Description:	Not Reported	HUC:	02030201
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Northern Atlantic Coastal Plain aquifer system		
Formation Type:	Glacial Aquifer, Upper	Aquifer Type:	Not Reported
Construction Date:	Not Reported	Well Depth:	63
Well Depth Units:	ft	Well Hole Depth:	Not Reported
Well Hole Depth Units:	Not Reported		

Ground water levels,Number of Measurements:	239	Level reading date:	1953-08-03
Feet below surface:	Not Reported	Feet to sea level:	-10.35
Note:	Not Reported		

Level reading date:	1953-06-24	Feet below surface:	Not Reported
Feet to sea level:	-10.82	Note:	Not Reported
Level reading date:	1953-05-25	Feet below surface:	Not Reported
Feet to sea level:	-11.47	Note:	Not Reported
Level reading date:	1953-04-27	Feet below surface:	Not Reported
Feet to sea level:	-11.52	Note:	Not Reported
Level reading date:	1953-03-24	Feet below surface:	Not Reported
Feet to sea level:	-11.87	Note:	Not Reported
Level reading date:	1953-02-27	Feet below surface:	Not Reported
Feet to sea level:	-12.15	Note:	Not Reported
Level reading date:	1953-02-05	Feet below surface:	Not Reported
Feet to sea level:	-12.29	Note:	Not Reported
Level reading date:	1952-12-24	Feet below surface:	Not Reported
Feet to sea level:	-12.99	Note:	Not Reported
Level reading date:	1952-12-05	Feet below surface:	Not Reported

Feet to sea level:	-13.71	Note:	Not Reported
Level reading date:	1952-11-03	Feet below surface:	Not Reported
Feet to sea level:	-14.87	Note:	Not Reported
Level reading date:	1952-09-22	Feet below surface:	Not Reported
Feet to sea level:	-15.30	Note:	Not Reported
Level reading date:	1952-08-25	Feet below surface:	Not Reported
Feet to sea level:	-15.59	Note:	Not Reported
Level reading date:	1952-07-23	Feet below surface:	Not Reported
Feet to sea level:	-16.80	Note:	Not Reported
Level reading date:	1952-06-24	Feet below surface:	Not Reported
Feet to sea level:	-17.04	Note:	Not Reported
Level reading date:	1952-05-27	Feet below surface:	Not Reported
Feet to sea level:	-17.69	Note:	Not Reported
Level reading date:	1952-04-29	Feet below surface:	Not Reported
Feet to sea level:	-18.25	Note:	Not Reported
Level reading date:	1952-03-24	Feet below surface:	Not Reported
Feet to sea level:	-18.88	Note:	Not Reported
Level reading date:	1952-02-20	Feet below surface:	Not Reported
Feet to sea level:	-19.61	Note:	Not Reported
Level reading date:	1952-01-29	Feet below surface:	Not Reported
Feet to sea level:	-20.09	Note:	Not Reported
Level reading date:	1951-12-20	Feet below surface:	Not Reported
Feet to sea level:	-21.08	Note:	Not Reported
Level reading date:	1951-11-28	Feet below surface:	Not Reported
Feet to sea level:	-21.42	Note:	Not Reported
Level reading date:	1951-11-01	Feet below surface:	Not Reported
Feet to sea level:	-22.33	Note:	Not Reported
Level reading date:	1951-09-26	Feet below surface:	Not Reported
Feet to sea level:	-23.38	Note:	Not Reported
Level reading date:	1951-08-28	Feet below surface:	Not Reported
Feet to sea level:	-23.62	Note:	Not Reported
Level reading date:	1951-07-26	Feet below surface:	Not Reported
Feet to sea level:	-23.39	Note:	Not Reported
Level reading date:	1951-06-28	Feet below surface:	Not Reported
Feet to sea level:	-23.32	Note:	Not Reported
Level reading date:	1951-05-29	Feet below surface:	Not Reported
Feet to sea level:	-23.62	Note:	Not Reported
Level reading date:	1951-05-02	Feet below surface:	Not Reported
Feet to sea level:	-24.12	Note:	Not Reported
Level reading date:	1951-03-27	Feet below surface:	Not Reported
Feet to sea level:	-24.82	Note:	Not Reported

Level reading date:	1951-02-26	Feet below surface:	Not Reported
Feet to sea level:	-25.18	Note:	Not Reported
Level reading date:	1951-01-30	Feet below surface:	Not Reported
Feet to sea level:	-25.57	Note:	Not Reported
Level reading date:	1950-12-20	Feet below surface:	Not Reported
Feet to sea level:	-26.38	Note:	Not Reported
Level reading date:	1950-11-28	Feet below surface:	Not Reported
Feet to sea level:	-26.71	Note:	Not Reported
Level reading date:	1950-10-31	Feet below surface:	Not Reported
Feet to sea level:	-26.92	Note:	Not Reported
Level reading date:	1950-09-27	Feet below surface:	Not Reported
Feet to sea level:	-26.62	Note:	Not Reported
Level reading date:	1950-08-29	Feet below surface:	Not Reported
Feet to sea level:	-26.17	Note:	Not Reported
Level reading date:	1950-07-27	Feet below surface:	Not Reported
Feet to sea level:	-25.86	Note:	Not Reported
Level reading date:	1950-06-29	Feet below surface:	Not Reported
Feet to sea level:	-26.08	Note:	Not Reported
Level reading date:	1950-06-05	Feet below surface:	Not Reported
Feet to sea level:	-25.84	Note:	Not Reported
Level reading date:	1950-04-27	Feet below surface:	Not Reported
Feet to sea level:	-25.66	Note:	Not Reported
Level reading date:	1950-03-29	Feet below surface:	Not Reported
Feet to sea level:	-25.94	Note:	Not Reported
Level reading date:	1950-03-01	Feet below surface:	Not Reported
Feet to sea level:	-25.80	Note:	Not Reported
Level reading date:	1950-01-26	Feet below surface:	Not Reported
Feet to sea level:	-26.08	Note:	Not Reported
Level reading date:	1949-12-28	Feet below surface:	Not Reported
Feet to sea level:	-26.39	Note:	Not Reported
Level reading date:	1949-11-28	Feet below surface:	Not Reported
Feet to sea level:	-27.13	Note:	Not Reported
Level reading date:	1949-10-31	Feet below surface:	Not Reported
Feet to sea level:	-27.37	Note:	Not Reported
Level reading date:	1949-09-28	Feet below surface:	Not Reported
Feet to sea level:	-27.27	Note:	Not Reported
Level reading date:	1949-08-31	Feet below surface:	Not Reported
Feet to sea level:	-27.25	Note:	Not Reported
Level reading date:	1949-07-28	Feet below surface:	Not Reported
Feet to sea level:	-27.38	Note:	Not Reported
Level reading date:	1949-06-30	Feet below surface:	Not Reported
Feet to sea level:	-27.83	Note:	Not Reported

Level reading date:	1949-06-01	Feet below surface:	Not Reported
Feet to sea level:	-28.15	Note:	Not Reported
Level reading date:	1949-04-28	Feet below surface:	Not Reported
Feet to sea level:	-28.60	Note:	Not Reported
Level reading date:	1949-04-05	Feet below surface:	Not Reported
Feet to sea level:	-29.10	Note:	Not Reported
Level reading date:	1949-02-21	Feet below surface:	Not Reported
Feet to sea level:	-29.95	Note:	Not Reported
Level reading date:	1949-01-27	Feet below surface:	Not Reported
Feet to sea level:	-30.24	Note:	Not Reported
Level reading date:	1948-12-28	Feet below surface:	Not Reported
Feet to sea level:	-29.76	Note:	Not Reported
Level reading date:	1948-12-09	Feet below surface:	Not Reported
Feet to sea level:	-30.23	Note:	Not Reported
Level reading date:	1948-11-04	Feet below surface:	Not Reported
Feet to sea level:	-31.37	Note:	Not Reported
Level reading date:	1948-10-04	Feet below surface:	Not Reported
Feet to sea level:	-31.73	Note:	Not Reported
Level reading date:	1948-08-30	Feet below surface:	Not Reported
Feet to sea level:	-31.53	Note:	Not Reported
Level reading date:	1948-07-26	Feet below surface:	Not Reported
Feet to sea level:	-32.56	Note:	Not Reported
Level reading date:	1948-06-30	Feet below surface:	Not Reported
Feet to sea level:	-33.01	Note:	Not Reported
Level reading date:	1948-06-02	Feet below surface:	Not Reported
Feet to sea level:	-32.78	Note:	Not Reported
Level reading date:	1948-04-27	Feet below surface:	Not Reported
Feet to sea level:	-32.95	Note:	Not Reported
Level reading date:	1948-03-26	Feet below surface:	Not Reported
Feet to sea level:	-32.58	Note:	Not Reported
Level reading date:	1948-03-02	Feet below surface:	Not Reported
Feet to sea level:	-32.65	Note:	Not Reported
Level reading date:	1948-02-03	Feet below surface:	Not Reported
Feet to sea level:	-33.11	Note:	Not Reported
Level reading date:	1948-01-08	Feet below surface:	Not Reported
Feet to sea level:	-33.79	Note:	Not Reported
Level reading date:	1947-12-16	Feet below surface:	Not Reported
Feet to sea level:	-34.56	Note:	Not Reported
Level reading date:	1947-11-26	Feet below surface:	Not Reported
Feet to sea level:	-34.98	Note:	Not Reported
Level reading date:	1947-11-20	Feet below surface:	Not Reported
Feet to sea level:	-34.93	Note:	Not Reported

Level reading date:	1947-10-31	Feet below surface:	Not Reported
Feet to sea level:	-35.61	Note:	Not Reported
Level reading date:	1947-10-14	Feet below surface:	Not Reported
Feet to sea level:	-35.59	Note:	Not Reported
Level reading date:	1947-10-07	Feet below surface:	Not Reported
Feet to sea level:	-35.47	Note:	Not Reported
Level reading date:	1947-09-30	Feet below surface:	Not Reported
Feet to sea level:	-35.23	Note:	Not Reported
Level reading date:	1947-09-15	Feet below surface:	Not Reported
Feet to sea level:	-35.68	Note:	Not Reported
Level reading date:	1947-08-27	Feet below surface:	Not Reported
Feet to sea level:	-35.57	Note:	Not Reported
Level reading date:	1947-08-13	Feet below surface:	Not Reported
Feet to sea level:	-35.09	Note:	Not Reported
Level reading date:	1947-07-30	Feet below surface:	Not Reported
Feet to sea level:	-36.02	Note:	Not Reported
Level reading date:	1947-07-23	Feet below surface:	Not Reported
Feet to sea level:	-35.92	Note:	Not Reported
Level reading date:	1947-07-16	Feet below surface:	Not Reported
Feet to sea level:	-35.87	Note:	Not Reported
Level reading date:	1947-07-07	Feet below surface:	Not Reported
Feet to sea level:	-35.75	Note:	Not Reported
Level reading date:	1947-07-02	Feet below surface:	Not Reported
Feet to sea level:	-35.88	Note:	Not Reported
Level reading date:	1947-07-01	Feet below surface:	Not Reported
Feet to sea level:	-35.87	Note:	Not Reported
Level reading date:	1947-06-30	Feet below surface:	Not Reported
Feet to sea level:	-35.86	Note:	Not Reported
Level reading date:	1947-06-24	Feet below surface:	Not Reported
Feet to sea level:	-35.81	Note:	Not Reported
Level reading date:	1947-05-27	Feet below surface:	Not Reported
Feet to sea level:	-36.12	Note:	Not Reported
Level reading date:	1947-05-07	Feet below surface:	Not Reported
Feet to sea level:	-36.42	Note:	Not Reported
Level reading date:	1947-04-04	Feet below surface:	Not Reported
Feet to sea level:	-36.47	Note:	Not Reported
Level reading date:	1947-03-05	Feet below surface:	Not Reported
Feet to sea level:	-36.15	Note:	Not Reported
Level reading date:	1947-01-24	Feet below surface:	Not Reported
Feet to sea level:	-36.53	Note:	Not Reported
Level reading date:	1946-12-27	Feet below surface:	Not Reported
Feet to sea level:	-36.30	Note:	Not Reported

Level reading date:	1946-11-26	Feet below surface:	Not Reported
Feet to sea level:	-36.44	Note:	Not Reported
Level reading date:	1946-10-22	Feet below surface:	Not Reported
Feet to sea level:	-35.92	Note:	Not Reported
Level reading date:	1946-09-26	Feet below surface:	Not Reported
Feet to sea level:	-36.04	Note:	Not Reported
Level reading date:	1946-08-30	Feet below surface:	Not Reported
Feet to sea level:	-35.71	Note:	Not Reported
Level reading date:	1946-07-26	Feet below surface:	Not Reported
Feet to sea level:	-35.18	Note:	Not Reported
Level reading date:	1946-07-01	Feet below surface:	Not Reported
Feet to sea level:	-34.64	Note:	Not Reported
Level reading date:	1946-06-10	Feet below surface:	Not Reported
Feet to sea level:	-34.27	Note:	Not Reported
Level reading date:	1946-05-10	Feet below surface:	Not Reported
Feet to sea level:	-34.09	Note:	Not Reported
Level reading date:	1946-04-12	Feet below surface:	Not Reported
Feet to sea level:	-33.87	Note:	Not Reported
Level reading date:	1946-03-18	Feet below surface:	Not Reported
Feet to sea level:	-33.72	Note:	Not Reported
Level reading date:	1946-02-14	Feet below surface:	Not Reported
Feet to sea level:	-33.90	Note:	Not Reported
Level reading date:	1946-01-08	Feet below surface:	Not Reported
Feet to sea level:	-33.92	Note:	Not Reported
Level reading date:	1945-12-04	Feet below surface:	Not Reported
Feet to sea level:	-34.54	Note:	Not Reported
Level reading date:	1945-11-06	Feet below surface:	Not Reported
Feet to sea level:	-34.68	Note:	Not Reported
Level reading date:	1945-09-28	Feet below surface:	Not Reported
Feet to sea level:	-34.43	Note:	Not Reported
Level reading date:	1945-09-12	Feet below surface:	Not Reported
Feet to sea level:	-34.11	Note:	Not Reported
Level reading date:	1945-08-08	Feet below surface:	Not Reported
Feet to sea level:	-34.02	Note:	Not Reported
Level reading date:	1945-07-03	Feet below surface:	Not Reported
Feet to sea level:	-34.19	Note:	Not Reported
Level reading date:	1945-06-04	Feet below surface:	Not Reported
Feet to sea level:	-33.83	Note:	Not Reported
Level reading date:	1945-04-27	Feet below surface:	Not Reported
Feet to sea level:	-33.56	Note:	Not Reported
Level reading date:	1945-04-04	Feet below surface:	Not Reported
Feet to sea level:	-33.57	Note:	Not Reported

Level reading date:	1945-03-03	Feet below surface:	Not Reported
Feet to sea level:	-33.30	Note:	Not Reported
Level reading date:	1945-01-02	Feet below surface:	Not Reported
Feet to sea level:	-33.68	Note:	Not Reported
Level reading date:	1944-12-06	Feet below surface:	Not Reported
Feet to sea level:	-34.61	Note:	Not Reported
Level reading date:	1944-10-28	Feet below surface:	Not Reported
Feet to sea level:	-34.33	Note:	Not Reported
Level reading date:	1944-10-04	Feet below surface:	Not Reported
Feet to sea level:	-34.30	Note:	Not Reported
Level reading date:	1944-09-02	Feet below surface:	Not Reported
Feet to sea level:	-34.36	Note:	Not Reported
Level reading date:	1944-07-31	Feet below surface:	Not Reported
Feet to sea level:	-34.68	Note:	Not Reported
Level reading date:	1944-07-05	Feet below surface:	Not Reported
Feet to sea level:	-34.58	Note:	Not Reported
Level reading date:	1944-05-27	Feet below surface:	Not Reported
Feet to sea level:	-34.44	Note:	Not Reported
Level reading date:	1944-05-05	Feet below surface:	Not Reported
Feet to sea level:	-34.01	Note:	Not Reported
Level reading date:	1944-03-30	Feet below surface:	Not Reported
Feet to sea level:	-33.85	Note:	Not Reported
Level reading date:	1944-02-26	Feet below surface:	Not Reported
Feet to sea level:	-33.58	Note:	Not Reported
Level reading date:	1944-01-29	Feet below surface:	Not Reported
Feet to sea level:	-33.61	Note:	Not Reported
Level reading date:	1944-01-01	Feet below surface:	Not Reported
Feet to sea level:	-33.66	Note:	Not Reported
Level reading date:	1943-11-27	Feet below surface:	Not Reported
Feet to sea level:	-33.71	Note:	Not Reported
Level reading date:	1943-10-30	Feet below surface:	Not Reported
Feet to sea level:	-33.82	Note:	Not Reported
Level reading date:	1943-09-25	Feet below surface:	Not Reported
Feet to sea level:	-33.47	Note:	Not Reported
Level reading date:	1943-08-28	Feet below surface:	Not Reported
Feet to sea level:	-34.45	Note:	Not Reported
Level reading date:	1943-06-26	Feet below surface:	Not Reported
Feet to sea level:	-34.03	Note:	Not Reported
Level reading date:	1943-05-29	Feet below surface:	Not Reported
Feet to sea level:	-33.96	Note:	Not Reported
Level reading date:	1943-05-01	Feet below surface:	Not Reported
Feet to sea level:	-34.06	Note:	Not Reported

Level reading date:	1943-03-27	Feet below surface:	Not Reported
Feet to sea level:	-34.01	Note:	Not Reported
Level reading date:	1943-02-27	Feet below surface:	Not Reported
Feet to sea level:	-34.26	Note:	Not Reported
Level reading date:	1943-01-30	Feet below surface:	Not Reported
Feet to sea level:	-34.15	Note:	Not Reported
Level reading date:	1943-01-02	Feet below surface:	Not Reported
Feet to sea level:	-33.69	Note:	Not Reported
Level reading date:	1942-12-26	Feet below surface:	Not Reported
Feet to sea level:	-34.07	Note:	Not Reported
Level reading date:	1942-12-19	Feet below surface:	Not Reported
Feet to sea level:	-34.36	Note:	Not Reported
Level reading date:	1942-12-12	Feet below surface:	Not Reported
Feet to sea level:	-34.30	Note:	Not Reported
Level reading date:	1942-12-05	Feet below surface:	Not Reported
Feet to sea level:	-34.28	Note:	Not Reported
Level reading date:	1942-11-28	Feet below surface:	Not Reported
Feet to sea level:	-34.27	Note:	Not Reported
Level reading date:	1942-11-21	Feet below surface:	Not Reported
Feet to sea level:	-34.32	Note:	Not Reported
Level reading date:	1942-11-14	Feet below surface:	Not Reported
Feet to sea level:	-34.16	Note:	Not Reported
Level reading date:	1942-11-07	Feet below surface:	Not Reported
Feet to sea level:	-34.06	Note:	Not Reported
Level reading date:	1942-10-31	Feet below surface:	Not Reported
Feet to sea level:	-34.02	Note:	Not Reported
Level reading date:	1942-10-24	Feet below surface:	Not Reported
Feet to sea level:	-33.91	Note:	Not Reported
Level reading date:	1942-10-17	Feet below surface:	Not Reported
Feet to sea level:	-33.76	Note:	Not Reported
Level reading date:	1942-10-10	Feet below surface:	Not Reported
Feet to sea level:	-33.89	Note:	Not Reported
Level reading date:	1942-10-03	Feet below surface:	Not Reported
Feet to sea level:	-33.78	Note:	Not Reported
Level reading date:	1942-09-26	Feet below surface:	Not Reported
Feet to sea level:	-33.67	Note:	Not Reported
Level reading date:	1942-09-19	Feet below surface:	Not Reported
Feet to sea level:	-33.71	Note:	Not Reported
Level reading date:	1942-09-12	Feet below surface:	Not Reported
Feet to sea level:	-33.71	Note:	Not Reported
Level reading date:	1942-09-05	Feet below surface:	Not Reported
Feet to sea level:	-33.72	Note:	Not Reported

Level reading date:	1942-08-29	Feet below surface:	Not Reported
Feet to sea level:	-33.53	Note:	Not Reported
Level reading date:	1942-08-22	Feet below surface:	Not Reported
Feet to sea level:	-33.37	Note:	Not Reported
Level reading date:	1942-08-15	Feet below surface:	Not Reported
Feet to sea level:	-33.21	Note:	Not Reported
Level reading date:	1942-08-08	Feet below surface:	Not Reported
Feet to sea level:	-33.04	Note:	Not Reported
Level reading date:	1942-08-01	Feet below surface:	Not Reported
Feet to sea level:	-33.59	Note:	Not Reported
Level reading date:	1942-07-25	Feet below surface:	Not Reported
Feet to sea level:	-33.73	Note:	Not Reported
Level reading date:	1942-07-18	Feet below surface:	Not Reported
Feet to sea level:	-33.69	Note:	Not Reported
Level reading date:	1942-07-11	Feet below surface:	Not Reported
Feet to sea level:	-33.83	Note:	Not Reported
Level reading date:	1942-07-04	Feet below surface:	Not Reported
Feet to sea level:	-33.98	Note:	Not Reported
Level reading date:	1942-06-27	Feet below surface:	Not Reported
Feet to sea level:	-34.08	Note:	Not Reported
Level reading date:	1942-06-20	Feet below surface:	Not Reported
Feet to sea level:	-34.11	Note:	Not Reported
Level reading date:	1942-06-13	Feet below surface:	Not Reported
Feet to sea level:	-34.16	Note:	Not Reported
Level reading date:	1942-06-06	Feet below surface:	Not Reported
Feet to sea level:	-34.12	Note:	Not Reported
Level reading date:	1942-05-30	Feet below surface:	Not Reported
Feet to sea level:	-34.16	Note:	Not Reported
Level reading date:	1942-05-23	Feet below surface:	Not Reported
Feet to sea level:	-34.18	Note:	Not Reported
Level reading date:	1942-05-16	Feet below surface:	Not Reported
Feet to sea level:	-34.16	Note:	Not Reported
Level reading date:	1942-05-09	Feet below surface:	Not Reported
Feet to sea level:	-34.18	Note:	Not Reported
Level reading date:	1942-05-02	Feet below surface:	Not Reported
Feet to sea level:	-34.13	Note:	Not Reported
Level reading date:	1942-04-25	Feet below surface:	Not Reported
Feet to sea level:	-34.25	Note:	Not Reported
Level reading date:	1942-04-18	Feet below surface:	Not Reported
Feet to sea level:	-34.34	Note:	Not Reported
Level reading date:	1942-04-11	Feet below surface:	Not Reported
Feet to sea level:	-34.28	Note:	Not Reported

Level reading date:	1942-04-04	Feet below surface:	Not Reported
Feet to sea level:	-34.30	Note:	Not Reported
Level reading date:	1942-03-28	Feet below surface:	Not Reported
Feet to sea level:	-34.36	Note:	Not Reported
Level reading date:	1942-03-21	Feet below surface:	Not Reported
Feet to sea level:	-34.09	Note:	Not Reported
Level reading date:	1942-03-14	Feet below surface:	Not Reported
Feet to sea level:	-34.13	Note:	Not Reported
Level reading date:	1942-03-07	Feet below surface:	Not Reported
Feet to sea level:	-34.18	Note:	Not Reported
Level reading date:	1942-02-28	Feet below surface:	Not Reported
Feet to sea level:	-34.39	Note:	Not Reported
Level reading date:	1942-02-21	Feet below surface:	Not Reported
Feet to sea level:	-34.35	Note:	Not Reported
Level reading date:	1942-02-14	Feet below surface:	Not Reported
Feet to sea level:	-33.62	Note:	Not Reported
Level reading date:	1942-02-07	Feet below surface:	Not Reported
Feet to sea level:	-34.51	Note:	Not Reported
Level reading date:	1942-01-31	Feet below surface:	Not Reported
Feet to sea level:	-34.14	Note:	Not Reported
Level reading date:	1942-01-24	Feet below surface:	Not Reported
Feet to sea level:	-34.38	Note:	Not Reported
Level reading date:	1942-01-17	Feet below surface:	Not Reported
Feet to sea level:	-34.15	Note:	Not Reported
Level reading date:	1942-01-10	Feet below surface:	Not Reported
Feet to sea level:	-34.03	Note:	Not Reported
Level reading date:	1942-01-03	Feet below surface:	Not Reported
Feet to sea level:	-33.96	Note:	Not Reported
Level reading date:	1941-12-27	Feet below surface:	Not Reported
Feet to sea level:	-34.26	Note:	Not Reported
Level reading date:	1941-12-20	Feet below surface:	Not Reported
Feet to sea level:	-34.27	Note:	Not Reported
Level reading date:	1941-12-13	Feet below surface:	Not Reported
Feet to sea level:	-34.29	Note:	Not Reported
Level reading date:	1941-12-06	Feet below surface:	Not Reported
Feet to sea level:	-34.55	Note:	Not Reported
Level reading date:	1941-11-29	Feet below surface:	Not Reported
Feet to sea level:	-34.36	Note:	Not Reported
Level reading date:	1941-11-22	Feet below surface:	Not Reported
Feet to sea level:	-34.17	Note:	Not Reported
Level reading date:	1941-11-15	Feet below surface:	Not Reported
Feet to sea level:	-34.31	Note:	Not Reported

Level reading date:	1941-11-08	Feet below surface:	Not Reported
Feet to sea level:	-34.20	Note:	Not Reported
Level reading date:	1941-11-01	Feet below surface:	Not Reported
Feet to sea level:	-34.30	Note:	Not Reported
Level reading date:	1941-10-25	Feet below surface:	Not Reported
Feet to sea level:	-34.17	Note:	Not Reported
Level reading date:	1941-10-18	Feet below surface:	Not Reported
Feet to sea level:	-33.81	Note:	Not Reported
Level reading date:	1941-10-11	Feet below surface:	Not Reported
Feet to sea level:	-33.98	Note:	Not Reported
Level reading date:	1941-10-04	Feet below surface:	Not Reported
Feet to sea level:	-34.06	Note:	Not Reported
Level reading date:	1941-09-27	Feet below surface:	Not Reported
Feet to sea level:	-33.79	Note:	Not Reported
Level reading date:	1941-09-20	Feet below surface:	Not Reported
Feet to sea level:	-33.78	Note:	Not Reported
Level reading date:	1941-09-13	Feet below surface:	Not Reported
Feet to sea level:	-33.66	Note:	Not Reported
Level reading date:	1941-09-06	Feet below surface:	Not Reported
Feet to sea level:	-33.65	Note:	Not Reported
Level reading date:	1941-08-30	Feet below surface:	Not Reported
Feet to sea level:	-33.27	Note:	Not Reported
Level reading date:	1941-08-23	Feet below surface:	Not Reported
Feet to sea level:	-33.50	Note:	Not Reported
Level reading date:	1941-08-16	Feet below surface:	Not Reported
Feet to sea level:	-33.40	Note:	Not Reported
Level reading date:	1941-08-09	Feet below surface:	Not Reported
Feet to sea level:	-33.15	Note:	Not Reported
Level reading date:	1941-08-02	Feet below surface:	Not Reported
Feet to sea level:	-33.25	Note:	Not Reported
Level reading date:	1941-07-26	Feet below surface:	Not Reported
Feet to sea level:	-33.19	Note:	Not Reported
Level reading date:	1941-07-19	Feet below surface:	Not Reported
Feet to sea level:	-33.28	Note:	Not Reported
Level reading date:	1941-07-12	Feet below surface:	Not Reported
Feet to sea level:	-33.13	Note:	Not Reported
Level reading date:	1941-07-05	Feet below surface:	Not Reported
Feet to sea level:	-33.08	Note:	Not Reported
Level reading date:	1941-06-28	Feet below surface:	Not Reported
Feet to sea level:	-33.15	Note:	Not Reported
Level reading date:	1941-06-21	Feet below surface:	Not Reported
Feet to sea level:	-32.72	Note:	Not Reported

Level reading date:	1941-06-14	Feet below surface:	Not Reported
Feet to sea level:	-33.08	Note:	Not Reported
Level reading date:	1941-06-07	Feet below surface:	Not Reported
Feet to sea level:	-32.90	Note:	Not Reported
Level reading date:	1941-05-31	Feet below surface:	Not Reported
Feet to sea level:	-32.71	Note:	Not Reported
Level reading date:	1941-05-24	Feet below surface:	Not Reported
Feet to sea level:	-32.81	Note:	Not Reported
Level reading date:	1941-05-17	Feet below surface:	Not Reported
Feet to sea level:	-33.01	Note:	Not Reported
Level reading date:	1941-05-10	Feet below surface:	Not Reported
Feet to sea level:	-32.87	Note:	Not Reported
Level reading date:	1941-05-03	Feet below surface:	Not Reported
Feet to sea level:	-32.64	Note:	Not Reported
Level reading date:	1941-04-26	Feet below surface:	Not Reported
Feet to sea level:	-32.83	Note:	Not Reported
Level reading date:	1941-04-19	Feet below surface:	Not Reported
Feet to sea level:	-32.68	Note:	Not Reported
Level reading date:	1941-04-12	Feet below surface:	Not Reported
Feet to sea level:	-31.56	Note:	Not Reported
Level reading date:	1941-03-29	Feet below surface:	Not Reported
Feet to sea level:	-32.67	Note:	Not Reported
Level reading date:	1941-03-22	Feet below surface:	Not Reported
Feet to sea level:	-32.67	Note:	Not Reported
Level reading date:	1941-03-15	Feet below surface:	Not Reported
Feet to sea level:	-32.24	Note:	Not Reported
Level reading date:	1941-03-08	Feet below surface:	Not Reported
Feet to sea level:	-32.64	Note:	Not Reported
Level reading date:	1941-03-01	Feet below surface:	Not Reported
Feet to sea level:	-32.46	Note:	Not Reported
Level reading date:	1941-02-22	Feet below surface:	Not Reported
Feet to sea level:	-32.41	Note:	Not Reported
Level reading date:	1941-02-15	Feet below surface:	Not Reported
Feet to sea level:	-32.10	Note:	Not Reported
Level reading date:	1941-02-08	Feet below surface:	Not Reported
Feet to sea level:	-32.81	Note:	Not Reported
Level reading date:	1941-02-01	Feet below surface:	Not Reported
Feet to sea level:	-32.29	Note:	Not Reported
Level reading date:	1941-01-25	Feet below surface:	Not Reported
Feet to sea level:	-32.44	Note:	Not Reported
Level reading date:	1941-01-18	Feet below surface:	Not Reported
Feet to sea level:	-32.90	Note:	Not Reported

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

Federal EPA Radon Zone for KINGS County: 3

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for KINGS COUNTY, NY

Number of sites tested: 51

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area	0.750 pCi/L	100%	0%	0%
Basement	1.370 pCi/L	88%	10%	2%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Freshwater Wetlands
Source: Department of Environmental Conservation
Telephone: 518-402-8961

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

New York Public Water Wells
Source: New York Department of Health
Telephone: 518-458-6731

OTHER STATE DATABASE INFORMATION

Oil and Gas Well Database
Source: Department of Environmental Conservation
Telephone: 518-402-8072
These files contain records, in the database, of wells that have been drilled.

RADON

State Database: NY Radon
Source: Department of Health
Telephone: 518-402-7556
Radon Test Results

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

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APPENDIX D
EDR HISTORIC RESEARCH DOCUMENTS

450 Johnson Avenue

450 Johnson Avenue

Brooklyn, NY 11237

Inquiry Number: 5684962.11

June 17, 2019

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

06/17/19

Site Name:

450 Johnson Avenue
450 Johnson Avenue
Brooklyn, NY 11237
EDR Inquiry # 5684962.11

Client Name:

Langan
555 Montgomery St Ste 1300
San Francisco, CA 94111
Contact: Andrew Kerr

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	*Scale*	*Details*	*Source*
2017	1"=500'	Flight Year: 2017	USDA/NAIP
2013	1"=500'	Flight Year: 2013	USDA/NAIP
2009	1"=500'	Flight Year: 2009	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
1994	1"=750'	Flight Date: April 04, 1994	USGS
1991	1"=500'	Flight Date: March 09, 1991	NAPP
1984	1"=500'	Flight Date: March 26, 1984	USDA
1980	1"=500'	Flight Date: July 25, 1980	NOAA
1976	1"=500'	Flight Date: October 29, 1976	USGS
1974	1"=500'	Flight Date: October 19, 1974	NOAA
1966	1"=500'	Flight Date: February 23, 1966	USGS
1961	1"=500'	Flight Date: April 12, 1961	EDR Proprietary Aerial Viewpoint
1954	1"=500'	Flight Date: January 04, 1954	USGS
1951	1"=500'	Flight Date: April 21, 1951	EDR Proprietary Aerial Viewpoint
1941	1"=500'	Flight Date: January 01, 1941	FirstSearch
1924	1"=500'	Flight Date: July 01, 1924	FAIR

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EDR

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YEAR: 2013
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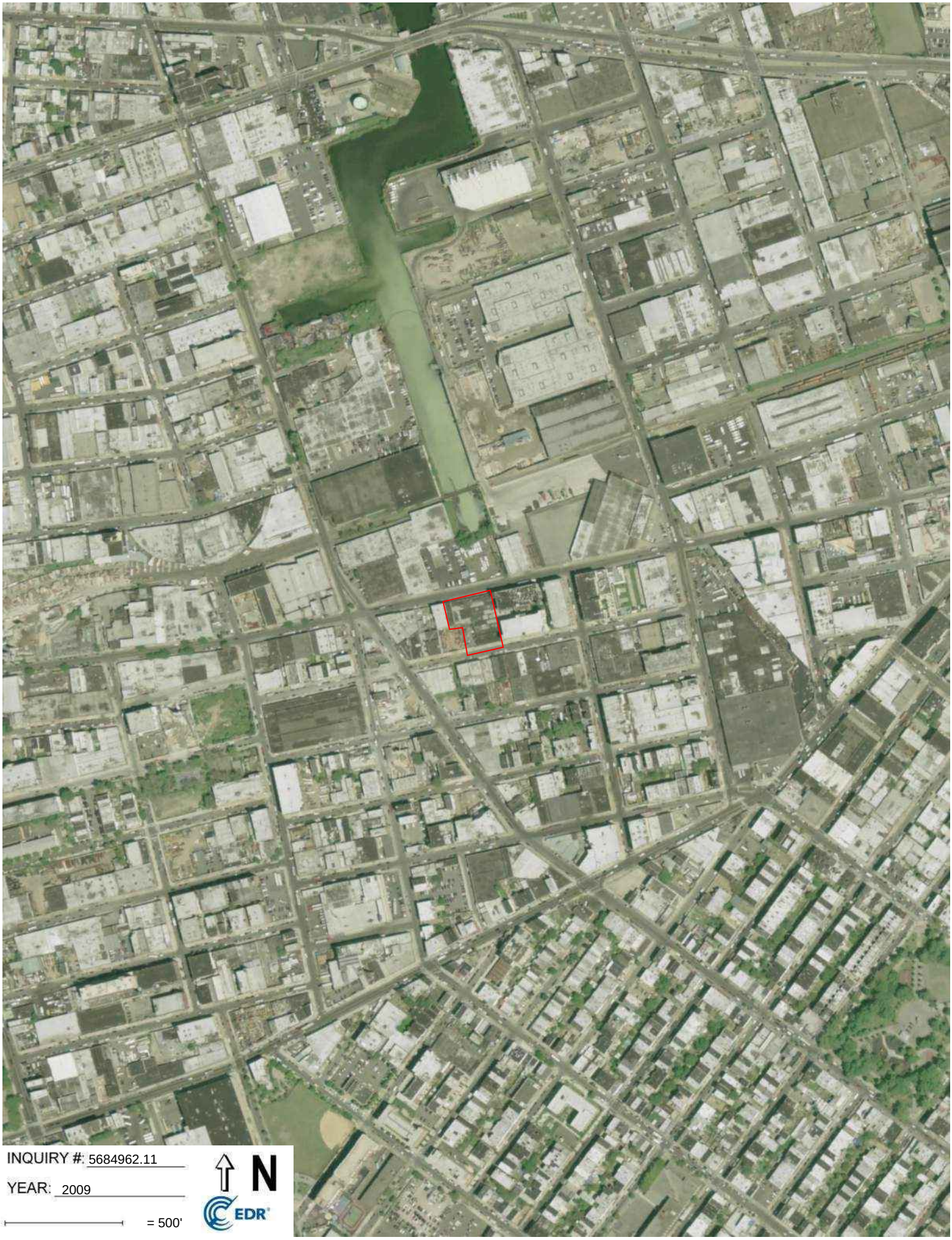
EDR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EDR

INQUIRY #: 5684962.11

YEAR: 1994

= 750'

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EDR

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YEAR: 1994

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EDR

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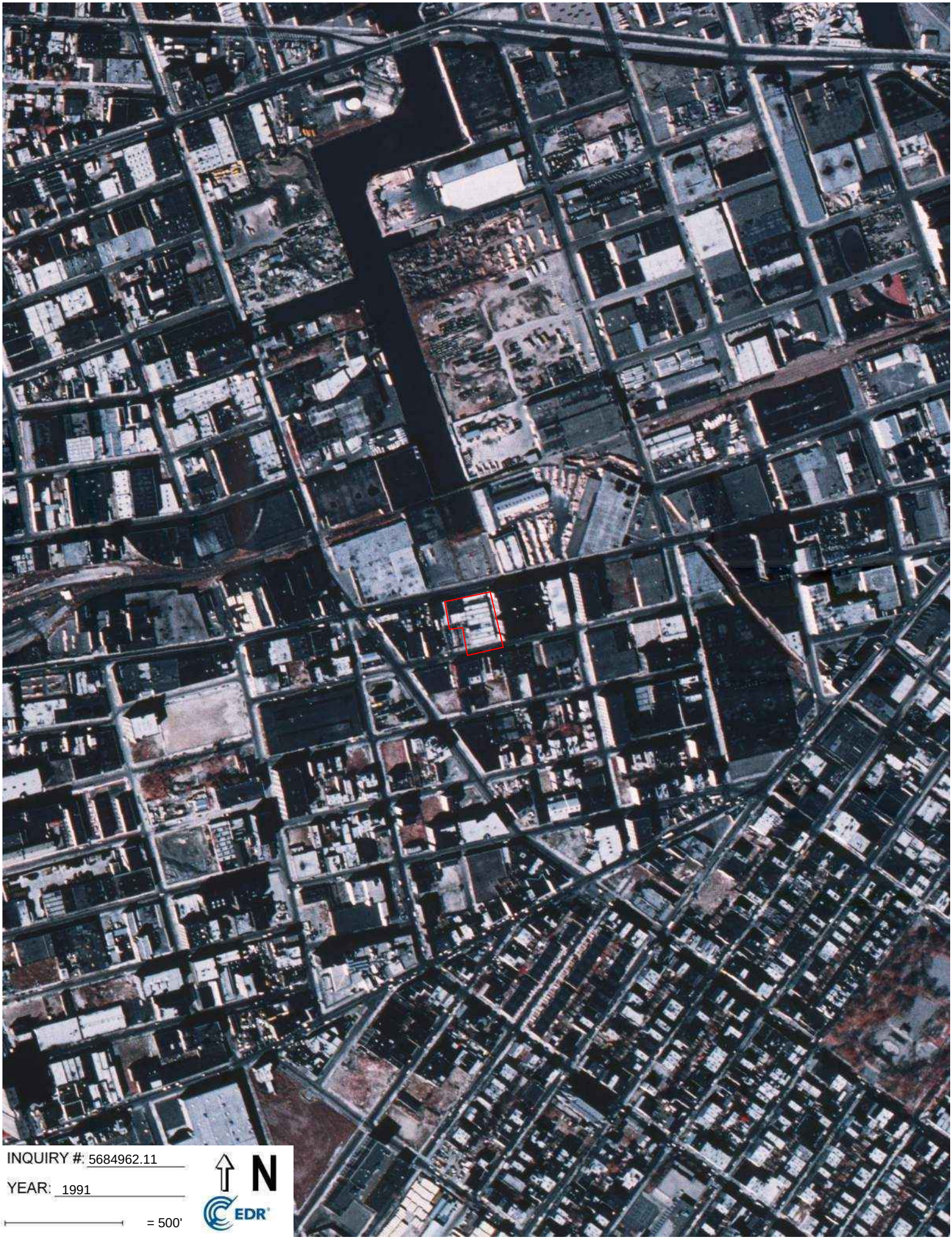
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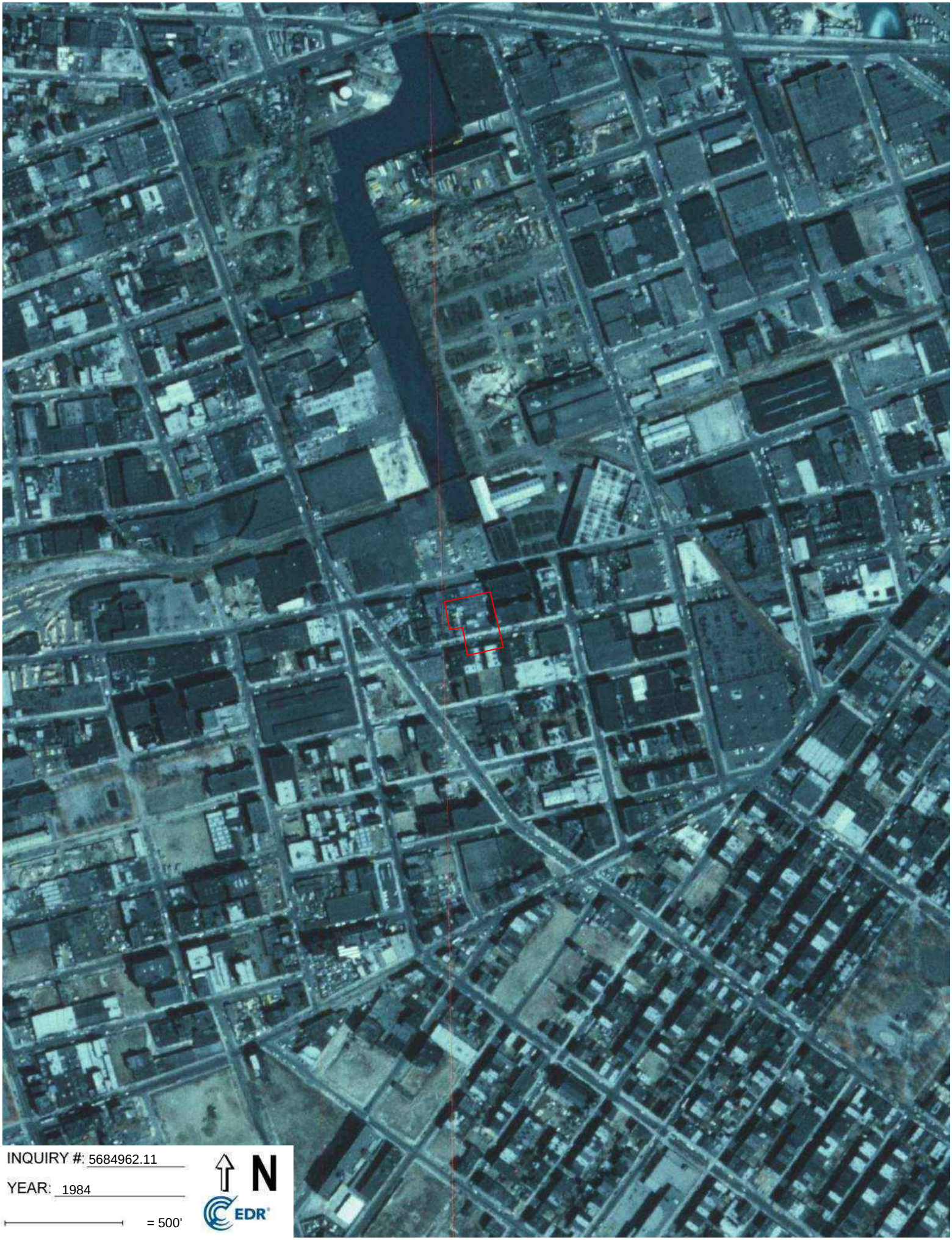
EDR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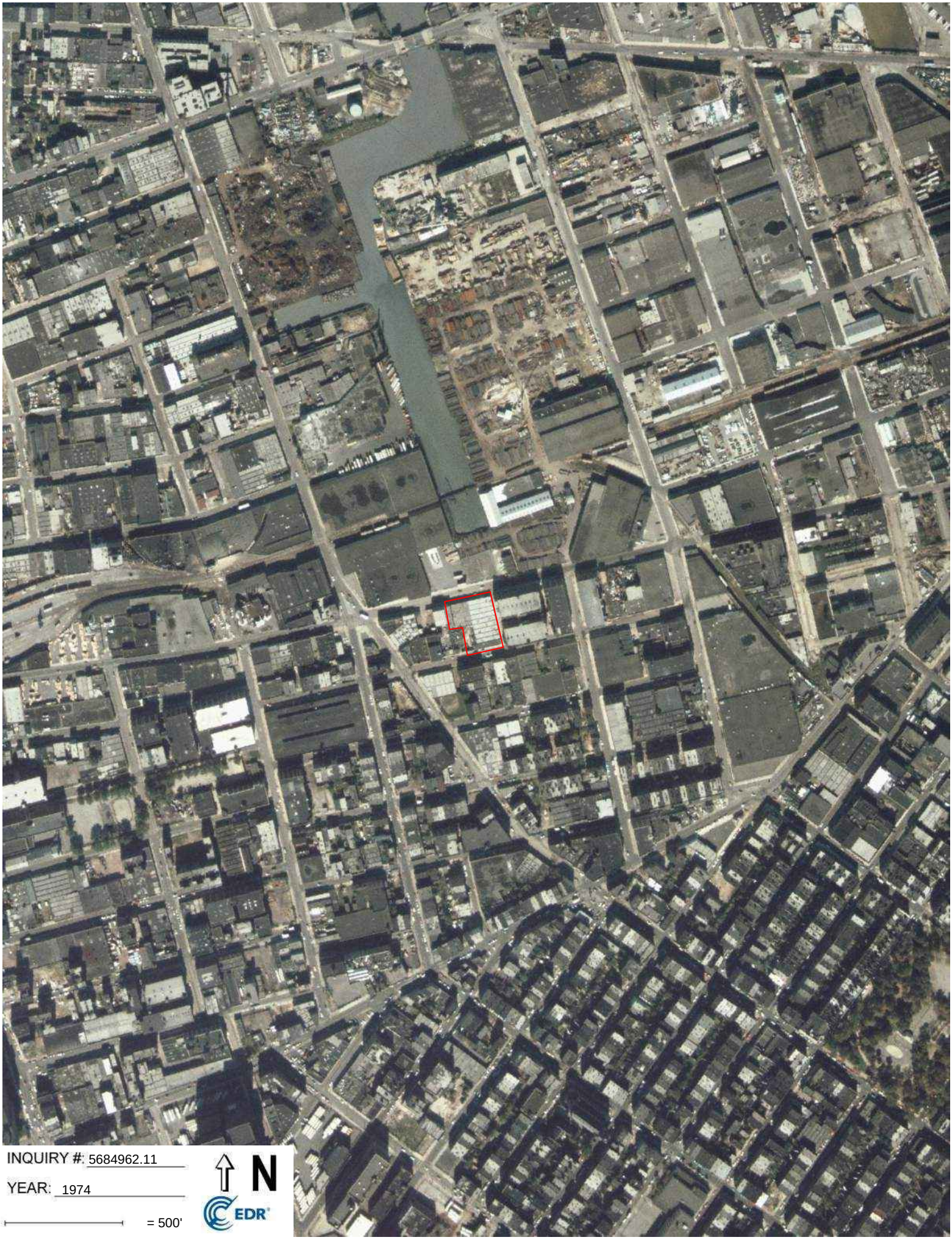
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YEAR: 1966

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EDR

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YEAR: 1961
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EDR

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YEAR: 1954
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EDR

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YEAR: 1951
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EDR

INQUIRY #: 5684962.11
YEAR: 1941
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EDR

INQUIRY #: 5684962.11

YEAR: 1924

= 500'

N

EDR

450 Johnson Avenue

450 Johnson Avenue

Brooklyn, NY 11237

Inquiry Number: 5684962.4

June 17, 2019

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

06/17/19

Site Name:

450 Johnson Avenue
450 Johnson Avenue
Brooklyn, NY 11237
EDR Inquiry # 5684962.4

Client Name:

Langan
555 Montgomery St Ste 1300
San Francisco, CA 94111
Contact: Andrew Kerr

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Langan were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# NA

Project: 450 Johnson Ave

Coordinates:

Latitude:	40.707711 40° 42' 28" North
Longitude:	-73.930274 -73° 55' 49" West
UTM Zone:	Zone 18 North
UTM X Meters:	590362.65
UTM Y Meters:	4506861.23
Elevation:	19.28' above sea level

Maps Provided:

2013	1897
1995	
1979	
1967	
1956	
1947	
1900	
1898	

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2013 Source Sheets

Brooklyn

7.5-minute, 24000

1995 Source Sheets

Brooklyn

7.5-minute, 24000
Aerial Photo Revised 1977

1979 Source Sheets

Brooklyn

7.5-minute, 24000
Aerial Photo Revised 1977

1967 Source Sheets

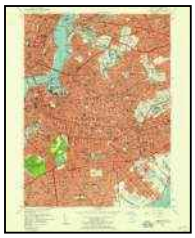
Brooklyn

7.5-minute, 24000
Aerial Photo Revised 1966

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1956 Source Sheets



Brooklyn

7.5-minute, 24000

1947 Source Sheets

Brooklyn

7.5-minute, 24000
Aerial Photo Revised 1940

1900 Source Sheets

Brooklyn

15-minute, 62500

1898 Source Sheets

Brooklyn

15-minute, 62500

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

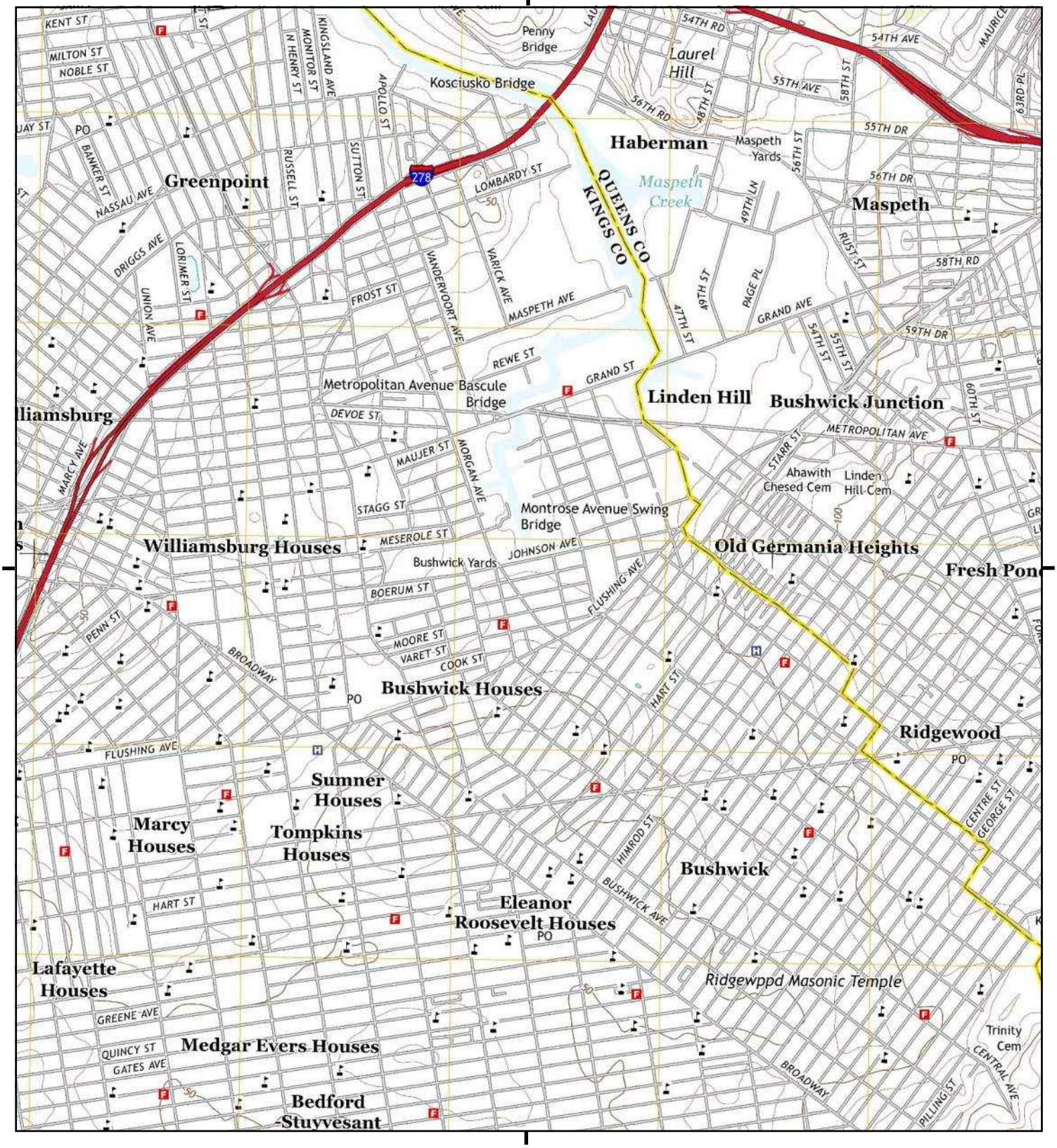
1897 Source Sheets

Brooklyn

15-minute, 62500

Historical Topo Map

2013



This report includes information from the following map sheet(s).

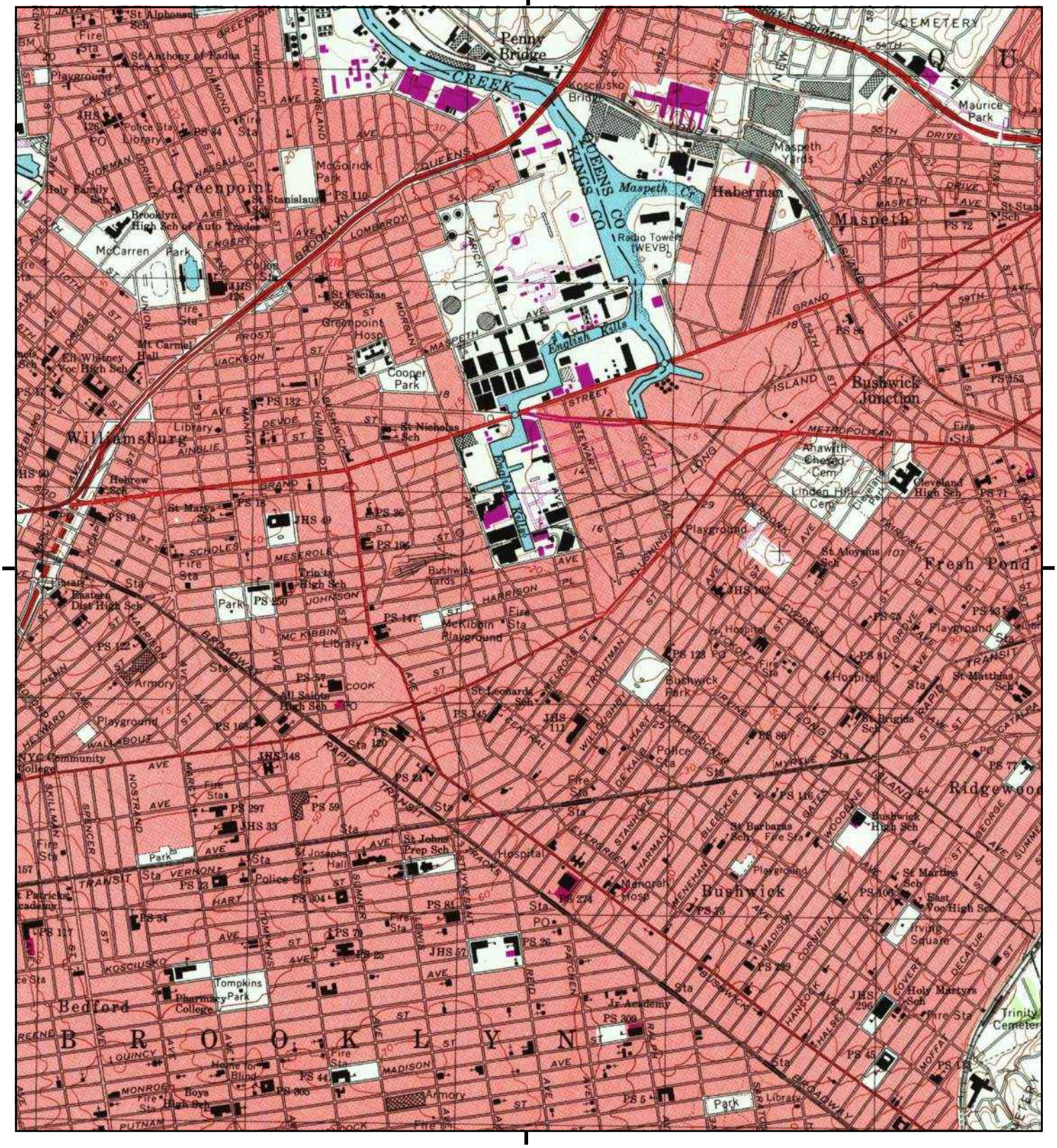
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Brooklyn, 2013, 7.5-minute

SITE NAME: 450 Johnson Avenue
ADDRESS: 450 Johnson Avenue
Brooklyn, NY 11237
CLIENT: Langan

N



This report includes information from the following map sheet(s).

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W E
SW S SE

TP, Brooklyn, 1995, 7.5-minute

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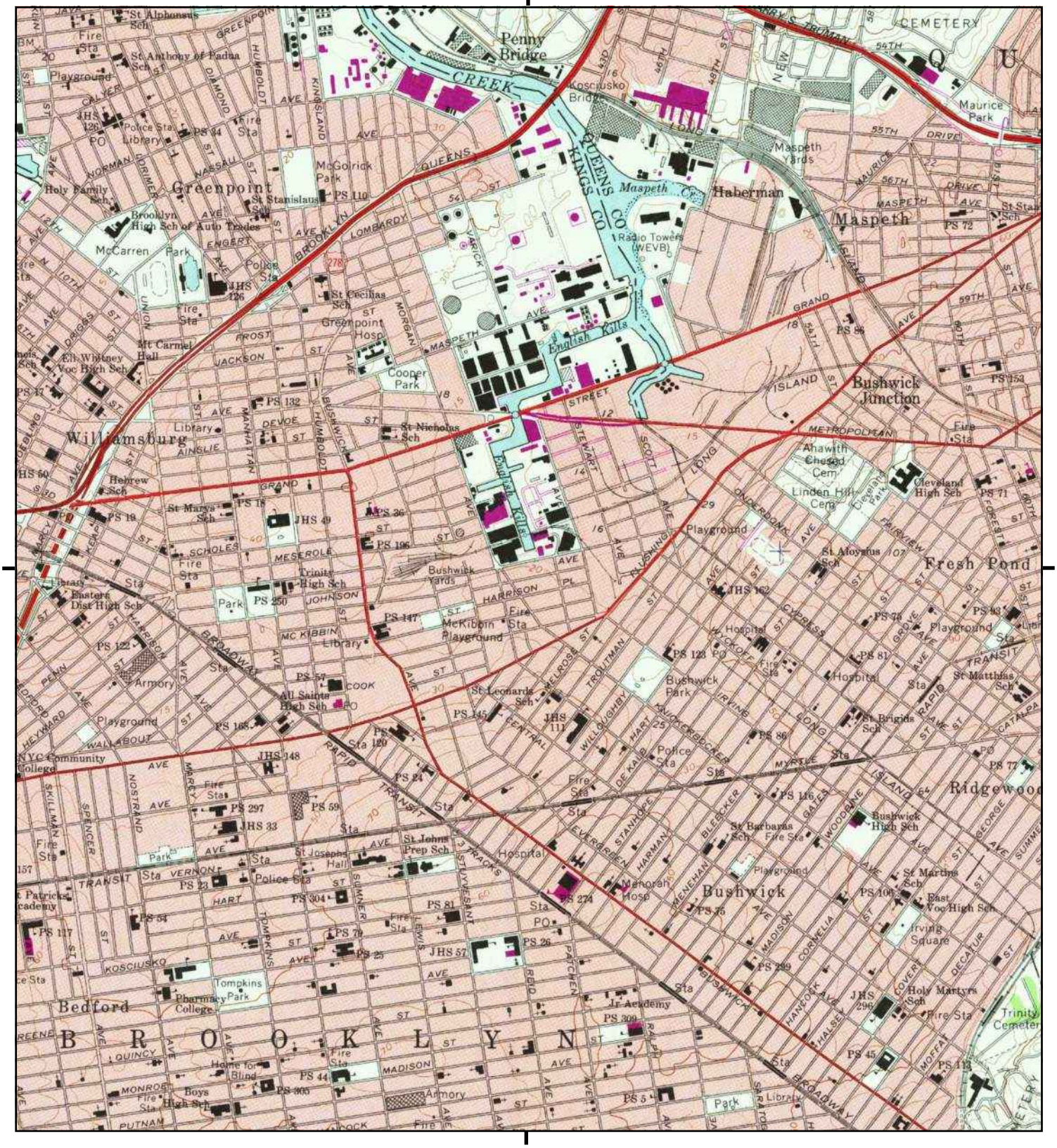
ADDRESS: 450 Johnson Avenue
Brooklyn, NY 11237
CLIENT: Langan

N



This report includes information from the following map sheet(s).

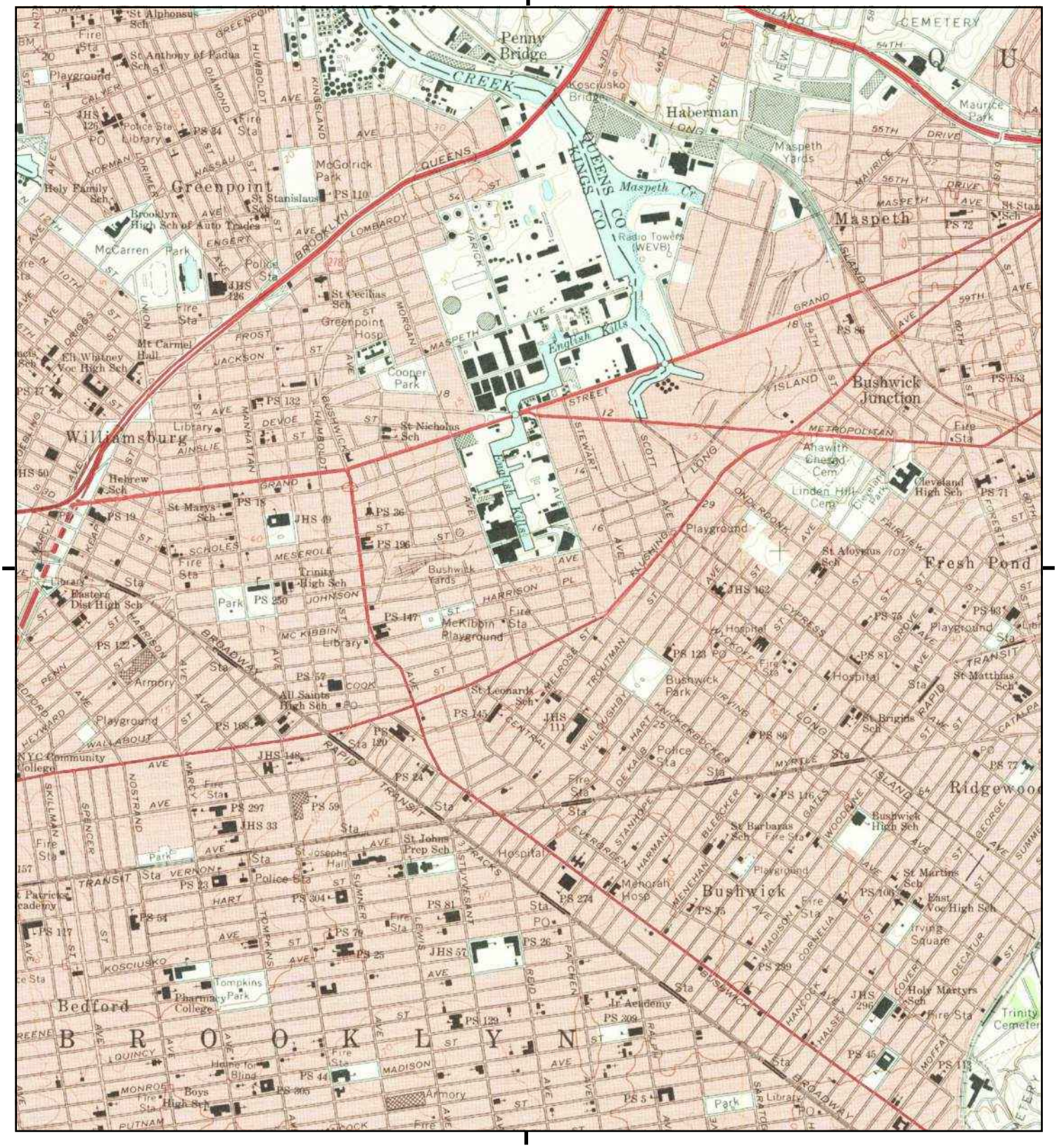
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Brooklyn, 1979, 7.5-minute

SITE NAME: 450 Johnson Avenue
ADDRESS: 450 Johnson Avenue
Brooklyn, NY 11237
CLIENT: Langan

N



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NW N NE
W E
SW S SE

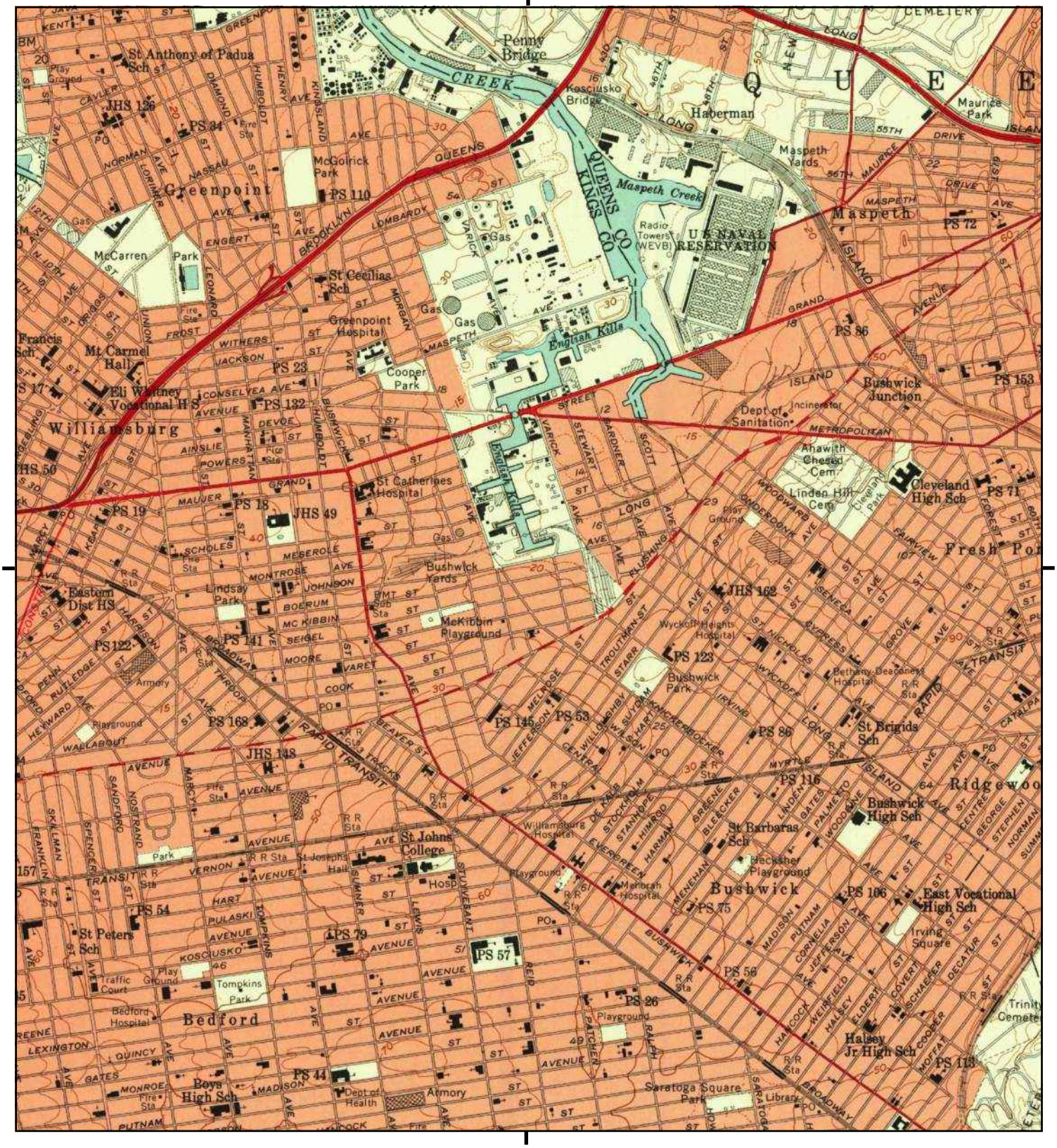
TP, Brooklyn, 1967, 7.5-minute

SITE NAME: 450 Johnson Avenue
ADDRESS: 450 Johnson Avenue
Brooklyn, NY 11237
CLIENT: Langan

N

Historical Topo Map

1956



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NW N NE
W E
SW S SE

TP, Brooklyn, 1956, 7.5-minute

SITE NAME: 450 Johnson Avenue
ADDRESS: 450 Johnson Avenue
Brooklyn, NY 11237
CLIENT: Langan

N

This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Brooklyn, 1947, 7.5-minute

SITE NAME: 450 Johnson Avenue
ADDRESS: 450 Johnson Avenue
Brooklyn, NY 11237
CLIENT: Langan

N

This report includes information from the following map sheet(s).

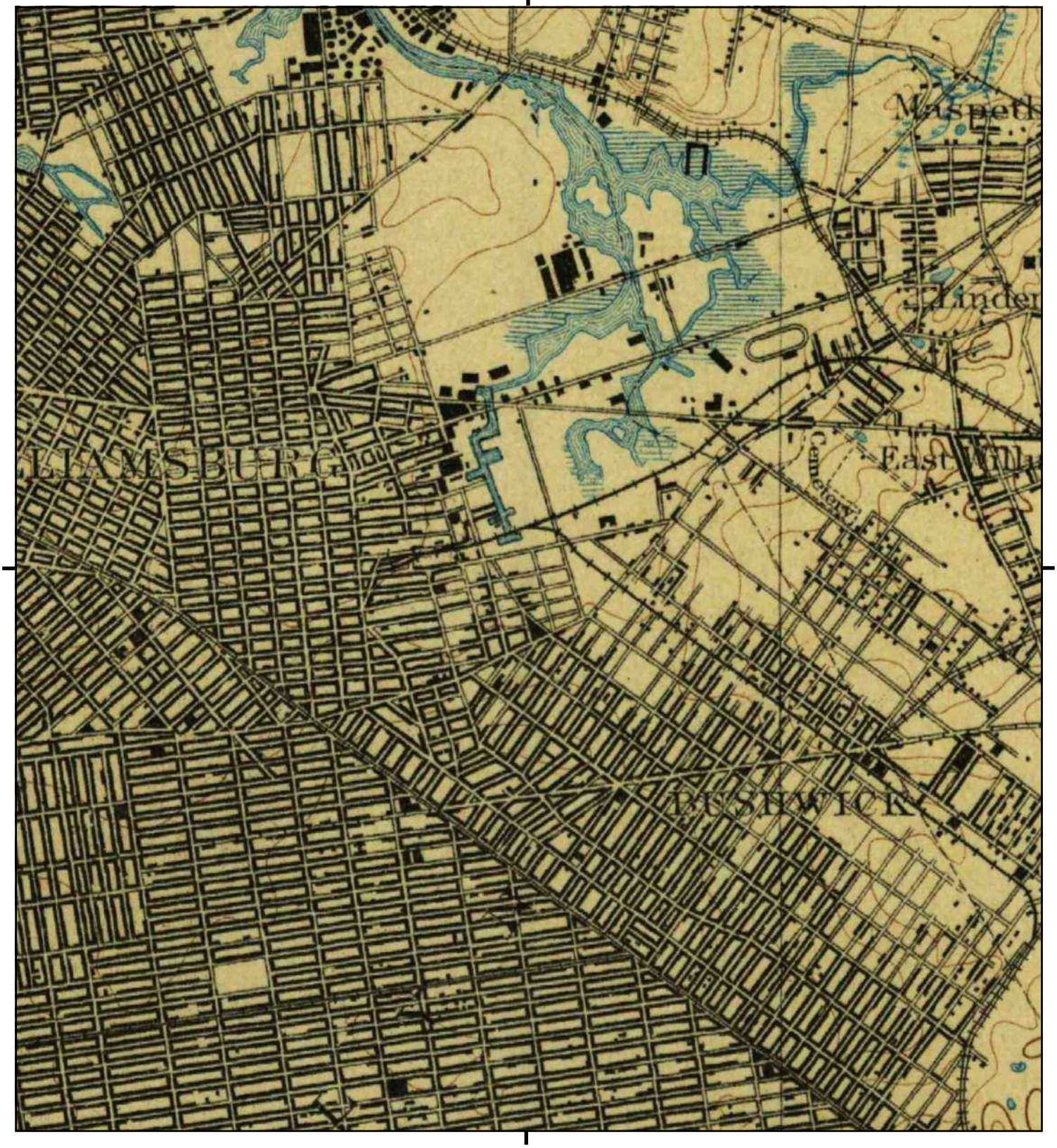
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Brooklyn, 1900, 15-minute

SITE NAME: 450 Johnson Avenue
ADDRESS: 450 Johnson Avenue
Brooklyn, NY 11237
CLIENT: Langan

N



This report includes information from the following map sheet(s).

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NW N NE
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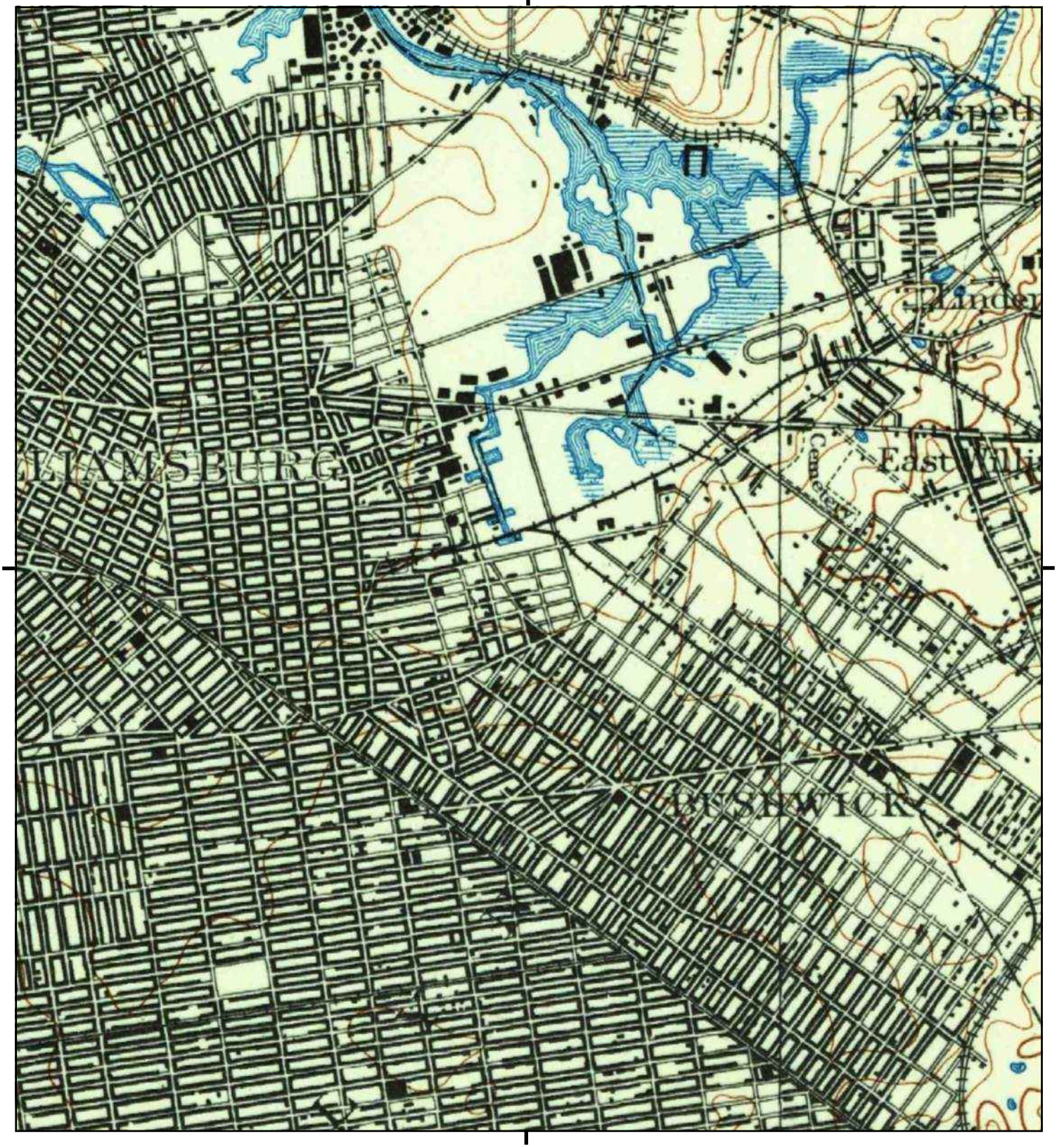
SW S SE

TP, Brooklyn, 1898, 15-minute

SITE NAME: 450 Johnson Avenue
ADDRESS: 450 Johnson Avenue
Brooklyn, NY 11237
CLIENT: Langan

N



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NW N NE
W E
SW S SE

TP, Brooklyn, 1897, 15-minute

SITE NAME: 450 Johnson Avenue
ADDRESS: 450 Johnson Avenue
Brooklyn, NY 11237
CLIENT: Langan

N

450 Johnson Avenue

450 Johnson Avenue

Brooklyn, NY 11237

Inquiry Number: 5684962.3

June 19, 2019

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

06/19/19

Site Name:

450 Johnson Avenue
450 Johnson Avenue
Brooklyn, NY 11237
EDR Inquiry # 5684962.3

Client Name:

Langan
555 Montgomery St Ste 1300
San Francisco, CA 94111
Contact: Andrew Kerr

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The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # E899-4ED2-B7C7

PO # NA

Project 450 Johnson Ave

Maps Provided:

2007	1994	1982	1933
2006	1993	1981	1907
2005	1991	1980	1888
2004	1990	1979	
2003	1989	1977	
2002	1988	1968	
2001	1987	1965	
1995	1986	1951	

Sanborn® Library search results

Certification #: E899-4ED2-B7C7

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

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Sanborn Sheet Key

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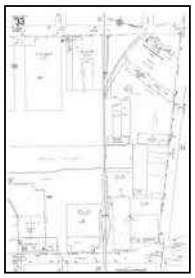
2007 Source Sheets


Volume 9, Sheet 33

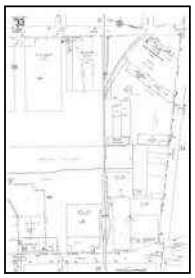
Volume 9, Sheet 34

2006 Source Sheets

Volume 9, Sheet 33

Volume 9, Sheet 34

2005 Source Sheets


Volume 9, Sheet 33

Volume 9, Sheet 34

2004 Source Sheets

Volume 9, Sheet 33

Volume 9, Sheet 34

Sanborn Sheet Key

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

2003 Source Sheets

Volume 9, Sheet 34

Volume 9, Sheet 33

2002 Source Sheets

Volume 9, Sheet 33

Volume 9, Sheet 34

2001 Source Sheets

Volume 9, Sheet 33

Volume 9, Sheet 34

1995 Source Sheets

Volume 9, Sheet 33

Volume 9, Sheet 34

Sanborn Sheet Key

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

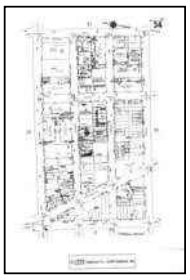
1994 Source Sheets

Volume 9, Sheet 33

Volume 9, Sheet 34

1993 Source Sheets

Volume 9, Sheet 33


Volume 9, Sheet 34

Volume 9, Sheet 34

Volume 9, Sheet 33

1991 Source Sheets

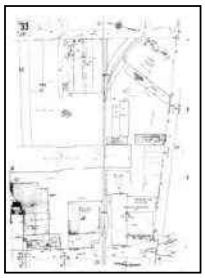
Volume 9, Sheet 33

Volume 9, Sheet 34

Sanborn Sheet Key

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

1990 Source Sheets


Volume 9, Sheet 33

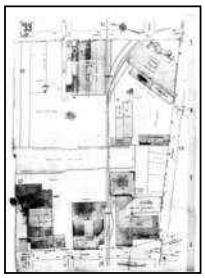
Volume 9, Sheet 34

1989 Source Sheets

Volume 9, Sheet 33

Volume 9, Sheet 34

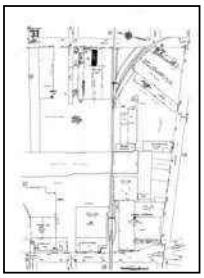
1988 Source Sheets


Volume 9, Sheet 33

Volume 9, Sheet 34

1987 Source Sheets

Volume 9, Sheet 34

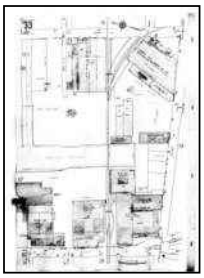

Volume 9, Sheet 33

Sanborn Sheet Key

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

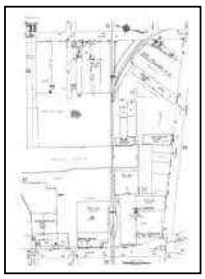
1986 Source Sheets

Volume 9, Sheet 34



Volume 9, Sheet 33

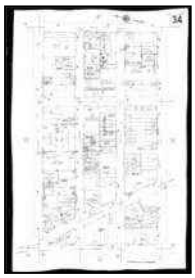
1982 Source Sheets



Volume 9, Sheet 33

Volume 9, Sheet 34

1981 Source Sheets



Volume 9, Sheet 34

Volume 9, Sheet 33

1980 Source Sheets

Volume 9, Sheet 33

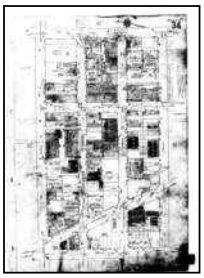
Volume 9, Sheet 34

Sanborn Sheet Key

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

1979 Source Sheets

Volume 9, Sheet 33

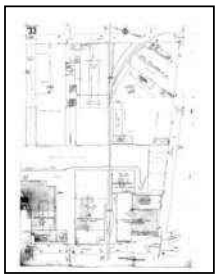

Volume 9, Sheet 34

1977 Source Sheets

Volume 9, Sheet 33

Volume 9, Sheet 34

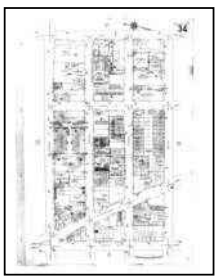
1968 Source Sheets


Volume 9, Sheet 33

Volume 9, Sheet 34

1965 Source Sheets

Volume 9, Sheet 33

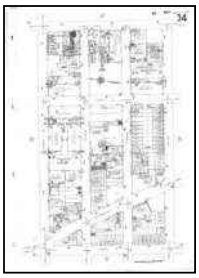

Volume 9, Sheet 34

Sanborn Sheet Key

This Certified Sanborn Map Report is based upon the following Sanborn Fire Insurance map sheets.

1951 Source Sheets

Volume 9, Sheet 33



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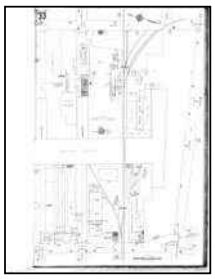
1933 Source Sheets



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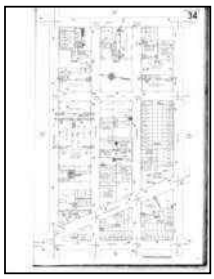

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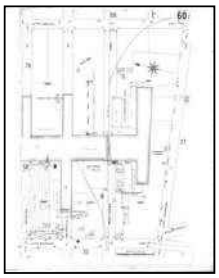
1907 Source Sheets

Volume 9, Sheet 37



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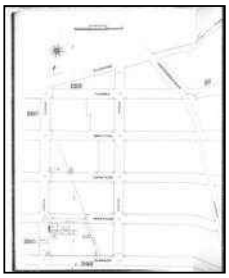
1888 Source Sheets

Volume 9, Sheet 246

Volume 9, Sheet 246



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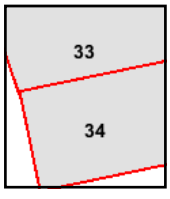

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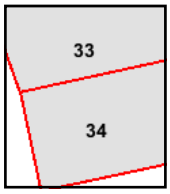

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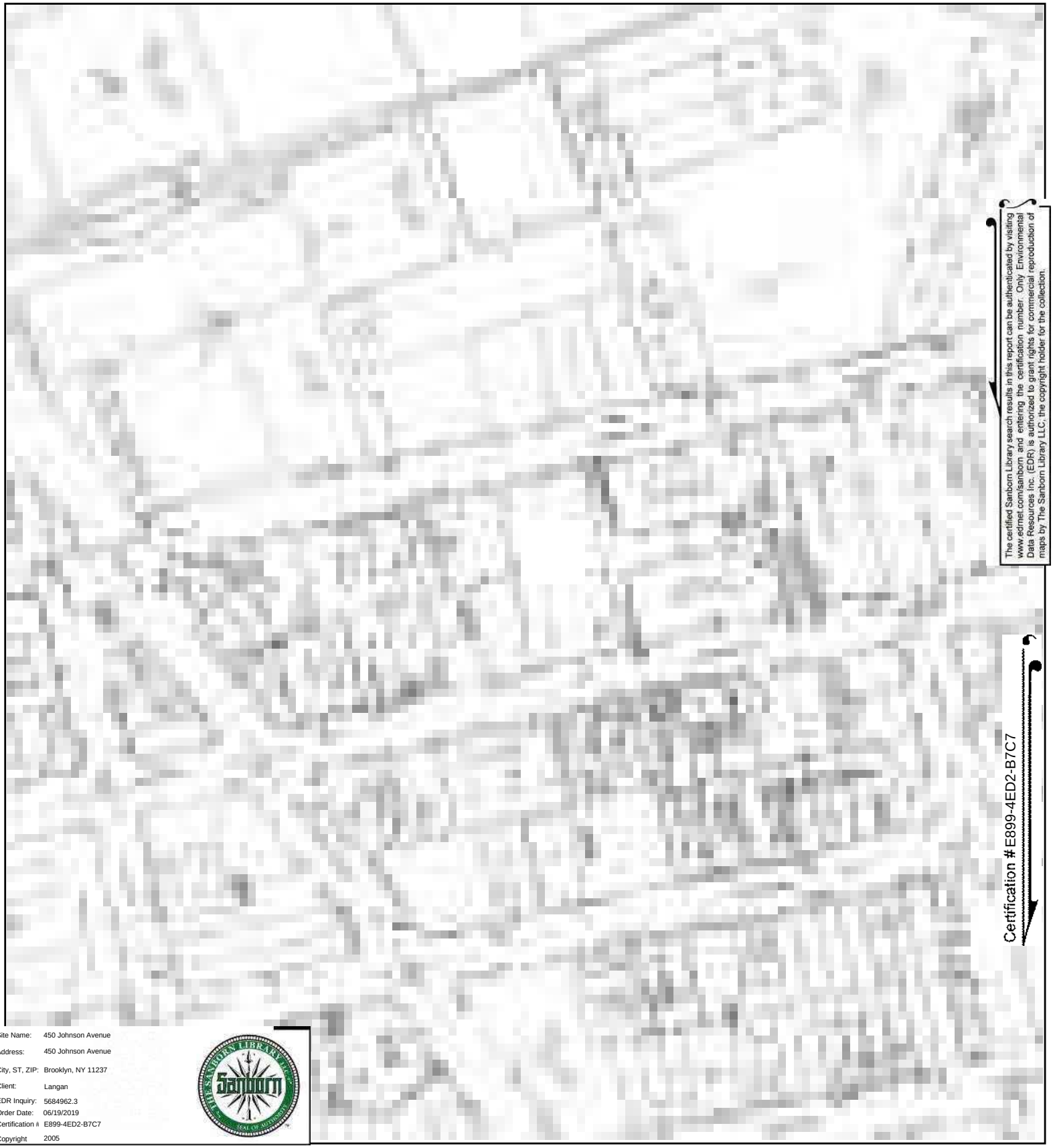

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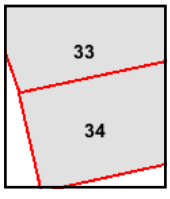

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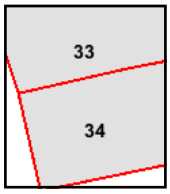

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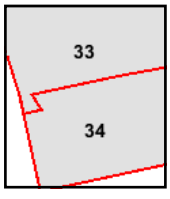

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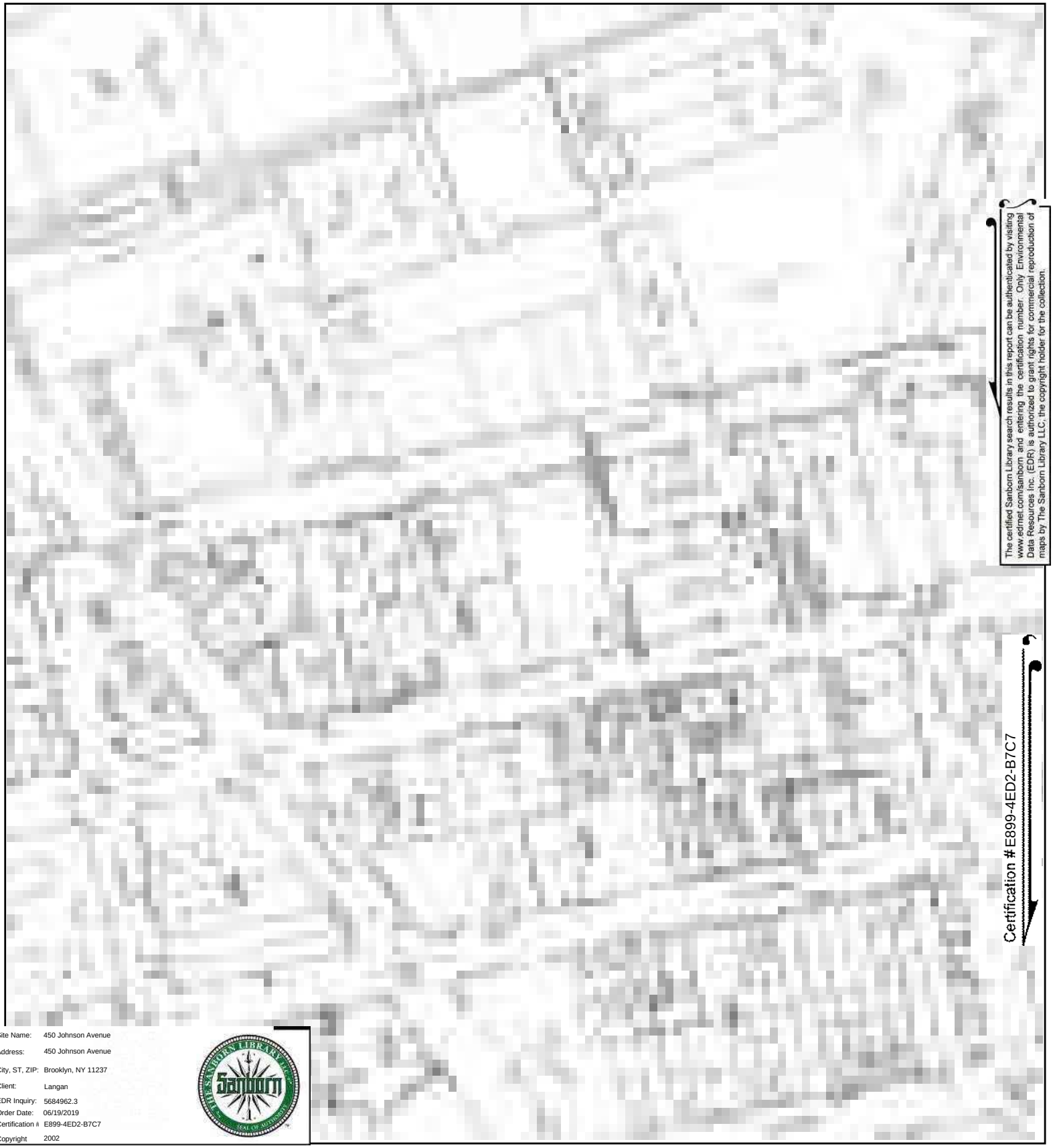

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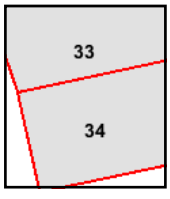

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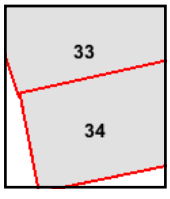

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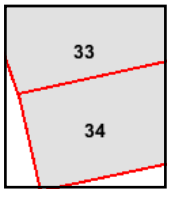

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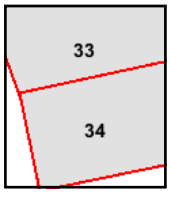

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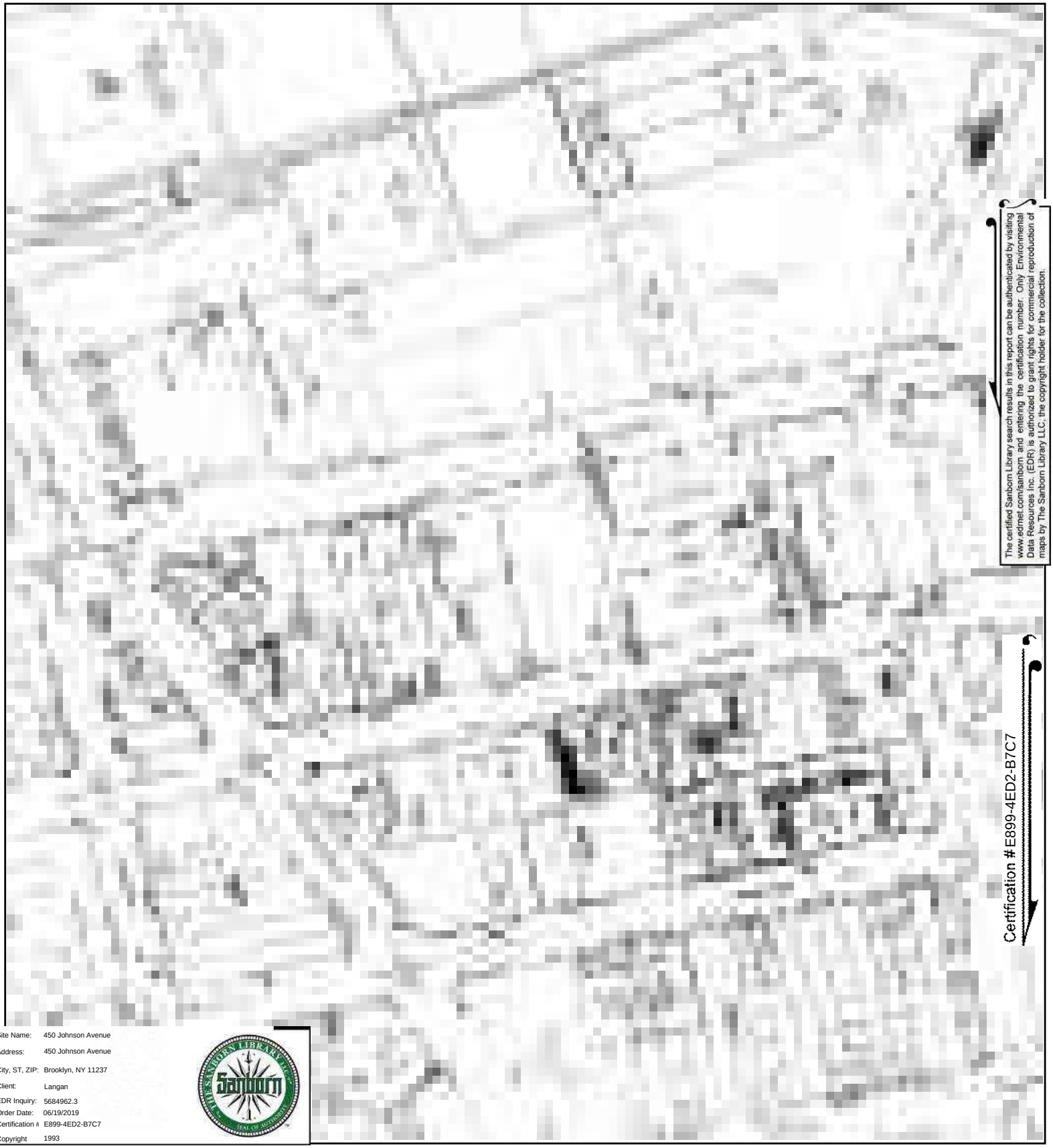

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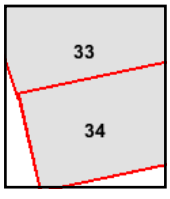

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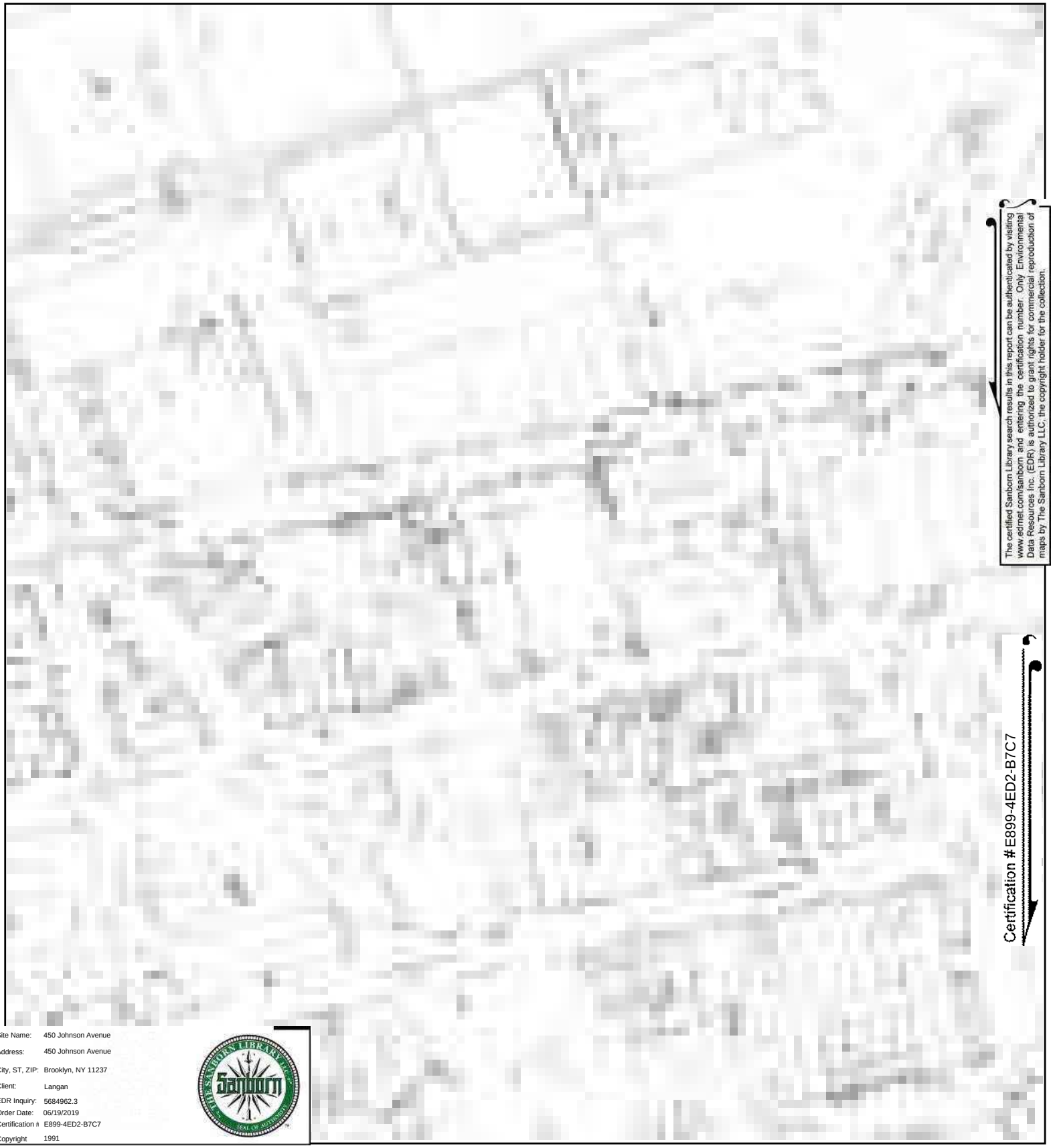

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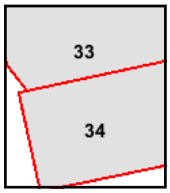

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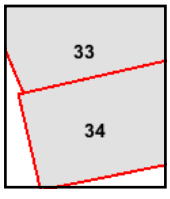

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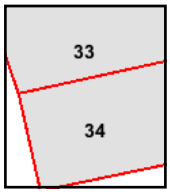

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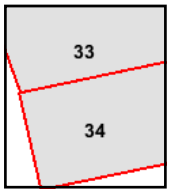

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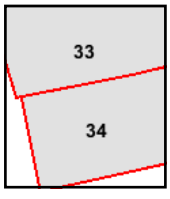

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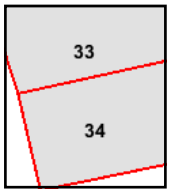

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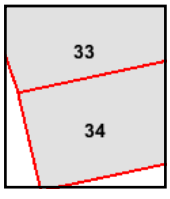

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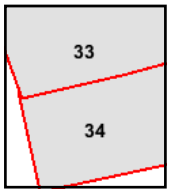

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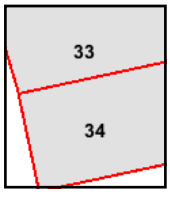

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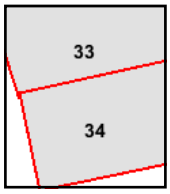
Certification #E899-4ED2-B7C7

Site Name: 450 Johnson Avenue
Address: 450 Johnson Avenue
City, ST, ZIP: Brooklyn, NY 11237
Client: Langan
EDR Inquiry: 5684962.3
Order Date: 06/19/2019
Certification #: E899-4ED2-B7C7
Copyright: 1979

This Certified Sanborn Map combines the following sheets.
Outlined areas indicate map sheets within the collection.

0 Feet 150 300 600



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Certification #E899-4ED2-B7C7

Site Name: 450 Johnson Avenue
Address: 450 Johnson Avenue
City, ST, ZIP: Brooklyn, NY 11237
Client: Langan
EDR Inquiry: 5684962.3
Order Date: 06/19/2019
Certification #: E899-4ED2-B7C7
Copyright: 1977

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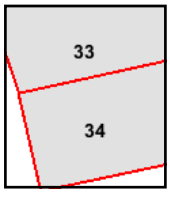

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Certification #E899-4ED2-B7C7

Site Name:	450 Johnson Avenue
Address:	450 Johnson Avenue
City, ST, ZIP:	Brooklyn, NY 11237
Client:	Langan
EDR Inquiry:	5684962.3
Order Date:	06/19/2019
Certification #	E899-4ED2-B7C7
Copyright	1968

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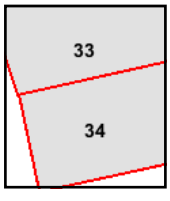

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Certification #E899-4ED2-B7C7

Site Name:	450 Johnson Avenue
Address:	450 Johnson Avenue
City, ST, ZIP:	Brooklyn, NY 11237
Client:	Langan
EDR Inquiry:	5684962.3
Order Date:	06/19/2019
Certification #	E899-4ED2-B7C7
Copyright	1965

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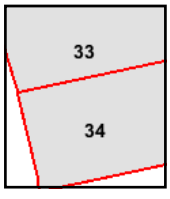

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Certification #E899-4ED2-B7C7

Site Name: 450 Johnson Avenue
Address: 450 Johnson Avenue
City, ST, ZIP: Brooklyn, NY 11237
Client: Langan
EDR Inquiry: 5684962.3
Order Date: 06/19/2019
Certification #: E899-4ED2-B7C7
Copyright: 1951

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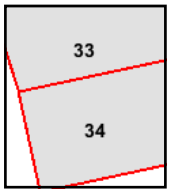

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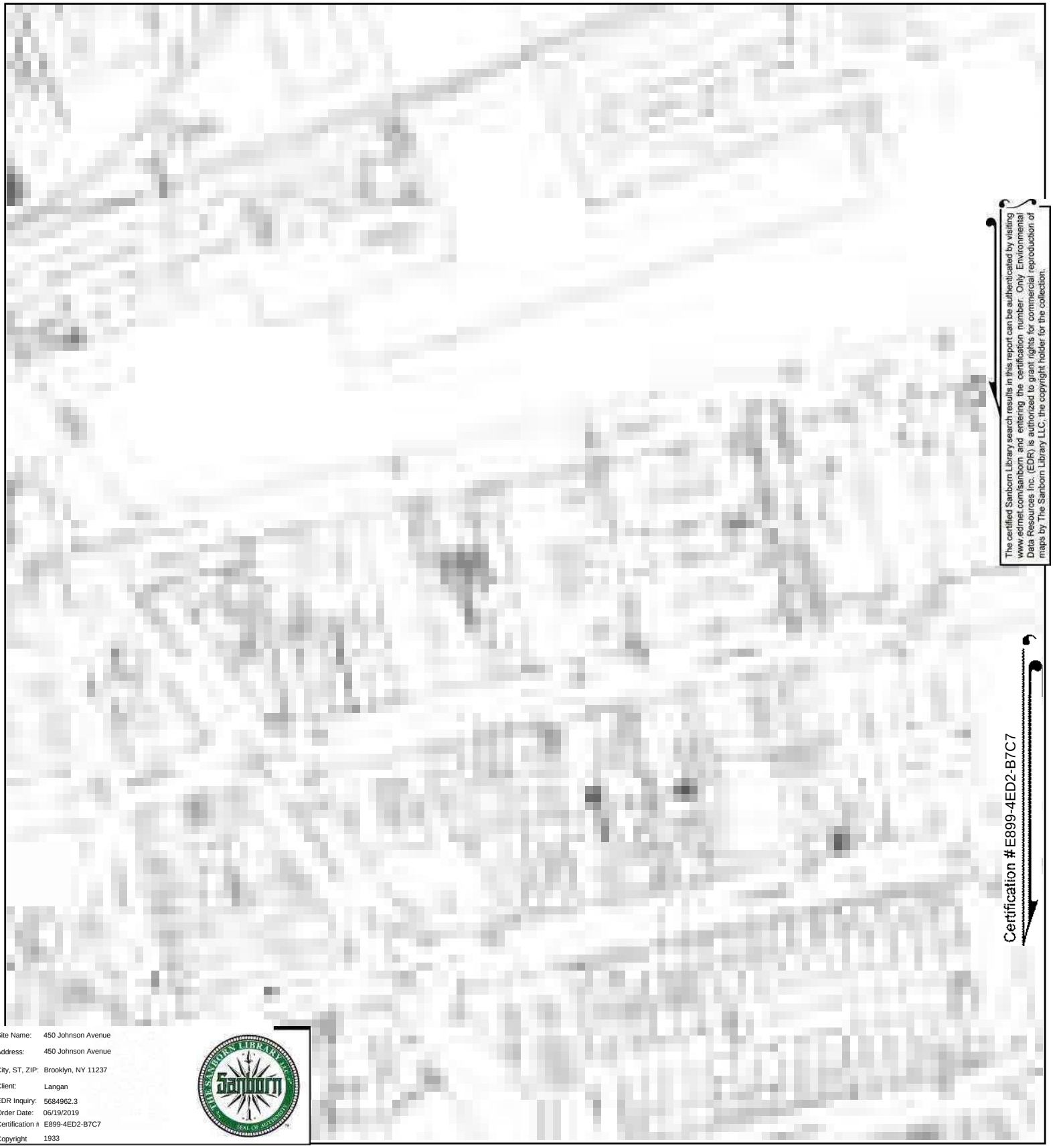

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Certification #E899-4ED2-B7C7

Site Name: 450 Johnson Avenue
Address: 450 Johnson Avenue
City, ST, ZIP: Brooklyn, NY 11237
Client: Langan
EDR Inquiry: 5684962.3
Order Date: 06/19/2019
Certification #: E899-4ED2-B7C7
Copyright: 1933

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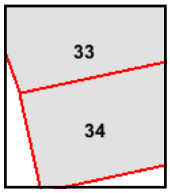
Outlined areas indicate map sheets within the collection.



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0 Feet 150 300 600

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Certification #E899-4ED2-B7C7

Site Name: 450 Johnson Avenue
Address: 450 Johnson Avenue
City, ST, ZIP: Brooklyn, NY 11237
Client: Langan
EDR Inquiry: 5684962.3
Order Date: 06/19/2019
Certification #: E899-4ED2-B7C7
Copyright: 1907

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Outlined areas indicate map sheets within the collection.

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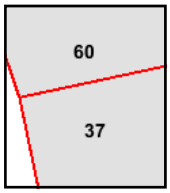

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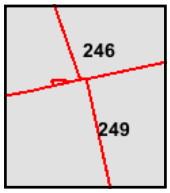
Certification #E899-4ED2-B7C7

Site Name: 450 Johnson Avenue
Address: 450 Johnson Avenue
City, ST, ZIP: Brooklyn, NY 11237
Client: Langan
EDR Inquiry: 5684962.3
Order Date: 06/19/2019
Certification #: E899-4ED2-B7C7
Copyright: 1888

This Certified Sanborn Map combines the following sheets.
Outlined areas indicate map sheets within the collection.



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0 Feet 150 300 600

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450 Johnson Avenue
450 Johnson Avenue
Brooklyn, NY 11237

Inquiry Number: 5684962.5
June 18, 2019

The EDR-City Directory Abstract

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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SECTION

Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Abstract is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Abstract includes a search and abstract of available city directory data. For each address, the directory lists the name of the corresponding occupant at five year intervals.

Business directories including city, cross reference and telephone directories were reviewed, if available, at approximately five year intervals for the years spanning 1928 through 2014. This report compiles information gathered in this review by geocoding the latitude and longitude of properties identified and gathering information about properties within 200 feet of the target property.

A summary of the information obtained is provided in the text of this report.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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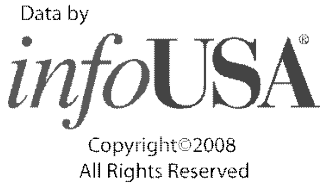

RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. An "X" indicates where information was identified in the source and provided in this report.

Year	Source	TP	Adjoining	Text Abstract	Source Image
2014	EDR Digital Archive	-	X	X	-
2010	EDR Digital Archive	-	X	X	-
2005	Hill-Donnelly Corporation	-	X	X	-
	Hill-Donnelly Corporation	X	X	X	-
2000	Cole Information Services	-	X	X	-
	Cole Information Services	X	X	X	-
1997	NYNEX	-	X	X	-
	NYNEX	X	X	X	-
1992	NYNEX Informantion Resource Co.	-	X	X	-
	NYNEX Informantion Resource Co.	X	X	X	-
1985	NYNEX Information Resources Company	-	X	X	-
	NYNEX Information Resources Company	X	X	X	-

EXECUTIVE SUMMARY

Year	Source	TP	Adjoining	Text Abstract	Source Image
1980	New York Telephone	-	-	X	-
	New York Telephone	X	-	X	-
1976	New York Telephone	-	X	X	-
	New York Telephone	X	X	X	-
1973	New York Telephone	-	X	X	-
1970	New York Telephone	-	X	X	-
1965	New York Telephone	-	X	X	-
1960	New York Telephone	-	X	X	-
	New York Telephone Company	-	X	X	-
1949	New York Telephone Company	-	X	X	-
1945	New York Telephone	-	X	X	-
1940	New York Telephone	-	X	X	-
1934	R. L. Polk & Co.	-	X	X	-
	R. L. Polk & Co.	X	X	X	-
1928	New York Telephone	-	X	X	-
	New York Telephone	X	X	X	-

FINDINGS

TARGET PROPERTY INFORMATION

ADDRESS

450 Johnson Avenue
Brooklyn, NY 11237

FINDINGS DETAIL

Target Property research detail.

JOHNSON AVE

450 JOHNSON AVE

Year	*Uses*	*Source*
2005	Envelope Manufacturers Corp	Hill-Donnelly Corporation
2000	ENVELOPE MFRS CORP	Cole Information Services
1997	Envelope Mfrs Corp	NYNEX
1992	ENVELOPE MFRS CORP	NYNEX Informantion Resource Co.
1985	CONSOLIDATED SPRING CORP	NYNEX Information Resources Company
1980	FOLIO PRNTG CORP	New York Telephone
1976	FOLIO PRNTNG CORP	New York Telephone
1934	JOHNSON INGRHAM GARAGE	R. L. Polk & Co.
1928	STAGG H GARAGE	New York Telephone

FINDINGS

ADJOINING PROPERTY DETAIL

The following Adjoining Property addresses were researched for this report. Detailed findings are provided for each address.

JOHNSN A st

465 JOHNSN A st

Year	Uses	Source
1970	Arctic Diner	New York Telephone

JOHNSON

431 JOHNSON

Year	Uses	Source
1934	MULVIHILL MARGT CLK R	R. L. Polk & Co.

446 JOHNSON

Year	Uses	Source
1934	PEERMAN RUBIN GRO	R. L. Polk & Co.

JOHNSON AC 4TH FL

456 JOHNSON AC 4TH FL

Year	Uses	Source
1934	ENGEL MCCLELLAND HANDKERCHIEF MFRS	R. L. Polk & Co.

JOHNSON AV 25

456 JOHNSON AV 25

Year	Uses	Source
1934	SACHS KNITTING MILLS (ISIDORE SACHS)	R. L. Polk & Co.

JOHNSON AV 3RD FL

456 JOHNSON AV 3RD FL

Year	Uses	Source
1934	WABASH APPLIANCE CORP ABR M PARKER PRES ABR ADLER TREAS	R. L. Polk & Co.
	KERMIT J J CORP ABR M PARKER PRES ABR ADLER TREAS INCANDESCENT LAMPS	R. L. Polk & Co.

FINDINGS

JOHNSON AVE

425 JOHNSON AVE

Year	Uses	Source
1976	PFIZER INC	New York Telephone

433 JOHNSON AVE

Year	Uses	Source
1965	Lopez Jose	New York Telephone

Johnson Ave

434 Johnson Ave

Year	Uses	Source
2010	TCC TRADING INC	EDR Digital Archive

JOHNSON AVE

434 JOHNSON AVE

Year	Uses	Source
1949	De Pasquale Bros Ids coats	New York Telephone Company

440 JOHNSON AVE

Year	Uses	Source
1960	Leone Lucy Mrs	New York Telephone Company

447 JOHNSON AVE

Year	Uses	Source
1960	LUTZ AUTO WRECKING	New York Telephone
	Lutz Auto Wrecking	New York Telephone Company

451 JOHNSON AVE

Year	Uses	Source
1965	Sonnys Auto Wks	New York Telephone

455 JOHNSON AVE

Year	Uses	Source
1940	Arctic Oval	New York Telephone

FINDINGS

Johnson Ave

456 Johnson Ave

Year	Uses	Source
2014	ASC GROUP LTD	EDR Digital Archive
	AMERICAS SWEATER SPORT CORP	EDR Digital Archive
2010	ASC GROUP LTD	EDR Digital Archive
	AMERICAS SWEATER SPORT CORP	EDR Digital Archive
	NOUVEAU KNITS LLC	EDR Digital Archive
	BROOKLYN ARTS BUILDING LTD	EDR Digital Archive
	ALBEX CONTRACTORS INC	EDR Digital Archive
	DANMAR FINISHING CORP	EDR Digital Archive

JOHNSON AVE

456 JOHNSON AVE

Year	Uses	Source
2005	Nai Industries	Hill-Donnelly Corporation
	Nouveau Knits	Hill-Donnelly Corporation
2000	AMERICAS SWTR CONTRNG	Cole Information Services
	MARIO SWTR CONTRNG	Cole Information Services
	N AL INDUSTRIES	Cole Information Services
	NAI INDUSTRIES	Cole Information Services
	NOUVEAU KNITS LIC	Cole Information Services
	REQUEST ENTRPRSS	Cole Information Services
1997	Americas Sweater Sport	NYNEX
	D J D Sweater Contracting Inc	NYNEX
	G & R Knitting MIN Inc	NYNEX
	Request Enterprises	NYNEX
	Todd Sales & Service Corp	NYNEX
1992	SLEEPWDEL L W INC	NYNEX Informantion Resource Co.
	ALBEX APPAREL INC	NYNEX Informantion Resource Co.
	BIG & TALL FASHIONS	NYNEX Informantion Resource Co.
	BOB CRAFT FASHIONS	NYNEX Informantion Resource Co.
	LEON OF PARIS	NYNEX Informantion Resource Co.
1985	ALBEX APPAREL INC	NYNEX Information Resources Company
	LEON OF PARIS	NYNEX Information Resources Company
	SLEEPWELL L W INC	NYNEX Information Resources Company
1976	SLEEPWELL L W INC	New York Telephone
	ALBEX CONTRACTORS INC CLTHG	New York Telephone

FINDINGS

Year	Uses	Source
1976	BON VIVANT FORMALE WEAR	New York Telephone
	BROADWAY TUX MAKERS	New York Telephone
	IBA REALTY CORP	New York Telephone
	PUSSY CAT TOY CO	New York Telephone
1973	Albex Contractors Inc clthg	New York Telephone
	Bon Vivant Formale Wear	New York Telephone
	Broadway Tux Makers	New York Telephone
	IBA Realty Corp	New York Telephone
	Pussy Cat Toy Co	New York Telephone
1970	Albex Contractors Inc clthg	New York Telephone
	Sleepwell L W Inc	New York Telephone
1965	Albex Contractors Inc clthg	New York Telephone
	Raytone Coat Co Inc	New York Telephone
	Sleepwell L W inc	New York Telephone
1960	ALBEX CONTRACTORS INC CLTHG	New York Telephone
	SLEEPWELL L W INC	New York Telephone
	TREASURE SHOE MFG CO INC	New York Telephone
	Albex Contractors Inc clthg	New York Telephone Company
	Raytone Coat Co Inc	New York Telephone Company
	Sleepwell L W Inc	New York Telephone Company
	Treasure Shoe Mfg Co Inc	New York Telephone Company
	RAYTONE COAT CO INC	New York Telephone
1949	Atkochaitls Peter clothing	New York Telephone Company
	P M D Cloak Co	New York Telephone Company
1945	Park Mfg Co	New York Telephone
	Korn Jack lds coats	New York Telephone
	Atkochaitis Peter clothing	New York Telephone
1940	Park Mfg Co	New York Telephone
1934	PARKER ABR M PRES WABASH APPLIANCE CORP	R. L. Polk & Co.
	ADLER ABR TREAS WABASH APPLIANCES CORP	R. L. Polk & Co.
1928	SACHS KNITTING MILLS	New York Telephone
	LA MODE RAYON FABRIC CORP	New York Telephone
	ENGEL H SONS & MCCLELLAND MFR HDKFS	New York Telephone

465 JOHNSON AVE

Year	Uses	Source
2005	Tiffany Carting Corp	Hill-Donnelly Corporation

FINDINGS

Year	Uses	Source
2005	Poweriine Imports Inc	Hill-Donnelly Corporation
1997	Powerline Imports Inc	NYNEX
1992	POWERLINE IMPORTS INC	NYNEX Informantion Resource Co.
1985	VARICK INVESTIGATIONS & PATROL INC	NYNEX Information Resources Company
1976	ARCTIC DINER	New York Telephone
	ARCTIC DINER	New York Telephone
1973	Arctic Diner	New York Telephone
1965	Arctic Diner	New York Telephone
	Arctic Diner	New York Telephone
1960	ARCTIC DINER	New York Telephone
	Arctic Diner	New York Telephone Company

JOHNSON PL

446 JOHNSON PL

Year	Uses	Source
1997	LAGREDON Louise	NYNEX

427TH JOHNSON PL

Year	Uses	Source
1928	HAFFNER ALFRED L R	New York Telephone

JONSN AVE

456 JONSN AVE

Year	Uses	Source
1973	Sleepwell L W Inc	New York Telephone

465 JONSN AVE

Year	Uses	Source
1970	Arctic Diner	New York Telephone

FINDINGS

ADJOINING PROPERTY: ADDRESSES NOT IDENTIFIED IN RESEARCH SOURCE

The following Adjoining Property addresses were researched for this report, and the addresses were not identified in research source.

Address Researched	Address Not Identified in Research Source
425 JOHNSON AVE	2014, 2010, 2005, 2000, 1997, 1992, 1985, 1980, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1934, 1928
427TH JOHNSON PL	2014, 2010, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1934
431 JOHNSON	2014, 2010, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1928
433 JOHNSON AVE	2014, 2010, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1960, 1949, 1945, 1940, 1934, 1928
434 JOHNSON AVE	2014, 2010, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1945, 1940, 1934, 1928
434 Johnson Ave	2014, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1934, 1928
440 JOHNSON AVE	2014, 2010, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1949, 1945, 1940, 1934, 1928
446 JOHNSON	2014, 2010, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1928
446 JOHNSON PL	2014, 2010, 2005, 2000, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1934, 1928
447 JOHNSON AVE	2014, 2010, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1949, 1945, 1940, 1934, 1928
451 JOHNSON AVE	2014, 2010, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1960, 1949, 1945, 1940, 1934, 1928
455 JOHNSON AVE	2014, 2010, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1934, 1928
456 JOHNSON AC 4TH FL	2014, 2010, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1928
456 JOHNSON AV 25	2014, 2010, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1928
456 JOHNSON AV 3RD FL	2014, 2010, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1928
456 JOHNSON AVE	2014, 2010, 1980
456 Johnson Ave	2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1970, 1965, 1960, 1949, 1945, 1940, 1934, 1928
456 JONSN AVE	2014, 2010, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1970, 1965, 1960, 1949, 1945, 1940, 1934, 1928
465 JOHNSN A st	2014, 2010, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1965, 1960, 1949, 1945, 1940, 1934, 1928
465 JOHNSON AVE	2014, 2010, 2000, 1980, 1970, 1949, 1945, 1940, 1934, 1928
465 JONSN AVE	2014, 2010, 2005, 2000, 1997, 1992, 1985, 1980, 1976, 1973, 1965, 1960, 1949, 1945, 1940, 1934, 1928

TARGET PROPERTY: ADDRESS NOT IDENTIFIED IN RESEARCH SOURCE

The following Target Property addresses were researched for this report, and the addresses were not identified in the research source.

Address Researched	Address Not Identified in Research Source
450 Johnson Avenue	2014, 2010, 1973, 1970, 1965, 1960, 1949, 1945, 1940

450 Johnson Avenue
450 Johnson Avenue
Brooklyn, NY 11237

Inquiry Number: 5684962.7
June 19, 2019

EDR Environmental Lien and AUL Search

Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

EDR Environmental Lien and AUL Search

The EDR Environmental Lien and AUL Search Report provides results from a search of available current land title records for environmental cleanup liens and other activity and use limitations, such as engineering controls and institutional controls.

A network of professional, trained researchers, following established procedures, uses client supplied address information to:

- search for parcel information and/or legal description;
- search for ownership information;
- research official land title documents recorded at jurisdictional agencies such as recorders' offices, registries of deeds, county clerks' offices, etc.;
- access a copy of the deed;
- search for environmental encumbering instrument(s) associated with the deed;
- provide a copy of any environmental encumbrance(s) based upon a review of key words in the instrument(s) (title, parties involved, and description); and
- provide a copy of the deed or cite documents reviewed.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EDR Environmental Lien and AUL Search

TARGET PROPERTY INFORMATION

ADDRESS

450 Johnson Avenue
450 Johnson Avenue
Brooklyn, NY 11237

ENVIRONMENTAL LIEN

Environmental Lien: Found ☐ Not Found ☒

OTHER ACTIVITY AND USE LIMITATIONS (AULs)

AULs: Found ☐ Not Found ☒

RESEARCH SOURCE

Source 1:

New York City Register of Deeds
Kings, NY

PROPERTY INFORMATION

Deed 1:

Type of Deed:	Bargain & Sale Deed
Title is vested in:	JBC Land LLC
Title received from:	Robert C Harper
Deed Dated	12/13/2012
Deed Recorded:	12/17/2012
Book:	NA
Page:	NA
Volume:	NA
Instrument:	2012121300825001
Docket:	NA
Land Record Comments:	see exhibit
Miscellaneous Comments:	NA
Legal Description:	see exhibit
Legal Current Owner:	JBC Land LLC
Parcel # / Property Identifier:	block 2992 lot 21
Comments:	see exhibit

Deed Exhibit 1

NYC DEPARTMENT OF FINANCE
OFFICE OF THE CITY REGISTER

This page is part of the instrument. The City Register will rely on the information provided by you on this page for purposes of indexing this instrument. The information on this page will control for indexing purposes in the event of any conflict with the rest of the document.

20121213008250010O3EF9A9

RECORDING AND ENDORSEMENT COVER PAGE **PAGE 1 OF 4**

Document ID: 2012121300825001 Document Date: 12-13-2012 Preparation Date: 12-14-2012
Document Type: DEED
Document Page Count: 3

PRESENTER:
GRAND BORO SEARCHES INC.
69 EAST JERICHO TPKE. #103099
TEAM EXAMINERS PICKUP
MINEOLA, NY 11501
516-248-4840
ed@btitle.com

RETURN TO:
BARRY KAPLAN, ESQ.
360 LEXINGTON AVENUE, 23RD FLOOR
TEAM EXAMINERS PICKUP
BEW YORK, NY 10017

PROPERTY DATA

Borough	Block	Lot		Unit	Address
BROOKLYN	2992	21	Entire Lot		450 JOHNSON AVENUE
Property Type: INDUSTRIAL BUILDING					
Borough	**Block**	**Lot**		**Unit**	**Address**
BROOKLYN	2992	55	Entire Lot		79 INGRAHAM STREET
Property Type: INDUSTRIAL BUILDING					

CROSS REFERENCE DATA
CRFN_____ *or* Document ID_____ *or* _____ Year____ Reel ___ Page____ *or* File Number_____

PARTIES

GRANTOR/SELLER:
ROBERT C. HARPER
450 JOHNSON AVENUE
BROOKLYN, NY 11237

GRANTEE/BUYER:
JBC LAND LLC
450 JOHNSON AVENUE
BROOKLYN, NY 11237

FEES AND TAXES

Mortgage		
Mortgage Amount:	$	0.00
Taxable Mortgage Amount:	$	0.00
Exemption:		
TAXES: County (Basic):	$	0.00
City (Additional):	$	0.00
Spec (Additional):	$	0.00
TASF:	$	0.00
MTA:	$	0.00
NYCTA:	$	0.00
Additional MRT:	$	0.00
TOTAL:	$	0.00
Recording Fee:	$	55.00
Affidavit Fee:	$	0.00

Filing Fee:	$	250.00
NYC Real Property Transfer Tax:	$	0.00
NYS Real Estate Transfer Tax:	$	0.00

RECORDED OR FILED IN THE OFFICE OF THE CITY REGISTER OF THE CITY OF NEW YORK
Recorded/Filed 12-17-2012 14:50
City Register File No.(CRFN):
2012000492988

City Register Official Signature

BARGAIN AND SALE DEED WITH COVENANT AGAINST GRANTOR'S ACTS (INDIVIDUAL OR CORPORATION)

THIS INDENTURE, made the 13th December, 2012,

BETWEEN Robert C. Harper, an individual having his principal office at Envelope Manufacturers Corporation, 450 Johnson Avenue, Brooklyn, New York 11237,

party of the first part, and

JBC Land LLC, with an office located at 450 Johnson Avenue, Brooklyn, New York 11237,

party of the second part;

WITNESSETH, that the party of the first part, in consideration of Ten Dollars and No Cents ($10.00) and other valuable consideration paid by the party of the second part, does hereby grant and release unto the party of the second part, the heirs or successors and assigns of the party of the second part forever;

ALL that certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Borough of Brooklyn, County of Kings, City and State of New York, bounded and described as follows:

Parcel 1

BEGINNING at a point on the northerly side of Ingraham Street, distant 400 feet westerly from the corner formed by the intersection of the northerly side of Ingraham Street with the westerly side of Porter Avenue;

RUNNING THENCE northerly, parallel with Porter Avenue, 100 feet;

THENCE westerly, parallel with Ingraham Street, 50 feet;

THENCE southerly again parallel with Porter Avenue, 100 feet to the northerly side of Ingraham Street; and

THENCE easterly along the northerly side of Ingraham Street, 50 feet to the point or place of BEGINNING.

Section:
Block: 2992
Lots: 21 and 55

NYSBA's Residential Real Estate Forms (9/00) © 2012 Matthew Bender & Co., a member of the LexisNexis Group.

Parcel 2

BEGINNING at a point on the southerly side of Johnson Avenue, distant 300 feet westerly from the corner formed by the intersection of the southerly side of Johnson Avenue with the westerly side of Porter Avenue;

RUNNING THENCE westerly along the southerly side of Johnson Avenue, 100 feet;

THENCE southerly, parallel with Porter Avenue, 200 feet to the northerly side of Ingraham Street;

THENCE easterly along the northerly side of Ingraham Street, 100 feet; and

THENCE northerly, parallel with Porter Avenue, 200 feet to the southerly side of Johnson Avenue at the point or place of BEGINNING.

TOGETHER with all right, title and interest, if any, of the party of the first part in and to any streets and roads abutting the above described premises to the center lines thereof,

TOGETHER with the appurtenances and all the estate and rights of the party of the first part in and to said premises,

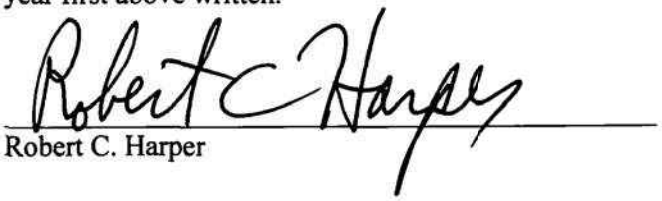
TO HAVE AND TO HOLD the premises herein granted unto the party of the second part, the heirs or successors and assigns of the party of the second part forever.

AND the party of the first part, covenants that the party of the first part has not done or suffered anything whereby the said premises have been encumbered in any way whatever, except as aforesaid.

AND the party of the first part, in compliance with Section 13 of the Lien Law, covenants that the party of the first part will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.

The word "party" shall be construed as if it read "parties" whenever the sense of this indenture so requires.

IN WITNESS WHEREOF, the party of the first part has duly executed this deed the day and year first above written.



Robert C. Harper

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STATE OF NEW YORK)
COUNTY OF New York) **ss:**

On the 13th day of December, 2012, before me, the undersigned, personally appeared **ROBERT C. HARPER** personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and he/she/they acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s) or the person upon behalf of which the individual(s) acted, executed the instrument.

Notary

BARRY MITCHELL KAPLAN
Notary Public, State of New York
No. 02KA4618904
Qualified in New York County
Commission Expires October 31, 2013

SEAL

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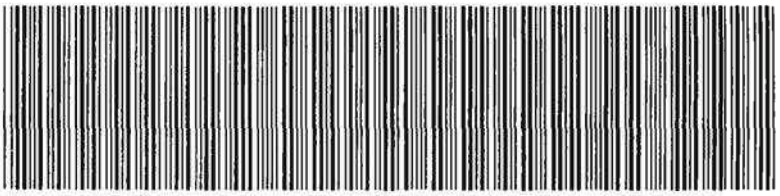
NYC DEPARTMENT OF FINANCE
OFFICE OF THE CITY REGISTER



2012121300825001003S3728

SUPPORTING DOCUMENT COVER PAGE **PAGE 1 OF 1**

Document ID: 2012121300825001 Document Date: 12-13-2012 Preparation Date: 12-14-2012
Document Type: DEED

ASSOCIATED TAX FORM ID: 2012121300272

SUPPORTING DOCUMENTS SUBMITTED:

	Page Count
DEP CUSTOMER REGISTRATION FORM FOR WATER AND SEWER BILLING	1
RP - 5217 REAL PROPERTY TRANSFER REPORT	1
SMOKE DETECTOR AFFIDAVIT	1

FOR CITY USE ONLY

C1. County Code | | C2. Date Deed Recorded | | / | / | (Month / Day / Year)

C3. Book OR C4. Page | | | | | | | | | | |

C5. CRFN | | | | | | | | | | | | | | | | | | | | |

REAL PROPERTY TRANSFER REPORT

STATE OF NEW YORK
STATE BOARD OF REAL PROPERTY SERVICES

RP - 5217NYC

PROPERTY INFORMATION

1. Property Location: 450 (STREET NUMBER) | JOHNSON AVENUE (STREET NAME) | BROOKLYN (BOROUGH) | 11237 (ZIP CODE)

CITY REGISTER

2. Buyer Name: JBC LAND LLC (LAST NAME / COMPANY) | (FIRST NAME)

(LAST NAME / COMPANY) | (FIRST NAME)

DEC 14 2012

3. Tax Billing Address — Indicate where future Tax Bills are to be sent if other than buyer address (at bottom of form): (LAST NAME / COMPANY) | (FIRST NAME)

(STREET NUMBER AND STREET NAME) | (CITY OR TOWN)

4. Indicate the number of Assessment Roll parcels transferred on the deed: 2 # of Parcels OR ☐ Part of a Parcel

4A. Planning Board Approval - N/A for NYC

4B. Agricultural District Notice - N/A for NYC

5. Deed Property Size: (FRONT FEET) X (DEPTH) OR (ACRES)

Check the boxes below as they apply:

6. Ownership Type is Condominium ☐

7. New Construction on Vacant Land ☐

8. Seller Name: HARPER (LAST NAME / COMPANY) | ROBERT C (FIRST NAME)

(LAST NAME / COMPANY) | (FIRST NAME)

9. Check the box below which most accurately describes the use of the property at the time of sale:

A ☐ One Family Residential
B ☐ 2 or 3 Family Residential
C ☐ Residential Vacant Land
D ☐ Non-Residential Vacant Land
E ☐ Commercial
F ☐ Apartment
G ☐ Entertainment / Amusement
H ☐ Community Service
I ☑ Industrial
J ☐ Public Service

SALE INFORMATION

10. Sale Contract Date: 12 / 13 / 2012 (Month / Day / Year)

11. Date of Sale / Transfer: 12 / 13 / 2012 (Month / Day / Year)

12. Full Sale Price $ 0

(Full Sale Price is the total amount paid for the property including personal property. This payment may be in the form of cash, other property or goods, or the assumption of mortgages or other obligations.) *Please round to the nearest whole dollar amount.*

13. Indicate the value of personal property included in the sale

14. Check one or more of these conditions as applicable to transfer:

A ☑ Sale Between Relatives or Former Relatives
B ☐ Sale Between Related Companies or Partners in Business
C ☐ One of the Buyers is also a Seller
D ☐ Buyer or Seller is Government Agency or Lending Institution
E ☐ Deed Type not Warranty or Bargain and Sale (Specify Below)
F ☐ Sale of Fractional or Less than Fee Interest (Specify Below)
G ☐ Significant Change in Property Between Taxable Status and Sale Dates
H ☐ Sale of Business is Included in Sale Price
I ☐ Other Unusual Factors Affecting Sale Price (Specify Below)
J ☐ None

ASSESSMENT INFORMATION - Data should reflect the latest Final Assessment Roll and Tax Bill

15. Building Class: F 4

16. Total Assessed Value (of all parcels in transfer): 553,950

17. Borough, Block and Lot / Roll Identifier(s) (If more than three, attach sheet with additional identifier(s))

BROOKLYN 2992 21 | BROOKLYN 2992 55 |

2012121300272201O1

CERTIFICATION

I certify that all of the items of information entered on this form are true and correct (to the best of my knowledge and belief) and understand that the making of any willful false statement of material fact herein will subject me to the provisions of the penal law relative to the making and filing of false instruments.

JBC Prop LLC

BUYER

Robert C Harper 12/13/2012

BUYER SIGNATURE DATE

BY ROBERT C HARPER

450 JOHNSON AVENUE

STREET NUMBER STREET NAME (AFTER SALE)

BROOKLYN NY 11237

CITY OR TOWN STATE ZIP CODE

BUYER'S ATTORNEY

BARRY KAPLAN, ESQ

LAST NAME FIRST NAME

212 779-3535

AREA CODE TELEPHONE NUMBER

SELLER

Robert C Harper 12/13/2012

SELLER SIGNATURE DATE

ROBERT C HARPER

2012121300272201

Affidavit of Compliance with Smoke Detector Requirement for One and-Two Family Dwellings

AFFIDAVIT OF COMPLIANCE WITH SMOKE DETECTOR REQUIREMENT FOR ONE- AND TWO-FAMILY DWELLINGS

State of New York)
County of New York) SS.:

The undersigned, being duly sworn, depose and say under penalty of perjury that they are the grantor and grantee of the real property or of the cooperative shares in a cooperative corporation owning real property located at

450 JOHNSON AVENUE , ,
Street Address Unit/Apt.

BROOKLYN New York, 2992 21 (the "Premises");
Borough Block Lot

That the Premises is a one or two family dwelling, or a cooperative apartment or condominium unit in a one- or two-family dwelling, and that installed in the Premises is an approved and operational smoke detecting device in compliance with the provisions of Article 6 of Subchapter 17 of Chapter 1 of Title 27 of the Administrative Code of the City of New York concerning smoke detecting devices;

That they make affidavit in compliance with New York City Administrative Code Section 11-2105 (g). (The signatures of at least one grantor and one grantee are required, and must be notarized).

ROBERT C HARPER
Name of Grantor (Type or Print)
Robert C Harper
Signature of Grantor

Sworn to before me
this 13th date of DECEMBER 2012
BARRY MITCHELL KAPLAN
Notary Public, State of New York
No. 02KA4618904
Qualified in New York County
Commission Expires October 31, 2013

JBC LAND LLC
BY ROBERT C HARPER, MANAGING MEMBER
Name of Grantee (Type or Print)
Robert C Harper
Signature of Grantee

Sworn to before me
this 13th date of DECEMBER 2012
BARRY MITCHELL KAPLAN
Notary Public, State of New York
No. 02KA4618904
Qualified in New York County
Commission Expires October 31, 2013

These statements are made with the knowledge that a willfully false representation is unlawful and is punishable as a crime of perjury under Article 210 of the Penal Law.

NEW YORK CITY REAL PROPERTY TRANSFER TAX RETURNS FILED ON OR AFTER FEBRUARY 6th, 1990, WITH RESPECT TO THE CONVEYANCE OF A ONE- OR TWO-FAMILY DWELLING, OR A COOPERATIVE APARTMENT OR A CONDOMINIUM UNIT IN A ONE- OR TWO-FAMILY DWELLING, WILL NOT BE ACCEPTED FOR FILING UNLESS ACCOMPANIED BY THIS AFFIDAVIT.

SEE ATTACHED PAGE FOR ADDITIONAL APPLICABLE PROPERTIES

SEAL

2012121300272101

Affidavitt of Compliance with Smoke Detector Requirment by one and Two Family Dwellings

Applicable properties compliant with the Smoke Detector requirement

Street Address	Unit/Apt	Borough	Block	Lot
79 INGRAHAM STREET		BROOKLYN	2992	55

2012121300272101

The City of New York
Department of Environmental Protection
Bureau of Customer Services
59-17 Junction Boulevard
Flushing, NY 11373-5108

Customer Registration Form for Water and Sewer Billing

Property and Owner Information:

(1) Property receiving service: BOROUGH: BROOKLYN BLOCK: 2992 LOT: 21

(2) Property Address: 450 JOHNSON AVENUE, BROOKLYN, NY 11237

(3) Owner's Name: JBC LAND LLC

Additional Name:

Affirmation:

☑ Your water & sewer bills will be sent to the property address shown above.

Customer Billing Information:

Please Note:

A. Water and sewer charges are the legal responsibility of the owner of a property receiving water and/or sewer service. The owner's responsibility to pay such charges is not affected by any lease, license or other arrangement, or any assignment of responsibility for payment of such charges. Water and sewer charges constitute a lien on the property until paid. In addition to legal action against the owner, a failure to pay such charges when due may result in foreclosure of the lien by the City of New York, the property being placed in a lien sale by the City or Service Termination.

B. Original bills for water and/or sewer service will be mailed to the owner, **at the property address or to an alternate mailing address**. DEP will provide a duplicate copy of bills to one other party (such as a managing agent), however, any failure or delay by DEP in providing duplicate copies of bills shall in no way relieve the owner from his/her liability to pay all outstanding water and sewer charges. Contact DEP at (718) 595-7000 during business hours or visit www.nyc.gov/dep to provide us with the other party's information.

Owner's Approval:

The undersigned certifies that he/she/it is the owner of the property receiving service referenced above; that he/she/it has read and understands Paragraphs A & B under the section captioned "Customer Billing Information"; and that the information supplied by the undersigned on this form is true and complete to the best of his/her/its knowledge.

Print Name of Owner: JBC LAND LLC

Signature: Robert C Harder Date (mm/dd/yyyy) 12/13/2012

Name and Title of Person Signing for Owner, if applicable: by ROBERT C HARDER, MANAGING MEMBER

SEE ATTACHED PAGE FOR ADDITIONAL APPLICABLE PROPERTIES

BCS-7CRF-ACRIS REV. 8/08

The City of New York
Department of Environmental Protection
Bureau of Customer Services
59-17 Junction Boulevard
Flushing, NY 11373-5108

Customer Registration Form for Water and Sewer Billing

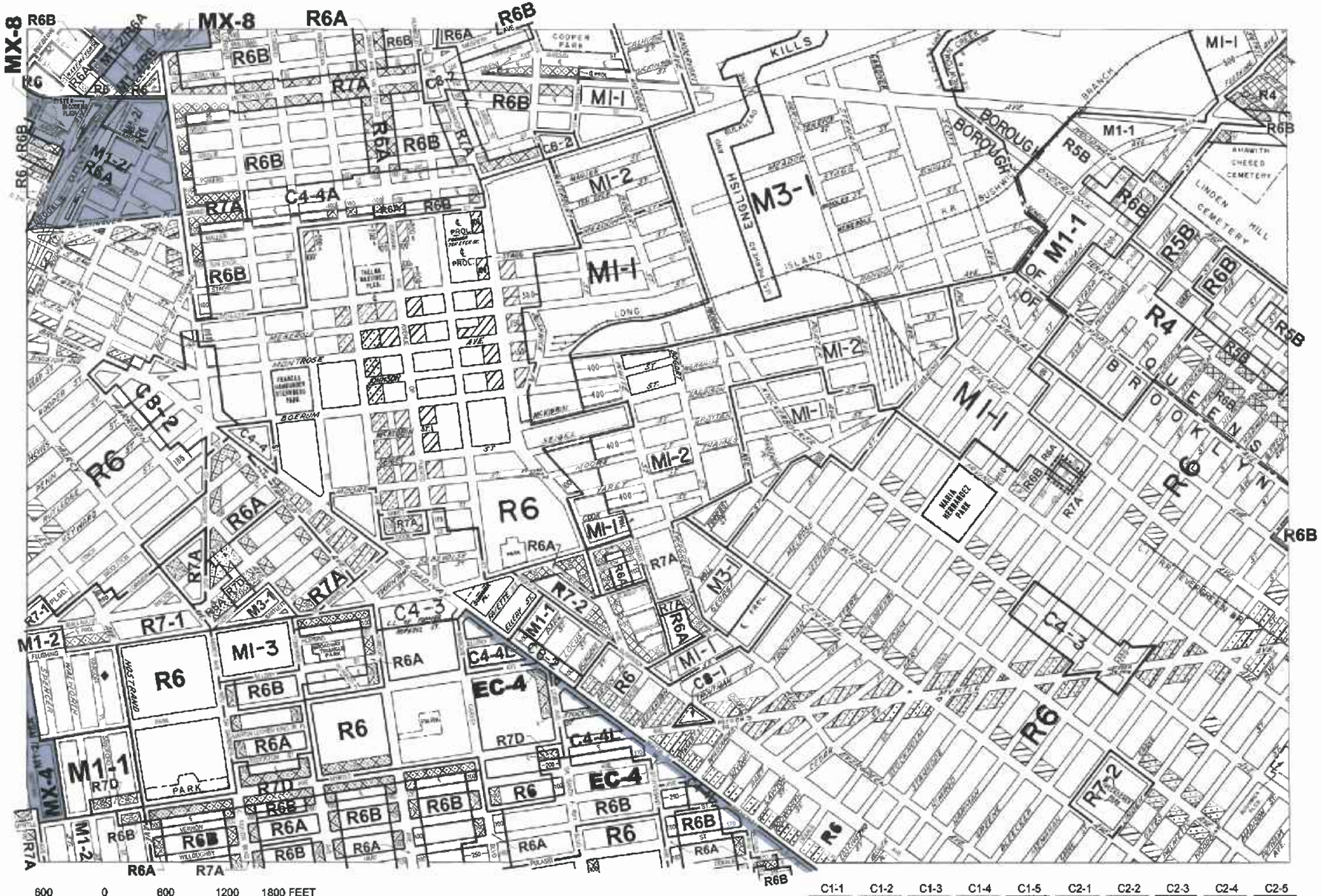
Borough	Block	Lot	Street	City	State	Zip
BROOKLYN	2992	55	79 INGRAHAM STREET	NY	NY	11237

20121213002721010l

APPENDIX E
REFERENCED MATERIAL AND OTHER INFORMATION SOURCE

ATTACHMENT E1 – NEW YORK CITY PLANNING COMMISSION

ZONING MAP 13B


MX-8
R6B
R6A
MX-8
R6A
R6B
R6B
R7A
C8-2
MI-1
R6B
MI-2
M3-1
C4-4A
R6B
R7A
R6B
MI-1
R6B
C8-2
R6
R6A
C8-2
C4-4
R6
R6A
R7A
R7A
R6
R6A
R7A
R7-1
M3-1
C4-3
M1-2
R7-1
MI-3
R6
R6A
C4-4L
EC-4
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R6
R6A
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R6B
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R7A
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M3-1
R7A
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R7-2
M1-1
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R6
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R6B
MI-1
KILLS
M3-1
ENGLISH
BOROUGH
BOROUGH
M1-1
R5B
R6B
R4
R6B
LINDEN CEMETERY
MI-1
MI-2
M1-1
OF
R4
R5B
R6B
R5B
R6B
R6
R6B
R7A
R6
R6B
R7-2
C4-3
C4-3
R6
R6
R6

ATTACHMENT E2 – NEW YORK CITY DEPARTMENT OF BUILDINGS DOCUMENTS

311 (https://www1.nyc.gov/311/index.page) | Buildings | Search all NYC.gov websites
(https://www1.nyc.gov/home/search/index.page)

Back Home

440 JOHNSON AVENUE | BROOKLYN 11237 | BIN# 3325627

Property Profile

Alternate Addresses:
JOHNSON AVENUE
440 - 440

Cross Street(s)
KNICKERBOCKER AVENUE, PORTER AVENUE

DOB Special Place Name
JOHNSON AVE

Tax Block
2992

Tax Lot
17

Community Board
301

Condo
NO

Buildings on Lot
2

Vacant
NO

Health Area
900

Census Tract
453

DOB Building Remarks

Landmark Status

Special Status
N/A

Local Law
NO

Loft Law
NO

SRO Restricted
NO

TA Restricted
NO

UB Restricted
NO

Environmental Restrictions
N/A

Grandfathered Sign
NO

Legal Adult Use
NO

City Owned
NO

Additional BINs for Building
NONE

Special District

This property is located in an area that may be affected by the following:

Tidal Wetlands Map Check:	No
Freshwater Wetlands Map Check:	No
Coastal Erosion Hazard Area Map Check:	No
Special Flood Hazard Area Check:	No

Department of Finance Building Classification: F5-FACTORY/INDSTRIAL

Please Note: The Department of Finance's building classification information shows a building's tax status, which may not be the same as the legal use of the structure. To determine the legal use of a structure, research the records of the Department of Buildings.

Filings

BUILD: Job Filings

()

SAFETY: Compliance Filings

()

← Back

(https://www1.nyc.gov/nyc-resources/agencies.page)

(https://www1.nyc.gov/home/contact-us.page)

Notify NYC (https://a858-nycnotify.nyc.gov/notifynyc)

CityStore (https://a856-citystore.nyc.gov/)

Stay Connected (https://www1.nyc.gov/connect/social-media.page)

NYC Mobile Apps (https://www1.nyc.gov/connect/applications.page)

Maps (https://www1.nyc.gov/nyc-resources/nyc-maps.page)

Resident Toolkit (https://www1.nyc.gov/nyc-resources/resident-toolkit.page)

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CLICK HERE TO SIGN UP FOR BUILDINGS NEWS

NYC Department of Buildings

Address Information From Department of City Planning

Premises: 440 JOHNSON AVENUE BROOKLYN **BIN: 3325627 Block: 2992 Lot: 17**

LOW NUMBER	HIGH NUMBER	STREET NAME	STCDE	BIN
440	440	JOHNSON AVENUE	53530	3325627
442	448	JOHNSON AVENUE	53530	3325626

If you have any questions please review these Frequently Asked Questions, the Glossary, or call the 311 Citizen Service Center by dialing 311 or (212) NEW YORK outside of New York City.

CLICK HERE TO SIGN UP FOR BUILDINGS NEWS

NYC Department of Buildings

Property Profile Overview

440 JOHNSON AVENUE **BROOKLYN 11237** **BIN# 3325627**

JOHNSON AVENUE 440 - 440

Health Area	: 900	**Tax Block**	: 2992
Census Tract	: 453	**Tax Lot**	: 17
Community Board	: 301	**Condo**	: NO
Buildings on Lot	: 2	**Vacant**	: NO

View DCP Addresses... Browse Block

View Zoning Documents | View Challenge Results | Pre - BIS PA | View Certificates of Occupancy

Cross Street(s):	KNICKERBOCKER AVENUE, PORTER AVENUE		
DOB Special Place Name:	JOHNSON AVE		
DOB Building Remarks:			
Landmark Status:		**Special Status:**	N/A
Local Law:	NO	**Loft Law:**	NO
SRO Restricted:	NO	**TA Restricted:**	NO
UB Restricted:	NO		
Environmental Restrictions:	N/A	**Grandfathered Sign:**	NO
Legal Adult Use:	NO	**City Owned:**	NO
Additional BINs for Building:	NONE		
Additional Designation(s):	IBZ - INDUSTRIAL BUSINESS ZONE		

Special District: UNKNOWN

This property is not located in an area that may be affected by Tidal Wetlands, Freshwater Wetlands, Coastal Erosion Hazard Area, or Special Flood Hazard Area. Click here for more information

Department of Finance Building Classification: F5-FACTORY/INDSTRIAL

Please Note: The Department of Finance's building classification information shows a building's tax status, which may not be the same as the legal use of the structure. To determine the legal use of a structure, research the records of the Department of Buildings.

	Total	Open	
Complaints	0	0	Elevator Records
Violations-DOB	1	0	Electrical Applications
			Permits In-Process / Issued

Violations-ECB (DOB)	0	0
Jobs/Filings	1	
ARA / LAA Jobs	0	
Total Jobs	1	
Actions	40	

OR Enter Action Type:

OR Select from List: Select...

AND Show Actions

Illuminated Signs Annual Permits
Plumbing Inspections
Open Plumbing Jobs / Work Types
Facades
Marquee Annual Permits
Boiler Records
DEP Boiler Information
Crane Information
After Hours Variance Permits

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NYC Department of Buildings

Actions

Premises: 440 JOHNSON AVENUE BROOKLYN **BIN: 3325627 Block: 2992 Lot: 17**

NUMBER		TYPE	FILE DATE
A 11783-092820		ALTERATION	00/00/1909
A 11783-102720		ALTERATION	00/00/1910
A 11783-20		ALTERATION	09/28/1920
ALT 756-022646		ALTERATION	00/00/1902
ALT 4467SHED-030544		ALTERATION	00/00/1903
ALT 10366-082020		ALTERATION	00/00/1908
ALT 14944-083122		ALTERATION	00/00/1908
ALT 3754-082346		ALTERATION	00/00/1908
ALT 11041-090522		ALTERATION	00/00/1909
ALT 7567-090420		ALTERATION	00/00/1909
ALT 10366-20		ALTERATION	08/20/1920
ALT 7567-20		ALTERATION	09/04/1920
ALT 14944-22		ALTERATION	08/31/1922
ALT 11041-22		ALTERATION	09/05/1922
ALT 4467-24		ALTERATION	03/05/1924
ALT 756-46		ALTERATION	02/26/1946
ALT 3754-46		ALTERATION	08/23/1946
BN 1198-440-48-062749		BUILDING NOTICE	00/00/1944
CERT 51554-071238	(PDF)	CERTIFICATE OF OCCUPANCY	00/00/1907
CERT ISSUED51554 NB5474	(PDF)	CERTIFICATE OF OCCUPANCY	03/15/1928
DOC 12385-071449		DOCKET	00/00/1907
DOC 12385-49		DOCKET	07/18/1949
FO 12299-122646		OIL BURNER APPLICATION	00/00/1912
FO 12299-46		OIL BURNER APPLICATION	12/26/1946
NB 37761-1CFACTORY-031528		NEW BUILDING	00/00/0000

Next

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NYC Department of Buildings

Work Permit Data

Premises: 440 JOHNSON AVENUE BROOKLYN **Filed At: 440 JOHNSON AVENUE BROOKLYN**

BIN: 3325627 Block: 2992 Lot: 17 **Job Type: A2 - ALTERATION TYPE 2**

Job No:	300675749			**Fee:**	STANDARD
Permit No:	300675749-01-EW-BL	**Issued:**	11/21/1997	**Expires:**	05/01/1998
Seq. No.:	01	**Filing Date:**	11/21/1997 INITIAL	**Status:**	ISSUED
Work:		**Proposed Job Start:**	11/21/1997	**Work Approved:**	11/06/1997

ALTERATION TYPE 2 - BOILER
INSTALL GAS BURNER AND BOILER NO CHANGE IN USE EGRESS OR OCCUP
ANCY IS INVOLVED UNDER THIS APPLICATION

Use: N/A **Landmark:** NO **Stories:** 0

Review is requested under Building Code: 1968

Issued to: LUCIANO FERRARI **MASTER PLUMBER**
Business: LUCIAN FERRERI INC **License No:** MP 009300
69-04 FOREST AVE QUEENS NY 11385 **Phone:** 718-381-3400

Filing Represntative: SISTO MARTELLO
Business: DESIGN 2147 LTD **Phone:** 718-383-9340
52 DIAMOND STREET BROOKLYN NY 11222

If you have any questions please review these Frequently Asked Questions, the Glossary, or call the 311 Citizen Service Center by dialing 311 or (212) NEW YORK outside of New York City.

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Work Permit Data

Premises: 440 JOHNSON AVENUE BROOKLYN **Filed At: 440 JOHNSON AVENUE BROOKLYN**

BIN: 3325627 Block: 2992 Lot: 17 **Job Type: A2 - ALTERATION TYPE 2**

Inspection Results

Job No:	300675749			**Fee:**	STANDARD
Permit No:	300675749-01-PL	**Issued:**	11/21/1997	**Expires:**	11/21/1998
Seq. No.:	01	**Filing Date:**	11/21/1997 INITIAL	**Status:**	ISSUED
Work:		**Proposed Job Start:**	11/21/1997	**Work Approved:**	11/06/1997

PLUMBING - ALTERATION TYPE 2
INSTALL GAS BURNER AND BOILER NO CHANGE IN USE EGRESS OR OCCUP
ANCY IS INVOLVED UNDER THIS APPLICATION

Use: N/A **Landmark:** NO **Stories:** 0

Review is requested under Building Code: 1968

Issued to: LUCIANO FERRARI **MASTER PLUMBER**
Business: LUCIAN FERRERI INC **License No:** MP 009300
69-04 FOREST AVE QUEENS NY 11385 **Phone:** 718-381-3400

Filing Represntative: SISTO MARTELLO
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Actions

Premises: 440 JOHNSON AVENUE BROOKLYN **BIN: 3325627 Block: 2992 Lot: 17**

NUMBER		TYPE	FILE DATE
A 11783-092820		ALTERATION	00/00/1909
A 11783-102720		ALTERATION	00/00/1910
A 11783-20		ALTERATION	09/28/1920
ALT 756-022646		ALTERATION	00/00/1902
ALT 4467SHED-030544		ALTERATION	00/00/1903
ALT 10366-082020		ALTERATION	00/00/1908
ALT 14944-083122		ALTERATION	00/00/1908
ALT 3754-082346		ALTERATION	00/00/1908
ALT 11041-090522		ALTERATION	00/00/1909
ALT 7567-090420		ALTERATION	00/00/1909
ALT 10366-20		ALTERATION	08/20/1920
ALT 7567-20		ALTERATION	09/04/1920
ALT 14944-22		ALTERATION	08/31/1922
ALT 11041-22		ALTERATION	09/05/1922
ALT 4467-24		ALTERATION	03/05/1924
ALT 756-46		ALTERATION	02/26/1946
ALT 3754-46		ALTERATION	08/23/1946
BN 1198-440-48-062749		BUILDING NOTICE	00/00/1944
CERT 51554-071238	(PDF)	CERTIFICATE OF OCCUPANCY	00/00/1907
CERT ISSUED51554 NB5474	(PDF)	CERTIFICATE OF OCCUPANCY	03/15/1928
DOC 12385-071449		DOCKET	00/00/1907
DOC 12385-49		DOCKET	07/18/1949
FO 12299-122646		OIL BURNER APPLICATION	00/00/1912
FO 12299-46		OIL BURNER APPLICATION	12/26/1946
NB 37761-1CFACTORY-031528		NEW BUILDING	00/00/0000

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NYC Department of Buildings

Actions

Premises: 440 JOHNSON AVENUE BROOKLYN **BIN: 3325627** **Block: 2992** **Lot: 17**

NUMBER	TYPE	FILE DATE
NB 358DENIEDINACTIV-022646	NEW BUILDING	00/00/1902
NB 5474-052228	NEW BUILDING	00/00/1905
NB 3776-28	NEW BUILDING	03/15/1928
NB 5474-28	NEW BUILDING	05/22/1928
NB 358-46	NEW BUILDING	02/26/1946
NB 1198/440-49	NEW BUILDING	03/01/1949
NBNB 5474-28		00/00/1928
P &D4361DENIEDINACTI-02264	PLUMBING	00/00/1902
P &D1354-071228	PLUMBING	00/00/1907
P &D8397-082346	PLUMBING	00/00/1908
P&D 1354-28	PLUMBING & DRAINAGE	07/12/1928
P&D 1361-46	PLUMBING & DRAINAGE	02/26/1946
P&D 8397-46	PLUMBING & DRAINAGE	08/23/1946
REMO VEDO		00/00/0000
UNK 9-11-2046282651CWOOD	UNKNOWN	00/00/1911
V* 2381FLANAGANREMO-062449	DOB VIOLATION - CLOSED	00/00/0000

CLOSURE DATE: 09/28/2011

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Address Information From Department of City Planning

Premises: 440 JOHNSON AVENUE BROOKLYN **BIN: 3325627 Block: 2992 Lot: 17**

LOW NUMBER	HIGH NUMBER	STREET NAME	STCDE	BIN
440	440	JOHNSON AVENUE	53530	3325627
442	448	JOHNSON AVENUE	53530	3325626

If you have any questions please review these Frequently Asked Questions, the Glossary, or call the 311 Citizen Service Center by dialing 311 or (212) NEW YORK outside of New York City.

DUPLICATE No. 51554

OFFICE OF THE PRESIDENT OF THE BOROUGH OF BROOKLYN

BUREAU OF BUILDINGS

CERTIFICATE OF OCCUPANCY

(ISSUED PURSUANT TO ARTICLE 1, SECTION 5, BUILDING CODE)

BROOKLYN, N.Y. July 12, 1928

OWNER N. K. C. Holding Corp. Inc.

ARCHITECT J. L. Muse

This is to certify that the NEW BUILDING [redacted] 440-446 Johnson Ave & 100 to 106 Morgan Ave

has been COMPLETED substantially according to the approved plans and specifications and requirements of the BUILDING CODE, and PERMISSION is hereby granted for the OCCUPANCY of said building for the following purposes:

This certificate supersedes all previously issued certificates.

	LIVE LOADS LBS. PER SQ. FT.	PERSONS ACCOMMODATED MALE	FEMALE	TOTAL	USE
[redacted]					Ordinary use
Cellar					None
First Story	120.	3	0	3	Factory.
Second					
Third					
Fourth					
Fifth					
Sixth					
Seventh					
Eighth					
Ninth					
Roof to					
[redacted]					

Number of Buildings one (1)

Permit No. 5474-28

Work Completed 7/11/28

Albert E. Kleinert

Per [illegible]

BA-648-3-CC

311 (https://www1.nyc.gov/311/index.page) | Buildings | Search all NYC.gov websites
(https://www1.nyc.gov/home/search/index.page)

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450 JOHNSON AVENUE | BROOKLYN 11237 | BIN# 3070612

Property Profile

Alternate Addresses:

INGRAHAM STREET
83 - 89
JOHNSON AVENUE
450 - 450

Cross Street(s)
KNICKERBOCKER AVENUE, PORTER AVENUE

DOB Special Place Name

Tax Block
2992

Tax Lot
21

Community Board
301

Condo
NO

Buildings on Lot
1

Vacant
NO

Health Area
900

Census Tract
453

DOB Building Remarks

Landmark Status

Special Status
N/A

Local Law
NO

Loft Law
NO

SRO Restricted
NO

TA Restricted
NO

UB Restricted
NO

Environmental Restrictions
N/A

Grandfathered Sign
NO

Legal Adult Use
NO

City Owned
NO

Additional BINs for Building
3070613

Special District

This property is located in an area that may be affected by the following:

Tidal Wetlands Map Check:	No
Freshwater Wetlands Map Check:	No
Coastal Erosion Hazard Area Map Check:	No
Special Flood Hazard Area Check:	No

Department of Finance Building Classification: F4-FACTORY/INDSTRIAL

Please Note: The Department of Finance's building classification information shows a building's tax status, which may not be the same as the legal use of the structure. To determine the legal use of a structure, research the records of the Department of Buildings.

Filings

BUILD: Job Filings

()

SAFETY: Compliance Filings

()

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CityStore (https://a856-citystore.nyc.gov/)

Stay Connected (https://www1.nyc.gov/connect/social-media.page)

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Resident Toolkit (https://www1.nyc.gov/nyc-resources/resident-toolkit.page)

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NYC Department of Buildings

Actions

Premises: 450 JOHNSON AVENUE BROOKLYN **BIN: 3070612 Block: 2992 Lot: 21**

NUMBER		TYPE	FILE DATE
2444-45 (85-91)			00/00/1945
A 8850-042124		ALTERATION	00/00/1924
ALT 6325-081233		ALTERATION	00/00/1933
ALT 8650GASTANK-081033		ALTERATION	00/00/1933
ALT 5294-101740		ALTERATION	00/00/1940
ALTA 6325-33			00/00/1933
BN 2137-456-070159		BUILDING NOTICE	00/00/1959
BN 92-456-474ALSOON-011662		BUILDING NOTICE	00/00/1962
C -A13901-040670		CONSTRUCTION	00/00/1970
CERT 46299-060924	(PDF)	CERTIFICATE OF OCCUPANCY	00/00/1924
CERT 104798-ALT5294/41	(PDF)	CERTIFICATE OF OCCUPANCY	03/18/1942
DCD 5655ALT5294-40-030442			00/00/1942
DENI 3-042224			00/00/1924
ELV 749MANNINGREMOVE-122444		ELEVATOR	00/00/1944
ES 11435-072924		ELECTRIC SIGN	00/00/1924
ES 15811-072924		ELECTRIC SIGN	00/00/1924
ES 13059-080428		ELECTRIC SIGN	00/00/1928
ES 9123-081028		ELECTRIC SIGN	00/00/1928
ES 6688-30		ELECTRIC SIGN	00/00/1930
ES 4514-052731		ELECTRIC SIGN	00/00/1931
ES 4515-052731		ELECTRIC SIGN	00/00/1931
ES 6275-450-052231		ELECTRIC SIGN	00/00/1931
ES 6276-450-052231		ELECTRIC SIGN	00/00/1931
ES 6957DENIEDINACTI-080431		ELECTRIC SIGN	00/00/1931
ES 9646-072831		ELECTRIC SIGN	00/00/1931

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NYC Department of Buildings

Actions

Premises: 450 JOHNSON AVENUE BROOKLYN **BIN: 3070612** **Block: 2992** **Lot: 21**

NUMBER	TYPE	FILE DATE
FO 790-032455	OIL BURNER APPLICATION	00/00/1955
FO 1399-456-092965	OIL BURNER APPLICATION	00/00/1965
NB 3045-031024	NEW BUILDING	00/00/1923
NB 2951-021524	NEW BUILDING	00/00/1924
NBNB 3045-24		00/00/1924
P &D1043-7-04	PLUMBING	00/00/0000
P &D1705-6-0	PLUMBING	00/00/0000
P&D 8819=41	PLUMBING & DRAINAGE	00/00/0000
P&D 230009-45(85-91)	PLUMBING & DRAINAGE	00/00/1945
PRS 11231-450-091774	PLUMBING REPAIR SLIP	00/00/1945
UNK 456-474	UNKNOWN	00/00/1947
V* 3770MOLLOY-091840	DOB VIOLATION - CLOSED	00/00/0000
CLOSURE DATE: 09/28/2011		
V* 3997/450SCHULTZ5--093070	DOB VIOLATION - CLOSED	00/00/0000
CLOSURE DATE: 09/28/2011		
V* 301/456-72CONNARD-122665	DOB VIOLATION - CLOSED	00/00/1945
CLOSURE DATE: 09/28/2011		
V* 414/456-74CONNARD-020265	DOB VIOLATION - CLOSED	00/00/1945
CLOSURE DATE: 09/28/2011		
WORK 8500-011436		00/00/1901
1N 36-41		00/00/1941
V 021304LL629121071	DOB VIOLATION - ACTIVE	02/13/2004
V 010606LL629117205	DOB VIOLATION - ACTIVE	01/06/2006
V 011907LL629117605	DOB VIOLATION - ACTIVE	01/19/2007
V* 010308LL629117360	DOB VIOLATION - DISMISSED	01/03/2008
V* 010109LL629117226	DOB VIOLATION - DISMISSED	01/01/2009
V* 030113LBLVIO08621	DOB VIOLATION - DISMISSED	03/01/2013
VEC* 081004B112914	ECB VIOLATION DISMISSED	08/10/2004

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Address Information From Department of City Planning

Premises: 450 JOHNSON AVENUE BROOKLYN **BIN: 3070612 Block: 2992 Lot: 21**

LOW NUMBER	HIGH NUMBER	STREET NAME	STCDE	BIN
450	450	JOHNSON AVENUE	53530	3070612
83	89	INGRAHAM STREET	52030	3070612

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NYC Department of Buildings

Boiler Details

Premises: 450 JOHNSON AVENUE BROOKLYN **BIN: 3070612 Block: 2992 Lot: 21**

DOB NOW: *Inspections*

Boiler-No: 112914 **Serial-No:** 01 **Type:** MULT DWELL LOW PRESSURE
Boiler Status: ACTIVE **Review Required:**

Filed At: 450 JOHNSON AVENUE **BIN: 3070612 BBL: 3-02992-00021**

Located in: N/A
Make of Boiler: PEERLESS **Year:**
Over6: No **No-of-Boilers:** 01
Fee: Yes **School:** No

The below information does not include 2017 Boiler Inspection Cycle compliance filings submitted after August 14, 2017; use the DOB NOW Public Portal to access DOB NOW records.

INSP-DATE	REC-DATE	ENTRY DATE	NAME	Int/Ext	RESULTS	NYS CERTIFICATE
03/20/2017	04/14/2017	05/18/2017	LARIOS CARLOS		NO DEFECTS	P 001478
03/08/2016	04/08/2016	04/13/2016	SAMUELS HENRY		NO DEFECTS	P 002294
03/13/2015	03/25/2015	03/30/2015	SAMUELS HENRY		NO DEFECTS	P 002294
03/14/2014	04/15/2014	04/24/2014	SAMUELS HENRY		NO DEFECTS	P 002294
04/08/2013	05/17/2013	05/31/2013	LATORA VINCENT		NO DEFECTS	O 004242
12/28/2012	04/11/2013	04/22/2013	LATORA VINCENT		NO DEFECTS - LATE FILING	O 4242
12/03/2009	01/07/2010	03/04/2010	GLEIXNER HARRY		NO DEFECTS	P 772
05/08/2009	06/29/2009	01/05/2010	GLEIXNER HARRY		NO DEFECTS	P 0772
05/05/2008	07/24/2009	07/30/2009	GLEIXNER HARRY		NO DEFECTS	P 772
09/25/2007	07/31/2008	08/01/2008	GLEIXNER HARRY		NO DEFECTS	P 772
10/07/2004	11/17/2004	12/10/2004	GLEIXNER HARRY		NO DEFECTS	P 772

08/10/2004	ALI 1989 (ZJ)	ISSUED VIOL#32044897R
08/10/2004	ALI 1989 (ZJ)	F/T PASSED 301652557

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NYC Department of Buildings

Boiler Details

Premises: 450 JOHNSON AVENUE BROOKLYN **BIN: 3070612 Block: 2992 Lot: 21**

DOB NOW: *Inspections*

Boiler-No: 821138 **Serial-No:** 01 **Type:** COMMERCIAL LOW PRESSURE
Boiler Status: VOID **Review Required:**

Filed At: 450 JOHNSON AVENUE **BIN: 3070612 BBL: 3-02992-00002**

Located in: BASEMENT
Make of Boiler: PEERLESS **Year:**
Over6: No **No-of-Boilers:** 01
Fee: Yes **School:** No

The below information does not include 2017 Boiler Inspection Cycle compliance filings submitted after August 14, 2017; use the DOB NOW Public Portal to access DOB NOW records.

INSP-DATE	REC-DATE	ENTRY DATE	NAME	Int/Ext	RESULTS	NYS CERTIFICATE
10/07/2002	12/24/2002	01/07/2003	BENDJOUYA MICHAEL		DEFECTS EXIST	O 1509
11/03/2001	11/09/2001	12/17/2001	BENDJOUYA MICHAEL		NO DEFECTS	O 1509
08/10/2004			ALI 1989 (ZJ)		VOID 821138 SEE 112914	
03/12/2004			FRANK 1129		FAILED F/T 301652557	

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Boiler Query

The below information does not include 2017 Boiler Inspection Cycle compliance filings submitted after August 14, 2017; use the DOB NOW Public Portal to access DOB NOW records.

Premises: 450 JOHNSON AVENUE BROOKLYN **BIN: 3070612 Block: 2992 Lot: 21**

VIOL	NUM	MD	SER#	STATUS	INSP-DATE	RECV-DATE	NAME
N	112914	Y	01	ACTIVE	03/20/2017	04/14/2017	P 001478 LARIOS CARLOS
Y	821138	N	01	VOID	10/07/2002	12/24/2002	O 1509 BENDJOUYA MICHAEL

If you have any questions please review these Frequently Asked Questions, the Glossary, or call the 311 Citizen Service Center by dialing 311 or (212) NEW YORK outside of New York City.

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DOB Violation Display for 010109LL629117226

Premises: 450 JOHNSON AVENUE BROOKLYN **BIN: 3070612** **Block: 2992** **Lot: 21**

Issue Date: 01/01/2009
Violation Type: LL6291 - LOCAL LAW 62/91 - BOILERS
Violation Number: 17226
ECB No.:
Infraction Codes:
Description:
Click here to view the Civil Penalty Chart.

Violation Category: V* - DOB VIOLATION - DISMISSED
Device No.: 00112914 - 01-RESIDENTIAL

Disposition:
Code: D - DISMISSED **Date:** 07/30/2009
Inspector:
Comments: MLSCIA DISMISSED, REDUCED PENALTY PD $50 INV# 60815919 OC# 9866801002

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DOB Violation Display for 010308LL629117360

Premises: 450 JOHNSON AVENUE BROOKLYN **BIN: 3070612** **Block: 2992** **Lot: 21**

Issue Date: 01/03/2008
Violation Type: LL6291 - LOCAL LAW 62/91 - BOILERS
Violation Number: 17360
ECB No.:
Infraction Codes:
Description:
Click here to view the Civil Penalty Chart.

Violation Category: V* - DOB VIOLATION - DISMISSED
Device No.: 00112914 - 01-RESIDENTIAL

Disposition:
Code: D - DISMISSED **Date:** 08/01/2008
Inspector:
Comments: YCRCIA DISMISSED REDUCED PENALTY PAID $5 0 MO#9836800111 INV#60721833

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NYC Department of Buildings

DOB Violation Display for 010606LL629117205

Premises: 450 JOHNSON AVENUE BROOKLYN **BIN: 3070612** **Block: 2992** **Lot: 21**

Issue Date:	01/06/2006	**Violation Category:**	V - DOB VIOLATION - ACTIVE
Violation Type:	LL6291 - LOCAL LAW 62/91 - BOILERS		
Violation Number:	17205	**Device No.:**	00112914 - 01-RESIDENTIAL
ECB No.:			
Infraction Codes:			
Description:			

Click here to view the Civil Penalty Chart.

Disposition:
Code: **Date:**
Inspector:
Comments:

If you have any questions please review these Frequently Asked Questions, the Glossary, or call the 311 Citizen Service Center by dialing 311 or (212) NEW YORK outside of New York City.

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NYC Department of Buildings

DOB Violation Display for 011907LL629117605

Premises: 450 JOHNSON AVENUE BROOKLYN **BIN: 3070612** **Block: 2992** **Lot: 21**

Issue Date:	01/19/2007	**Violation Category:**	V - DOB VIOLATION - ACTIVE
Violation Type:	LL6291 - LOCAL LAW 62/91 - BOILERS		
Violation Number:	17605	**Device No.:**	00112914 - 01-RESIDENTIAL
ECB No.:			
Infraction Codes:			
Description:			

Click here to view the Civil Penalty Chart.

Disposition:
Code: **Date:**
Inspector:
Comments:

If you have any questions please review these Frequently Asked Questions, the Glossary, or call the 311 Citizen Service Center by dialing 311 or (212) NEW YORK outside of New York City.

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NYC Department of Buildings

DOB Violation Display for 021304LL629121071

Premises: 450 JOHNSON AVENUE BROOKLYN **BIN: 3070612** **Block: 2992** **Lot: 21**

Issue Date:	02/13/2004	**Violation Category:**	V - DOB VIOLATION - ACTIVE
Violation Type:	LL6291 - LOCAL LAW 62/91 - BOILERS		
Violation Number:	21071	**Device No.:**	00821138 - 01-COMMERCIAL
ECB No.:			
Infraction Codes:			
Description:			

Click here to view the Civil Penalty Chart.

Disposition:
Code: **Date:**
Inspector:
Comments:

If you have any questions please review these Frequently Asked Questions, the Glossary, or call the 311 Citizen Service Center by dialing 311 or (212) NEW YORK outside of New York City.

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NYC Department of Buildings

DOB Violation Display for 030113LBLVIO08621

Premises: 450 JOHNSON AVENUE BROOKLYN **BIN: 3070612** **Block: 2992** **Lot: 21**

Issue Date:	03/01/2013	**Violation Category:**	V* - DOB VIOLATION - DISMISSED
Violation Type:	LBLVIO - LOW PRESSURE BOILER		
Violation Number:	08621	**Device No.:**	00112914 - 01-RESIDENTIAL
ECB No.:			
Infraction Codes:			
Description:	VIOLATION ISSUED FOR FAILURE TO FILE ANNUAL BOILER 2011 INSPECTION REPORT		

Click here to view the Civil Penalty Chart.

Disposition:
Code: D - DISMISSED **Date:** 05/22/2013
Inspector:
Comments: RASCIA DISMISSED FULL PENALTY PAID $1000 INV#61259475 CK#9830509822

If you have any questions please review these Frequently Asked Questions, the Glossary, or call the 311 Citizen Service Center by dialing 311 or (212) NEW YORK outside of New York City.

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NYC Department of Buildings

DOB Violations

Premises: 450 JOHNSON AVENUE BROOKLYN **BIN: 3070612** **Block: 2992** **Lot: 21**

NUMBER	TYPE	FILE DATE
V* 3770MOLLOY-091840	DOB VIOLATION - CLOSED	00/00/0000
CLOSURE DATE: 09/28/2011		
V* 3997/450SCHULTZ5--093070	DOB VIOLATION - CLOSED	00/00/0000
CLOSURE DATE: 09/28/2011		
V* 301/456-72CONNARD-122665	DOB VIOLATION - CLOSED	00/00/1945
CLOSURE DATE: 09/28/2011		
V* 414/456-74CONNARD-020265	DOB VIOLATION - CLOSED	00/00/1945
CLOSURE DATE: 09/28/2011		
V 021304LL629121071	DOB VIOLATION - ACTIVE	02/13/2004
V 010606LL629117205	DOB VIOLATION - ACTIVE	01/06/2006
V 011907LL629117605	DOB VIOLATION - ACTIVE	01/19/2007
V* 010308LL629117360	DOB VIOLATION - DISMISSED	01/03/2008
V* 010109LL629117226	DOB VIOLATION - DISMISSED	01/01/2009
V* 030113LBLVIO08621	DOB VIOLATION - DISMISSED	03/01/2013

If you have any questions please review these Frequently Asked Questions, the Glossary, or call the 311 Citizen Service Center by dialing 311 or (212) NEW YORK outside of New York City.

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NYC Department of Buildings

ECB Violation Details

Premises: 450 JOHNSON AVENUE BROOKLYN **Filed At: 450 JOHNSON AVENUE , BROOKLYN , NY 11237**

BIN: 3070612 Block: 2992 Lot: 21 **Community Board: 301**

ECB Violation Summary

VIOLATION RESOLVED

ECB Violation Number: 32044897R

Severity: NON-HAZARDOUS **Certification Status:** CURE ACCEPTED

Penalty Balance Due: $0.00 **Hearing Status:** CURED/IN-VIO

Respondent Information

Name: HARPER ROBERT C

Mailing Address: 450 JOHNSON AVENUE , BKLYN , NY 11237

Violation Details

Violation Date: 08/10/2004 **Violation Type:** BOILER

Served Date: 08/10/2004 **Inspection Unit:** BOILER DIVISION

Device Type: BOILER

Device Number: 112914

Infraction Codes	Section of Law	Standard Description
B4A	27-127	FAILURE TO MAINTAIN BOILER (A)

Specific Violation Condition(s) and Remedy:

B4A 50A 50A HOLES ON THE BOILER ROOM CEILING NEED TO BE SEALED.

Issuing Inspector ID: 1989 **DOB Violation Number:** 081004B112914

Issued as Aggravated Level: NO

Dept. of Buildings Compliance History and Events

Certification Status: CURE ACCEPTED **Compliance On:** 10/07/2004

A Certificate of Correction must be submitted to the Administrative Enforcement Unit (AEU) for all violations. A violation that is not dismissed by ECB will continue to remain ACTIVE or "open" on DOB records until acceptable proof is submitted to the AEU, even if you have paid the penalty imposed by ECB.

ECB Hearing Information

Scheduled Hearing Date/Time: 09/27/2004 10:30 **Hearing Status:** CURED/IN-VIO

ECB Penalty Information

Penalty Imposed: $0.00

Adjustments: $0.00 **Amount Paid:** $0.00

Penalty Balance Due: $0.00

If you have any questions please review these Frequently Asked Questions, the Glossary, or call the 311 Citizen Service Center by dialing 311 or (212) NEW YORK outside of New York City.

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NYC Department of Buildings

ECB Query By Location

Premises: 450 JOHNSON AVENUE BROOKLYN **BIN: 3070612 Block: 2992 Lot: 21 CB: 301**

Dept. of Buildings Violations & Compliance	
Total Issued = 1	**Open (Non-Compliance) =** 0

ECB Hearings	
Completed / Defaulted = 1	**Pending =** 0

ECB Number	Dept. of Buildings Violation Status	Respondent	ECB Hearing Status	Viol Date	Infraction Codes	ECB Penalty Due
32044897R	RESOLVED - CURE ACCEPTED	HARPER ROBERT C	CURED/IN-VIO	08/10/2004	B4A	$0.00
	Severity: NON-HAZARDOUS	**Inspect Unit:** BOILER DIVISION		**Viol Type:** BOILER		

Compliance Status (Open/Resolved) relates to whether a violation has been corrected/uncorrected. Dismissed violations do not require filing a Certificate of Correction.

ECB Hearing Status and the **ECB Penalty Due** are separate from **Compliance Status** (i.e. a penalty is still due in many cases even when the violating condition has been fixed).

Severity Class	
Class 1 - Immediately Hazardous	HAZ - Hazardous - 1968 Building Code
Class 2 - Major	NON-HAZ - Non-hazardous - 1968 Building Code
Class 3 - Lesser	

Violation Status Descriptions
OPEN - No Compliance Recorded
OPEN - Certificate Pending (Certificate of Correction submitted and under review)
OPEN - Certificate Disapproved (Certificate of Correction disapproved/not in compliance)
RESOLVED - N/A-Dismissed (at ECB - no Certificate of Correction required)
RESOLVED - Certificate Accepted (Certification of Correction Accepted/in compliance)
RESOLVED - Cure Accepted (early correction accepted - in violation/no penalty or hearing)
RESOLVED - Compliance Insp/Doc (condition verified by Inspector or by Dept. documentation)

ECB Hearing Status
CURED/IN-VIO - In Violation/no hearing required
STIPULATION/IN-VIO - No hearing required/in violation
IN VIOLATION - Hearing decision completed
DISMISSED - Hearing decision completed
DEFAULT - Respondent failed to appear at hearing
PUBLICLY-OWNED - No hearing required
PENDING - Awaiting ECB hearing or decision
ADMIT/IN-VIO - In Violation/no hearing required
WRITTEN OFF - Imposed penalty legally uncollectable

If you have any questions please review these Frequently Asked Questions, the Glossary, or call the 311 Citizen Service Center by dialing 311 or (212) NEW YORK outside of New York City.

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NYC Department of Buildings

Property Profile Overview

450 JOHNSON AVENUE **BROOKLYN 11237** **BIN# 3070612**

INGRAHAM STREET	83 - 89	**Health Area**	: 900	**Tax Block**	: 2992
JOHNSON AVENUE	450 - 450	**Census Tract**	: 453	**Tax Lot**	: 21
		Community Board	: 301	**Condo**	: NO
		Buildings on Lot	: 1	**Vacant**	: NO

View DCP Addresses... Browse Block

View Zoning Documents | View Challenge Results | Pre - BIS PA | View Certificates of Occupancy

Cross Street(s):	KNICKERBOCKER AVENUE, PORTER AVENUE		
DOB Special Place Name:			
DOB Building Remarks:			
Landmark Status:		**Special Status:**	N/A
Local Law:	NO	**Loft Law:**	NO
SRO Restricted:	NO	**TA Restricted:**	NO
UB Restricted:	NO		
Environmental Restrictions:	N/A	**Grandfathered Sign:**	NO
Legal Adult Use:	NO	**City Owned:**	NO
Additional BINs for Building:	3070613		
Additional Designation(s):	IBZ - INDUSTRIAL BUSINESS ZONE		

Special District: UNKNOWN

This property is not located in an area that may be affected by Tidal Wetlands, Freshwater Wetlands, Coastal Erosion Hazard Area, or Special Flood Hazard Area. Click here for more information

Department of Finance Building Classification: F4-FACTORY/INDSTRIAL

Please Note: The Department of Finance's building classification information shows a building's tax status, which may not be the same as the legal use of the structure. To determine the legal use of a structure, research the records of the Department of Buildings.

	Total	Open
Complaints	0	0
Violations-DOB	10	3
Violations-ECB (DOB)	1	0
Jobs/Filings	3	
ARA / LAA Jobs	0	
Total Jobs	3	
Actions	38	

OR Enter Action Type:

OR Select from List: Select...

AND Show Actions

- Elevator Records
- Electrical Applications
- Permits In-Process / Issued
- Illuminated Signs Annual Permits
- Plumbing Inspections
- Open Plumbing Jobs / Work Types
- Facades
- Marquee Annual Permits
- Boiler Records
- DEP Boiler Information
- Crane Information
- After Hours Variance Permits

If you have any questions please review these Frequently Asked Questions, the Glossary, or call the 311 Citizen Service Center by dialing 311 or (212) NEW YORK outside of New York City.

DUPLICATE

No. 46299

OFFICE OF THE PRESIDENT OF THE BOROUGH OF BROOKLYN

BUREAU OF BUILDINGS

CERTIFICATE OF OCCUPANCY

(ISSUED PURSUANT TO ARTICLE 1, SECTION 5, BUILDING CODE)

BROOKLYN, N. Y. Sept 1 1927

OWNER Kings Gate Co Inc

ARCHITECT Emery Roth & Sons Inc

This is to certify that the NEW BUILDING

Located at 601 E. 19th St. & 1901-1911 Ave L

has been COMPLETED substantially according to the approved plans and specifications and requirements of the BUILDING CODE, and PERMISSION is hereby granted for the OCCUPANCY of said building for the following purposes:

This certificate supersedes all previously issued certificates.

STORY	LIVE LOADS LBS. PER SQ. FT.	PERSONS ACCOMMODATED MALE	FEMALE	TOTAL	USE
Cellar					
Basement					
First Story					Public Garage
Second "					
Third "					
Fourth "					
Fifth "					
Sixth "					
Seventh "					
Eighth "					
Ninth "					
Tenth to					
th					

Number of Buildings One (1)

Permit No. 395

Work Completed Feby

Albert H. Kleinert

Per M. Fallon

BA-2085-28 CK

55-10M-21442 114

DEPARTMENT OF HOUSING AND BUILDINGS

BOROUGH OF BROOKLYN, CITY OF NEW YORK

No. 104798

Date March 18, 1942

CERTIFICATE OF OCCUPANCY

(Standard form adopted by the Board of Standards and Appeals and issued pursuant to Section 646 of the New York Charter, and Sections C26-181.0 to C26-187.0 inclusive Administrative Code 21.3.1. to 21.3.7. Building Code.)

This certificate supersedes C. O. No.

To the owner or owners of the building or premises:

THIS CERTIFIES that the [illegible] building-premises located at

88/92 Ingraham St., north side, 300' east of Porter Ave.
450/56 Johnson Ave., south side, 300' west of Porter Ave.

Block 2992 Lot 21

conforms substantially to the approved plans and specifications, and to the requirements of the building code and all other laws and ordinances, and of the rules and regulations of the Board of Standards and Appeals, applicable to a building of its class and kind at the time the permit was issued; and

CERTIFIES FURTHER that, any provisions of Section 646F of the New York Charter have been complied with as certified by a report of the Fire Commissioner to the Borough Superintendent.

Alteration No.— 444-1284/40 Construction classification— Brick

Occupancy classification— Factory Height 1 stories, 15 feet.

Date of completion— Cons't. 3/4/42 Fl. 2/4/42 Located in Unrestricted Use District.

Area Height Zone at time of issuance of permit

This certificate is issued subject to the limitations hereinafter specified and to the following resolutions of the Board of Standards and Appeals: (Calendar numbers to be inserted here)

PERMISSIBLE USE AND OCCUPANCY

STORY	LIVE LOADS Lbs. per Sq. Ft.	PERSONS ACCOMMODATED MALE	FEMALE	TOTAL	USE
Cellar	-	-	-	-	Boiler Room
First	-	20	10	30	Factory
		TOTAL			Factory

[signature]
Borough Superintendent.

(Page 1)

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NYC Department of Buildings

Actions

Premises: 79 INGRAHAM STREET BROOKLYN **BIN: 3070616 Block: 2992 Lot: 55**

NUMBER		TYPE	FILE DATE
A 16115-36 971-79)		ALTERATION	10/13/1936
A 123-37 (71-79)		ALTERATION	01/05/1937
A 129-37		ALTERATION	01/21/1937
ALT 1868-29		ALTERATION	02/23/1929
ALT 1601-29 -(71-79)		ALTERATION	00/00/1929
ALT 3073-37 971-79)		ALTERATION	00/00/1937
ALT 419-83 (75)		ALTERATION	00/00/1983
CERT 82338-37NB11663 (71-79)	(PDF)	CERTIFICATE OF OCCUPANCY	00/00/1937
CERT 82916-37NB 9711-36(71/79	(PDF)	CERTIFICATE OF OCCUPANCY	00/00/1937
NB 13306-36 (71-79)		NEW BUILDING	00/00/1936
NB 9711-36 (71-79)		NEW BUILDING	00/00/1936
NB 16116-36(71-79)		NEW BUILDING	10/13/1936

If you have any questions please review these Frequently Asked Questions, the Glossary, or call the 311 Citizen Service Center by dialing 311 or (212) NEW YORK outside of New York City.

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NYC Department of Buildings

Address Information From Department of City Planning

Premises: 79 INGRAHAM STREET BROOKLYN **BIN: 3070616 Block: 2992 Lot: 55**

LOW NUMBER	HIGH NUMBER	STREET NAME	STCDE	BIN
79	81	INGRAHAM STREET	52030	3070616

If you have any questions please review these Frequently Asked Questions, the Glossary, or call the 311 Citizen Service Center by dialing 311 or (212) NEW YORK outside of New York City.

311 (https://www1.nyc.gov/311/index.page) | Buildings | Search all NYC.gov websites
(https://www1.nyc.gov/home/search/index.page)

Back Home

79 INGRAHAM STREET | BROOKLYN 11237 | BIN# 3070616

Property Profile

Alternate Addresses:
INGRAHAM STREET
79 - 81

Cross Street(s)
KNICKERBOCKER AVENUE, PORTER AVENUE

DOB Special Place Name

Tax Block
2992

Tax Lot
55

Community Board
301

Condo
NO

Buildings on Lot
1

Vacant
NO

Health Area
900

Census Tract
453

DOB Building Remarks

Landmark Status

Special Status
N/A

Local Law
NO

Loft Law
NO

SRO Restricted
NO

TA Restricted
NO

UB Restricted
NO

Environmental Restrictions
N/A

Grandfathered Sign
NO

Legal Adult Use
NO

City Owned
NO

Additional BINs for Building
NONE

Special District

This property is located in an area that may be affected by the following:

Tidal Wetlands Map Check:	No
Freshwater Wetlands Map Check:	No
Coastal Erosion Hazard Area Map Check:	No
Special Flood Hazard Area Check:	No

Department of Finance Building Classification: G7-GARAGE/GAS STAT'N

Please Note: The Department of Finance's building classification information shows a building's tax status, which may not be the same as the legal use of the structure. To determine the legal use of a structure, research the records of the Department of Buildings.

Filings

BUILD: Job Filings

()

SAFETY: Compliance Filings

()

← Back

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NYC Department of Buildings

Property Profile Overview

79 INGRAHAM STREET **BROOKLYN 11237** **BIN# 3070616**

INGRAHAM STREET 79 - 81

Health Area	: 900	**Tax Block**	: 2992
Census Tract	: 453	**Tax Lot**	: 55
Community Board	: 301	**Condo**	: NO
Buildings on Lot	: 1	**Vacant**	: NO

View DCP Addresses... Browse Block

View Zoning Documents | View Challenge Results | Pre - BIS PA | View Certificates of Occupancy

Cross Street(s):	KNICKERBOCKER AVENUE, PORTER AVENUE		
DOB Special Place Name:			
DOB Building Remarks:			
Landmark Status:		**Special Status:**	N/A
Local Law:	NO	**Loft Law:**	NO
SRO Restricted:	NO	**TA Restricted:**	NO
UB Restricted:	NO		
Environmental Restrictions:	N/A	**Grandfathered Sign:**	NO
Legal Adult Use:	NO	**City Owned:**	NO
Additional BINs for Building:	NONE		
Additional Designation(s):	IBZ - INDUSTRIAL BUSINESS ZONE		

Special District: UNKNOWN

This property is not located in an area that may be affected by Tidal Wetlands, Freshwater Wetlands, Coastal Erosion Hazard Area, or Special Flood Hazard Area. Click here for more information

Department of Finance Building Classification: G7-GARAGE/GAS STAT'N

Please Note: The Department of Finance's building classification information shows a building's tax status, which may not be the same as the legal use of the structure. To determine the legal use of a structure, research the records of the Department of Buildings.

	Total	Open
Complaints	0	0
Violations-DOB	0	0
Violations-ECB (DOB)	0	0
Jobs/Filings	0	
ARA / LAA Jobs	0	
Total Jobs	0	
Actions	12	

OR Enter Action Type:

OR Select from List: Select...

AND Show Actions

Elevator Records
Electrical Applications
Permits In-Process / Issued
Illuminated Signs Annual Permits
Plumbing Inspections
Open Plumbing Jobs / Work Types
Facades
Marquee Annual Permits
Boiler Records
DEP Boiler Information
Crane Information
After Hours Variance Permits

If you have any questions please review these Frequently Asked Questions, the Glossary, or call the 311 Citizen Service Center by dialing 311 or (212) NEW YORK outside of New York City.

BA-5M-34-BA

DUPLICATE

CITY OF NEW YORK

No. 82338

OFFICE OF THE PRESIDENT OF THE BOROUGH OF BROOKLYN

DEPARTMENT OF BUILDINGS

DATE May 7, 1937

CERTIFICATE OF OCCUPANCY

(Standard form adopted by the Board of Standards and Appeals July 22, 1932, and issued pursuant to Section 471-a, Greater New York Charter, and Chapter 5, Building Code, Code of Ordinances, City of New York)

This certificate supersedes all previously issued certificates.

To the owner or owners of the building or premises:

THIS CERTIFIES that the NEW ~~ALTERED~~ —BUILDING—PREMISES

Located at 71/79 Ingram Street N.S. 142'1" E. Eldert

Block 2552 Lot 15, conforms substantially to the approved plans and specifications, and to the requirements of the building code and all other laws and ordinances, and of the rules and regulations of the Board of Standards and Appeals, applicable to a building of its class and kind at the time the permit was issued; and CERTIFIES FURTHER that, any provisions of law relating to standpipe and sprinkler equipment have been complied with as certified by a report of the Fire Commissioner to the Commissioner of Buildings.

THIS CERTIFICATE IS ISSUED SUBJECT TO THE LIMITATIONS HEREINAFTER SPECIFIED AND TO THE FOLLOWING RESOLUTIONS OF THE BOARD OF STANDARDS AND APPEALS:

(Calendar numbers to be inserted here)

PERMISSIBLE USE AND OCCUPANCY

STORY	LIVE LOADS LBS. PER SQ. FT.	PERSONS ACCOMMODATED MALE	PERSONS ACCOMMODATED FEMALE	PERSONS ACCOMMODATED TOTAL	USE
First		3	2	5	Office
Third					
Fourth					
Fifth					
Sixth					

Permit No. 1463 Type of Construction

Permit Issued 5/5/37

Certificate issued 5/7/37

10A 2M3-34-BA

DUPLICATE

CITY OF NEW YORK

No. 82916

OFFICE OF THE PRESIDENT OF THE BOROUGH OF BROOKLYN

DEPARTMENT OF BUILDINGS

DATE June 17, 1937

CERTIFICATE OF OCCUPANCY

(Standard form adopted by the Board of Standards and Appeals July 22, 1937, and issued pursuant to Section 411-a, Greater New York Charter, and Chapter 5, Building Code, Code of Ordinances, City of New York)

This certificate supersedes all previously issued certificates.

To the owner or owners of the building or premises:

THIS CERTIFIES that the NEW ~~ALTERED~~ —BUILDING—PREMISES

Located at 7/19 Longmore St. 80.1x2[illegible] East [illegible] of Brinkerhoff Ave.

Block 2992 Lot 15 conforms substantially to the approved plans and specifications, and to the requirements of the building code and all other laws and ordinances, and of the rules and regulations of the Board of Standards and Appeals, applicable to a building of its class and kind at the time the permit was issued; and CERTIFIES FURTHER that, any provisions of law relating to standpipe and sprinkler equipment have been complied with as certified by a report of the Fire Commissioner to the Commissioner of Buildings.

THIS CERTIFICATE IS ISSUED SUBJECT TO THE LIMITATIONS HEREINAFTER SPECIFIED AND TO THE FOLLOWING RESOLUTIONS OF THE BOARD OF STANDARDS AND APPEALS:
(Calendar numbers to be inserted here)

PERMISSIBLE USE AND OCCUPANCY

STORY	LIVE LOADS LBS. PER SQ. FT.	PERSONS ACCOMMODATED MALE	FEMALE	TOTAL	USE
Cellar					None
Basement					STONE CUTTING SHOP
First					IN CONNECTION WITH
Second					STONE YARD.
Third					
Fourth					
Fifth					
Sixth					
	7711 30				

Permit No. [illegible] Type of Construction Brick

Height 1 stories — feet. Date of completion, construction 3/11/37

plumbing 3/11/37

Located in Unrestricted zone at time of issuance of permit.

(OVER)

ATTACHMENT E3 – FEMA FLOOD MAP

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations (BFEs) shown on this map apply only landward of 0.0' National Geodetic Vertical Datum of 1929 (NGVD 29). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations tables in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations tables should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The **projection** used in the preparation of this map was New York State Plane FIPSZONE 3104. The **horizontal datum** was NAD 83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the National Geodetic Vertical Datum of 1929. These flood elevations must be compared to structure and ground elevations referenced to the same **vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3182
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit its website at http://www.ngs.noaa.gov.

Base map information shown on this FIRM was provided in digital format by the Department of Information Technology and Telecommunication, City of New York. This information was derived from digital orthophotos produced at a scale of 1:1,200 with 2-foot pixel resolution from photography dated 2004.

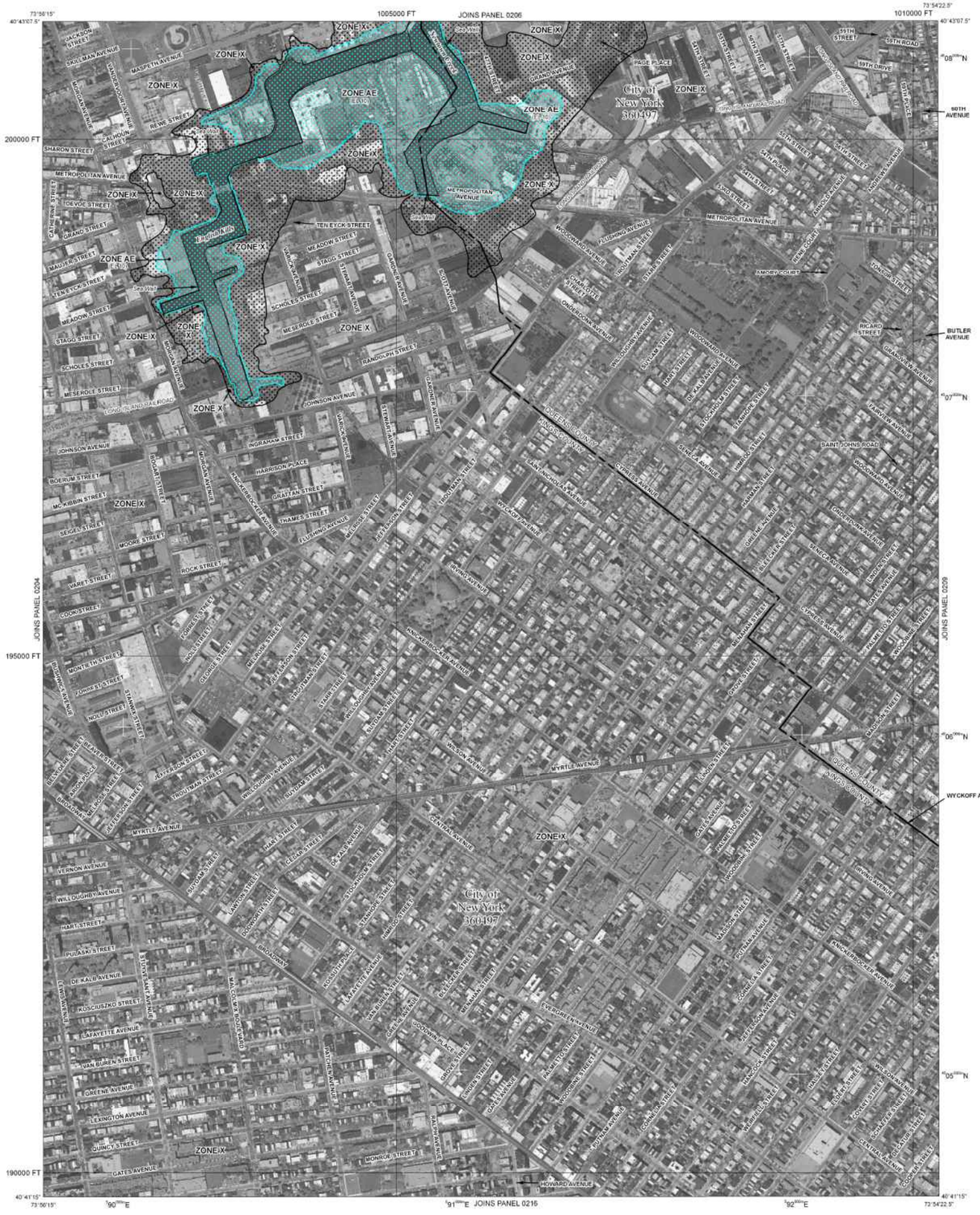
Based on updated topographic information, this map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study Report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map showing the layout of map panels for this jurisdiction.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and its website at http://msc.fema.gov.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov.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40°43'07.5"
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40°41'15"
73°56'15"
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91
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08
07
06
05
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ZONE AE
(EL 10)
ZONE D
City of New York 360497
JACKSON STREET
SKILLMAN AVENUE
MASPETH AVENUE
BOGART STREET
CALHOUN STREET
REWE STREET
SHARON STREET
METROPOLITAN AVENUE
IDEVOE STREET
GRAND STREET
MAUJER STREET
STEWART STREET
MEADOW STREET
STAGG STREET
SCHOLES STREET
MESEROLE STREET
LONG ISLAND EXPRESSWAY
JOHNSON AVENUE
INGRAHAM STREET
HARRISON PLACE
GRATTAN STREET
THAMES STREET
FLUSHING AVENUE
MORGAN AVENUE
MACKENZIE STREET
BOERUM STREET
MCKIBBIN STREET
SEIGEL STREET
MOORE STREET
ROCK STREET
VARET STREET
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TROUTMAN STREET
SUTTER AVENUE
MYRTLE AVENUE
VERNON AVENUE
WILLOUGHBY AVENUE
HART STREET
PULASKI STREET
DE KALB AVENUE
KOSCIUSZKO STREET
LAFAYETTE AVENUE
VAN BUREN STREET
GREENE AVENUE
LEXINGTON AVENUE
QUINCY STREET
GATES AVENUE
MONROE STREET
HOWARD AVENUE
METROPOLITAN AVENUE
FLUSHING AVENUE
MORGAN AVENUE
MACKENZIE STREET
BOERUM STREET
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SUTTER AVENUE
MYRTLE AVENUE
VERNON AVENUE
WILLOUGHBY AVENUE
HART STREET
PULASKI STREET
DE KALB AVENUE
KOSCIUSZKO STREET
LAFAYETTE AVENUE
VAN BUREN STREET
GREENE AVENUE
LEXINGTON AVENUE
QUINCY STREET
GATES AVENUE
MONROE STREET
HOWARD AVENUE
BROADWAY
PAGE PLACE
GRAND AVENUE
MAUJER STREET
STEWART STREET
MEADOW STREET
STAGG STREET
SCHOLES STREET
MESEROLE STREET
RANDOLPH STREET
JOHNSON AVENUE
GARDNER AVENUE
GRATTAN STREET
THAMES STREET

ATTACHMENT E4 – SITE LAND RECORDS

52 25

Standard N Y B A U Form 8002 - 12/79. Bargain and Sale Deed, with Covenant against Grantor's Acts. Individual or Corporation (single sheet)

CONSULT YOUR LAWYER BEFORE SIGNING THIS INSTRUMENT—THIS INSTRUMENT SHOULD BE USED BY LAWYERS ONLY.

REEL 1211 PAGE 1

THIS INDENTURE, made the 19 day of December, nineteen hundred and Eighty

BETWEEN

LOUIS PURO, residing at 650 Park Avenue,
New York, New York 10022

party of the first part, and

GERALD J. LEVY, c/o Brunel, Cochrane & Levy, Inc.
970 Grand Street, Brooklyn, New York 11211

party of the second part,

WITNESSETH, that the party of the first part, in consideration of Ten Dollars and other valuable consideration paid by the party of the second part, does hereby grant and release unto the party of the second part, the heirs or successors and assigns of the party of the second part forever,

ALL that certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Borough of Brooklyn, County of Kings, City and State of New York, bounded and described as follows, to wit:

BEGINNING at a point on the southerly side of Johnson Avenue distant 300 feet westerly from the corner formed by the intersection of the southerly side of Johnson Avenue with the westerly side of Porter Avenue; thence westerly along the southerly side of Johnson Avenue 200 feet; thence southerly parallel with Porter Avenue 100 feet; thence easterly parallel with Johnson Avenue 100 feet; thence southerly parallel with Porter Avenue 100 feet to the northerly side of Ingraham Street; thence easterly along the northerly side of Ingraham Street 100 feet; thence northerly parallel with Porter Avenue 200 feet to the point or place of BEGINNING.

TAX MAP DESIGNATION

Dist

Sec 10

Blk 2992

Lots 17 & 21

TOGETHER with all right, title and interest, if any, of the party of the first part in and to any streets and roads abutting the above described premises to the center lines thereof; TOGETHER with the appurtenances and all the estate and rights of the party of the first part in and to said premises; TO HAVE AND TO HOLD the premises herein granted unto the party of the second part, the heirs or successors and assigns of the party of the second part forever. THE party of the first part herewith releases any option he may have under agreements dated September 30, 1963 and March 1, 1965, or otherwise, to purchase the Conveyed Premises.

AND the party of the first part covenants that the party of the first part has not done or suffered anything whereby the said premises have been encumbered in any way whatever, except as aforesaid.

AND the party of the first part, in compliance with Section 13 of the Lien Law, covenants that the party of the first part will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.

The word "party" shall be construed as if it read "parties" whenever the sense of this indenture so requires.

IN WITNESS WHEREOF, the party of the first part has duly executed this deed the day and year first above written.

IN PRESENCE OF:

MARCELLE LATTAN
NOTARY PUBLIC, STATE OF NEW YORK
No. 31-4[illegible]
Qualified in [illegible] County
Commission Expires March 30, 1982

LOUIS PURO

STATE OF NEW YORK, COUNTY OF New York ss:

On the 19th day of December 1980, before me personally came Louis Puro

to me known to be the individual described in and who executed the foregoing instrument, and acknowledged that he executed the same.

MARCELLE CAITAN
NOTARY PUBLIC, STATE OF NEW YORK
No. 31-[illegible]
Qualified in New York County
Commission Expires March 30, 1982

STATE OF NEW YORK, COUNTY OF ss:

On the day of 19, before me personally came

REEL 1211 PAGE 2

to me known to be the individual described in and who executed the foregoing instrument, and acknowledged that executed the same.

STATE OF NEW YORK, COUNTY OF ss:

On the day of 19, before me personally came
to me known, who, being by me duly sworn, did depose and say that he resides at No.

that he is the
of
, the corporation described in and which executed the foregoing instrument, that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal, that it was so affixed by order of the board of directors of said corporation, and that he signed h name thereto by like order.

STATE OF NEW YORK, COUNTY OF ss:

On the day of 19, before me personally came
the subscribing witness to the foregoing instrument, with whom I am personally acquainted, who, being by me duly sworn, did depose and say that he resides at No.

that he knows
to be the individual described in and who executed the foregoing instrument; that he, said subscribing witness, was present and saw execute the same; and that he, said witness, at the same time subscribed h name as witness thereto.

Bargain and Sale Deed

WITH COVENANT AGAINST GRANTOR'S ACTS

TITLE NO. K656323

LOUIS PURO

TO

GERALD J. LEVY

SECTION 10
BLOCK 2992
LOT 17 and 21
COUNTY OR TOWN Kings
TAX BILLING ADDRESS 450 Johnson Ave.

Recorded At the Request of The Title Guarantee Company

RETURN BY MAIL TO

STANLEY ALTER PC
9 East 40th St
N.Y. N.Y. Zip No. 10016

STANDARD FORM OF NEW YORK BOARD OF TITLE UNDERWRITERS
Distributed by
TITLE GUARANTEE-NEW YORK
A TICOR COMPANY

1481

RESERVE THIS SPACE FOR USE OF RECORDING OFFICE

REC. FEE A12 25
SST # 52
RPT # 698

TAX PAID

5516

Witness my hand and official seal

CITY REGISTER

Standard N Y B T U Form 8001 • 2/79 20M - Bargain and Sale Deed with Covenant against Grantor's Acts - Individual or Corporation (single sheet)

CONSULT YOUR LAWYER BEFORE SIGNING THIS INSTRUMENT—THIS INSTRUMENT SHOULD BE USED BY LAWYERS ONLY.

$2.25

REEL 1210 PAGE 1999

THIS INDENTURE, made the 19 day of December, nineteen hundred and Eighty

BETWEEN

JACOB PURO, residing at 1100 Shadow Hill Way,
Beverly Hills, California 90210

party of the first part, and

GERALD J. LEVY, c/o Brunel, Cochrane & Levy, Inc.
970 Grand Street, Brooklyn, New York 11211

party of the second part,

WITNESSETH, that the party of the first part, in consideration of Ten Dollars and other valuable consideration paid by the party of the second part, does hereby grant and release unto the party of the second part, the heirs or successors and assigns of the party of the second part forever,

ALL that certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Borough of Brooklyn, County of Kings, City and State of New York, bounded and described as follows, to wit:

2992
17
21

BEGINNING at a point on the southerly side of Johnson Avenue distant 300 feet westerly from the corner formed by the intersection of the southerly side of Johnson Avenue with the westerly side of Porter Avenue; thence westerly along the southerly side of Johnson Avenue 200 feet; thence southerly parallel with Porter Avenue 100 feet; thence easterly parallel with Johnson Avenue 100 feet; thence southerly parallel with Porter Avenue 100 feet to the northerly side of Ingraham Street; thence easterly along the northerly side of Ingraham Street 100 feet; thence northerly parallel with Porter Avenue 200 feet to the point or place of BEGINNING.

TAX MAP DESIGNATION

Dist

Sec 10

Blk 2992

Lot(s) 17 & 21

TOGETHER with all right, title and interest, if any, of the party of the first part in and to any streets and roads abutting the above described premises to the center lines thereof; TOGETHER with the appurtenances and all the estate and rights of the party of the first part in and to said premises; TO HAVE AND TO HOLD the premises herein granted unto the party of the second part, the heirs or successors and assigns of the party of the second part forever. The party of the first part herewith releases any option he may have under agreements dated September 30, 1963 and March 1, 1965, or otherwise, to purchase the Conveyed Premises.

AND the party of the first part covenants that the party of the first part has not done or suffered anything whereby the said premises have been encumbered in any way whatever, except as aforesaid.

AND the party of the first part, in compliance with Section 13 of the Lien Law, covenants that the party of the first part will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.

The word "party" shall be construed as if it read "parties" whenever the sense of this indenture so requires.

IN WITNESS WHEREOF, the party of the first part has duly executed this deed the day and year first above written.

IN PRESENCE OF: Maxine L. Kegher

OFFICIAL SEAL
MAXINE L. KEGHER
NOTARY PUBLIC - CALIFORNIA
LOS ANGELES COUNTY
My comm. expires MAY 16, 1981

Jacob Puro
JACOB PURO

STATE OF CALIFORNIA COUNTY OF LOS ANGELES ss:

On the 19th day of December 1980, before me personally came Jacob Puro

to me known to be the individual described in and who executed the foregoing instrument, and acknowledged that he executed the same.

Maxine L Kegher

OFFICIAL SEAL
MAXINE L. KEGHER
NOTARY PUBLIC - CALIFORNIA
LOS ANGELES COUNTY
My comm. expires MAY 16, 1981

STATE OF NEW YORK, COUNTY OF ss:

On the day of 19, before me personally came

REEL 1210 PAGE 2000

to me known to be the individual described in and who executed the foregoing instrument, and acknowledged that executed the same.

STATE OF NEW YORK, COUNTY OF ss:

On the day of 19, before me personally came
to me known, who, being by me duly sworn, did depose and say that he resides at No.

that he is the
of
, the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the board of directors of said corporation, and that he signed h name thereto by like order.

STATE OF NEW YORK, COUNTY OF ss:

On the day of 19, before me personally came
the subscribing witness to the foregoing instrument, with whom I am personally acquainted, who, being by me duly sworn, did depose and say that he resides at No.

that he knows
to be the individual described in and who executed the foregoing instrument; that he, said subscribing witness, was present and saw execute the same; and that he, said witness, at the same time subscribed h name as witness thereto.

Bargain and Sale Deed
WITH COVENANT AGAINST GRANTOR'S ACTS

TITLE No. K656323

JACOB PURO

TO

GERALD J. LEVY

SECTION 10
BLOCK 2992
LOT 17 and 21
COUNTY OR TOWN Kings
TAX BILLING ADDRESS 450 Johnson Avenue

Recorded At Request of The Title Guarantee Company
RETURN BY MAIL TO:

STANLEY ALTER, PC
9 East 40th St
NY NY Zip No. 10016

STANDARD FORM OF NEW YORK BOARD OF TITLE UNDERWRITERS
Distributed by
TITLE GUARANTEE-NEW YORK
A TICOR COMPANY

1482

RECORDED AT THE REQUEST OF
TITLE GUARANTEE & TRUST CO.

RESERVE THIS SPACE FOR USE OF RECORDING OFFICE

1415 AM 10:39

REC. FEE A 12
SST # 52.25
RPT # 697

TAX PAID

RECEIVED
53.25
REAL ESTATE
JAN 5 1981
BROOKLYN TAX
KINGS COUNTY

OFFICE OF CITY REGISTER
Kings County
RECORDED
Witness my hand
and official seal

Standard N. Y. B. T. U. Form 8002—12-70—20M—Bargain and Sale Deed, with Covenant against Grantor's Acts—Individual or Corporation (single sheet)

CONSULT YOUR LAWYER BEFORE SIGNING THIS INSTRUMENT—THIS INSTRUMENT SHOULD BE USED BY LAWYERS ONLY.

REEL 1220 PAGE 1066

THIS INDENTURE, made the 22nd day of January, nineteen hundred and eighty-one

BETWEEN

GERALD J. LEVY, c/o Brunel, Cochrane & Levy, Inc.
970 Grand Street
Brooklyn, New York 11211

party of the first part, and

DOOGLE ASSOCIATES, a partnership organized under the laws of the State of New York, doing business at 970 Grand Street, Brooklyn, New York 11211

party of the second part,

WITNESSETH, that the party of the first part, in consideration of Ten Dollars and other valuable consideration paid by the party of the second part, does hereby grant and release unto the party of the second part, the heirs or successors and assigns of the party of the second part forever,

ALL that certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Borough of Brooklyn, County of Kings, City and State of New York, bounded and described as follows, to wit:

BEGINNING at a point on the southerly side of Johnson Avenue, distant 300 feet westerly from the corner formed by the intersection of the southerly side of Johnson Avenue with the westerly side of Porter Avenue; thence westerly along the southerly side of Johnson Avenue 200 feet; thence southerly parallel with Porter Avenue 100 feet; thence easterly parallel with Johnson Avenue 100 feet; thence southerly parallel with Porter Avenue 100 feet to the northerly side of Ingraham Street; thence easterly along the northerly side of Ingraham Street 100 feet; thence northerly parallel with Porter Avenue 200 feet to the point or place of BEGINNING.

TAX MAP DESIGNATION

Dist

Sec 10

Blk 3992

Lots 17 and 21

TOGETHER with all right, title and interest, if any, of the party of the first part in and to any streets and roads abutting the above described premises to the center lines thereof; TOGETHER with the appurtenances and all the estate and rights of the party of the first part in and to said premises; TO HAVE AND TO HOLD the premises herein granted unto the party of the second part, the heirs or successors and assigns of the party of the second part forever.

AND the party of the first part covenants that the party of the first part has not done or suffered anything whereby the said premises have been encumbered in any way whatever, except as aforesaid.
AND the party of the first part, in compliance with Section 13 of the Lien Law, covenants that the party of the first part will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.
The word "party" shall be construed as if it read "parties" whenever the sense of this indenture so requires.

IN WITNESS WHEREOF, the party of the first part has duly executed this deed the day and year first above written.

IN PRESENCE OF:

GERALD J. LEVY

REEL 1220 PAGE 1067

STATE OF NEW YORK, COUNTY OF NEW YORK ss:

On the 22nd day of January 1981, before me personally came GERALD J. LEVY,

to me known to be the individual described in and who executed the foregoing instrument, and acknowledged that he executed the same.

BRUCE N. LIEBERMAN
Notary Public, State of New York
Qualified in Kings County
Commission Expires March 30, 1982

STATE OF NEW YORK, COUNTY OF ss:

On the day of 19, before me personally came

to me known to be the individual described in and who executed the foregoing instrument, and acknowledged that executed the same.

STATE OF NEW YORK, COUNTY OF ss:

On the day of 19, before me personally came

to me known, who, being by me duly sworn, did depose and say that he resides at No.

that he is the of the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the board of directors of said corporation, and that he signed h name thereto by like order.

STATE OF NEW YORK, COUNTY OF ss:

On the day of 19, before me personally came

the subscribing witness to the foregoing instrument, with whom I am personally acquainted, who, being by me duly sworn, did depose and say that he resides at No.

that he knows to be the individual described in and who executed the foregoing instrument; that he, said subscribing witness, was present and saw execute the same; and that he, said witness, at the same time subscribed h name as witness thereto.

Bargain and Sale Deed
WITH COVENANT AGAINST GRANTOR'S ACTS

TITLE NO. K6-6323

LEVY

TO

DAGGO

SECTION 10
BLOCK 2992
LOT 1762 1
COUNTY OR TOWN
TAX BILLING ADDRESS KINGS

STANDARD FORM OF NEW YORK BOARD OF TITLE UNDERWRITERS
Distributed by
TITLE GUARANTEE-NEW YORK
A TICOR COMPANY

Recorded At Request of The Title Guarantee Company

RETURN BY MAIL TO

STANLEY ALTER, PC
9 East 40th St
NY NY Zip No. 10016

RECORDED AT THE REQUEST OF
SECURITY TITLE AND GUARANTY CO.
630 FIFTH AVENUE
NEW YORK, N. Y. 10111

RESERVED FOR USE OF RECORDING OFFICE

RECD FEB 25 AM 10:17

A12

2994

FEB 25 1981

OFFICE OF CITY REGISTER
Kings County
RECORDED
Witness my hand
and official seal

CITY REGISTER

REEL 1227 PAGE 1060

T 270—Standard N.Y.B.T.U. Form 1002A—Executor's Deed, Individual or Corporation (single sheet) DATE CODE JULIUS BLUMBERG, INC., LAW BLANK PUBLISHERS

CONSULT YOUR LAWYER BEFORE SIGNING THIS INSTRUMENT—THIS INSTRUMENT SHOULD BE USED BY LAWYERS ONLY.

No Monetary Consideration Supplemental Deed

THIS INDENTURE, made the 17 day of ~~February~~ March, nineteen hundred and Eighty-One

BETWEEN MICHAEL L. PURO, residing at 5 Surrey Drive, Saddle River, New Jersey 07458,

and trustee
as executor /of
SAM PURO the last will and testament of
, late of

who died on the 25th day of April, nineteen hundred and Seventy

party of the first part, and

GERALD J. LEVY, c/o Brunel, Cochrane & Levy, Inc.
970 Grand Street, Brooklyn, New York 11211

party of the second part,

2992
17, 21

WITNESSETH, that the party of the first part, to whom letters testamentary were issued by the Surrogate's Court, Nassau County, New York on June 10, 1970 and by virtue of the power and authority given in and by said last will and testament, and/or by Article 11 of the Estates, Powers and Trusts Law, and in consideration of Consideration recited in the deed dated December 29, 1980 executed by Irving L. Spanier and Gertrude Puro, now known as Gertrude (Puro) Simon for the said premises, ~~dollars,~~ paid by the party of the second part, does hereby grant and release unto the party of the second part, the distributees or successors and assigns of the party of the second part forever, decedent's interest as tenant-in-common with others, in and to

ALL that certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Borough of Brooklyn, County of Kings, City and State of New York, bounded and described as follows, to wit:

BEGINNING at a point on the southerly side of Johnson Avenue distant 300 feet westerly from the corner formed by the intersection of the southerly side of Johnson Avenue with the westerly side of Porter Avenue; thence westerly along the southerly side of Johnson Avenue 200 feet; thence southerly parallel with Porter Avenue 100 feet; thence easterly parallel with Johnson Avenue 100 feet; thence southerly parallel with Porter Avenue 100 feet to the northerly side of Ingraham Street; thence easterly along the northerly side of Ingraham Street 100 feet; thence northerly parallel with Porter Avenue 200 feet to the point or place of BEGINNING.

TAX MAP
DESIGNATION
Dist.
Sec. 10
Blk.2992
Lot(s): 17 & 21

TOGETHER with all right, title and interest, if any, of the party of the first part in and to any streets and roads abutting the above described premises to the center lines thereof; TOGETHER with the appurtenances, and also all the estate which the said decedent had at the time of decedent's death in said premises, and also the estate therein, which the party of the first part has or has power to convey or dispose of, whether individually, or by virtue of said will or otherwise; TO HAVE AND TO HOLD the premises herein granted unto the party of the second part, the distributees or successors and assigns of the party of the second part forever.

~~AND the party of the first part covenants that the party of the first part has not done or suffered anything whereby the said premises have been incumbered in any way whatever, except as aforesaid.~~
Subject to the trust fund provisions of section thirteen of the Lien Law.
The word "party" shall be construed as if it read "parties" whenever the sense of this indenture so requires.

IN WITNESS WHEREOF, the party of the first part has duly executed this deed the day and year first above written.

IN PRESENCE OF:

Michael L. Puro
MICHAEL L. PURO

REC'D 1227 PAGE 1061

STATE OF NEW YORK, COUNTY OF NEW YORK ss:

On the 17th day of March 19 81, before me personally came

MICHAEL L. PURO

to me known to be the individual described in and who executed the foregoing instrument, and acknowledged that he executed the same.

Notary Public

RUTH ISAACSON
NOTARY PUBLIC, STATE OF NEW YORK
No. 24-1925400
Qualified in Kings County
Commission Expires March 30, 1981

STATE OF NEW YORK, COUNTY OF ss:

On the day of 19 , before me personally came

to me known to be the individual described in and who executed the foregoing instrument, and acknowledged that executed the same.

STATE OF NEW YORK, COUNTY OF ss:

On the day of 19 , before me personally came

to me known, who, being by me duly sworn, did depose and say that he resides at No.

that he is the of , the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the board of directors of said corporation, and that he signed h name thereto by like order.

STATE OF NEW YORK, COUNTY OF ss:

On the day of 19 , before me personally came

the subscribing witness to the foregoing instrument, with whom I am personally acquainted, who, being by me duly sworn, did depose and say that he resides at No.

that he knows to be the individual described in and who executed the foregoing instrument; that he, said subscribing witness, was present and saw execute the same; and that he, said witness, at the same time subscribed h name as witness thereto.

RECORDED AT THE REQUEST OF
SECURITY TITLE AND GUARANTY CO
500 EAST 40th STREET
NEW YORK, N. Y. 10016

Executor's Deed

TITLE NO. K656323

Michael Puro
Exec. L.W.&T. of Sam Puro
TO
Gerald J. Levy

SECTION 10
BLOCK 2992
LOTS 17 & 21
COUNTY OR TOWN Kings
STREET ADDRESS

Record and Return To:

Stanley Alter, Esq., P.C.
9 East 40th Street
New York, N.Y. 10016

RESERVE THIS SPACE FOR USE OF RECORDING OFFICE

REC. FEE
SST #
RPT #

RECORDED
REAL ESTATE
MAR 26 1981
TRANSFER TAX
KINGS COUNTY

OFFICE OF CITY REGISTER
Kings County
RECORDED
Witness my hand
and official seal

CITY REGISTER

Standard N. Y. B. T. U. Form 8002 Bargain and Sale Deed, with Covenant against Grantor's Acts—Individual or Corporation (Single Sheet)

CONSULT YOUR LAWYER BEFORE SIGNING THIS INSTRUMENT—THIS INSTRUMENT SHOULD BE USED BY LAWYERS ONLY.

1232 PAGE 409

THIS INDENTURE, made the 6th day of April, nineteen hundred and eighty-one

BETWEEN

GERALD J. LEVY, c/o Brunel, Cochrane & Levy, Inc.
970 Grand Street
Brooklyn, New York 11211

party of the first part, and

DOOGLE ASSOCIATES, a partnership organized under the laws of the State of New York, doing business at 970 Grand Street, Brooklyn, New York 11211

2992
17, 21

party of the second part,

WITNESSETH, that the party of the first part, in consideration of ten dollars and other valuable consideration paid by the party of the second part, does hereby grant and release unto the party of the second part, the heirs or successors and assigns of the party of the second part forever,

ALL that certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Borough of Brooklyn, County of Kings, City and State of New York, bounded and described as follows, to wit:-

BEGINNING at a point on the southerly side of Johnson Avenue, distant 300 feet westerly from the corner formed by the intersection of the southerly side of Johnson Avenue with the westerly side of Porter Avenue; THENCE westerly along the southerly side of Johnson Avenue 200 feet; THENCE southerly parallel with Porter Avenue 100 feet; THENCE easterly parallel with Johnson Avenue 100 feet; THENCE southerly parallel with Porter Avenue 100 feet to the northerly side of Ingraham Street; THENCE easterly along the northerly side of Ingraham Street 100 feet; THENCE northerly parallel with Porter Avenue 200 feet to the point or place of BEGINNING.

The within Deed is intended to convey to Doogle Associates, such additional interest in the within premises as should remain in Gerald J. Levy as of the date hereof; it being his intention to convey to Doogle Associates the entire title to the within premises, in fee simple.

TOGETHER with all right, title and interest, if any, of the party of the first part in and to any streets and roads abutting the above described premises to the center lines thereof; TOGETHER with the appurtenances and all the estate and rights of the party of the first part in and to said premises; TO HAVE AND TO HOLD the premises herein granted unto the party of the second part, the heirs or successors and assigns of the party of the second part forever.

AND the party of the first part covenants that the party of the first part has not done or suffered anything whereby the said premises have been encumbered in any way whatever, except as aforesaid.
AND the party of the first part, in compliance with Section 13 of the Lien Law, covenants that the party of the first part will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.
The word "party" shall be construed as if it read "parties" whenever the sense of this indenture so requires.

IN WITNESS WHEREOF, the party of the first part has duly executed this deed the day and year first above written.

IN PRESENCE OF:

GERALD J. LEVY

REEL 1232 PAGE 410

STATE OF NEW YORK, COUNTY OF Kings ss:

On the 6 day of April 19 81, before me personally came Gerald J. Levy

to me known to be the individual described in and who executed the foregoing instrument, and acknowledged that he executed the same.

Notary Public

SUSAN SGRIZZI
NOTARY PUBLIC, State of New York
No. 41-4505019
Qualified in Queens County
Commission Expires March 30, 1983

STATE OF NEW YORK, COUNTY OF ss:

On the day of 19 , before me personally came

to me known to be the individual described in and who executed the foregoing instrument, and acknowledged that executed the same.

STATE OF NEW YORK, COUNTY OF ss:

On the day of 19 , before me personally came

to me known, who, being by me duly sworn, did depose and say that he resides at No.

that he is the of , the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the board of directors of said corporation, and that he signed h name thereto by like order.

STATE OF NEW YORK, COUNTY OF ss:

On the day of 19 , before me personally came

the subscribing witness to the foregoing instrument, with whom I am personally acquainted, who, being by me duly sworn, did depose and say that he resides at No.

that he knows to be the individual described in and who executed the foregoing instrument; that he, said subscribing witness, was present and saw execute the same; and that he, said witness, at the same time subscribed h name as witness thereto.

RECORDED AT THE REQUEST OF
SECURITY TITLE AND GUARANTY CO.
300 EAST 42nd STREET
NEW YORK, N. Y. 10016

Bargain and Sale Deed

WITH COVENANT AGAINST GRANTOR'S ACTS

TITLE NO. K-656323

Gerald J. Levy

TO

Doogle Associates

SECTION 10
BLOCK 2992
LOTS 17 & 21
COUNTY ~~MANHATTAN~~ Kings

LOC. VER.

11856

STANDARD FORM OF NEW YORK BOARD OF TITLE UNDERWRITERS
Distributed by
SECURITY TITLE AND GUARANTY COMPANY
CHARTERED 1886 ST IN NEW YORK

RETURN BY MAIL TO:

Stanley S. Alter, Esq.
9 East 40th Street
New York, N. Y. 10016

Zip No.

RESERVE THIS SPACE FOR USE OF RECORDING OFFICE

1981 APR 17 AM 8 48

REC. FEE 5.00
SST
RPT

14418

RECORDED
REAL ESTATE
APR 17 1981
TRANSFER TAX
KINGS
COUNTY

OFFICE OF CITY REGISTER
Kings County
RECORDED
Witness my hand
and official seal

CITY REGISTER

Standard N.Y.B.T.U. Form 8001 • 4-81 10M Bargain and Sale Deed, without Covenant against Grantor's Acts—Individual or Corporation (single sheet)

CONSULT YOUR LAWYER BEFORE SIGNING THIS INSTRUMENT—THIS INSTRUMENT SHOULD BE USED BY LAWYERS ONLY.

THIS INDENTURE, made the 30 day of November, nineteen hundred and Eighty-Eight

BETWEEN

DOOGLE ASSOCIATES, 970 Grand Street, Brooklyn, New York

stamps $1,800

party of the first part, and

ROBERT HARPER, 51 Fifth Avenue, New York, New York

party of the second part,

REEL 2320 PG 2036

WITNESSETH, that the party of the first part, in consideration of ten dollars and other valuable consideration paid by the party of the second part, does hereby grant and release unto the party of the second part, the heirs or successors and assigns of the party of the second part forever,

ALL that certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Borough of Brooklyn, County of Kings, City and State of New York, bounded and described as follows:

BEGINNING, at a point on the southerly side of Johnson Avenue distant 400 feet westerly from the corner formed by the intersection of the southerly side of Johnson Avenue and the westerly side of Porter Avenue;

RUNNING THENCE, westerly along the southerly side of Johnson Avenue 100 feet;

THENCE westerly along the southerly side of Johnson Avenue 100 feet;

THENCE southerly parallel with Porter Avenue 100 feet;

THENCE easterly parallel with Johnson Avenue 100 feet;

THENCE, northerly parallel with Porter Avenue 100 feet to the point or place of BEGINNING

TAX MAP DESIGNATION

Dist.

Sec. 10

Blk. 2992

Lot(s): 17

TOGETHER with all right, title and interest, if any, of the party of the first part in and to any streets and roads abutting the above described premises to the center lines thereof; TOGETHER with the appurtenances and all the estate and rights of the party of the first part in and to said premises; TO HAVE AND TO HOLD the premises herein granted unto the party of the second part, the heirs or successors and assigns of the party of the second part forever.

AND the party of the first part, in compliance with Section 13 of the Lien Law, covenants that the party of the first part will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.

The word "party" shall be construed as if it read "parties" whenever the sense of this indenture so requires.

IN WITNESS WHEREOF, the party of the first part has duly executed this deed the day and year first above written.

IN PRESENCE OF:

DOOGLE ASSOCIATES

By: GERALD LEVY, a Partner of Doogle Associates

STATE OF NEW YORK, COUNTY OF ss:

On the 30 day of November 1988, before me personally came GERALD LEVY

to me known to be the individual described in and who executed the foregoing instrument, and acknowledged that HE executed the same.

STANLEY ALTER
Notary Public, State of New York
No. 31-0053695
Qualified in New York County
Commission Expires April 30, 1989

STATE OF NEW YORK, COUNTY OF ss:

On the day of 19 , before me personally came

to me known to be the individual described in and who executed the foregoing instrument, and acknowledged that executed the same.

REEL 2320 PG 2031

STATE OF NEW YORK, COUNTY OF ss:

On the day of 19 , before me personally came

to me known, who, being by me duly sworn, did depose and say that he resides at No.

that he is the of , the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the board of directors of said corporation, and that he signed h name thereto by like order.

STATE OF NEW YORK, COUNTY OF ss:

On the day of 19 , before me personally came

the subscribing witness to the foregoing instrument, with whom I am personally acquainted, who, being by me duly sworn, did depose and say that he resides at No.

that he knows to be the individual described in and who executed the foregoing instrument; that he, said subscribing witness, was present and saw execute the same; and that he, said witness, at the same time subscribed h name as witness thereto.

FIRST AMERICAN TITLE INSURANCE COMPANY OF NEW YORK
ONE PIERREPONT PLAZA
300 CADMAN PLAZA WEST
BROOKLYN, NY 11201

Bargain and Sale Deed
WITHOUT COVENANT AGAINST GRANTOR'S ACTS

TITLE No. 125 K 1345

DOOGLE ASSOCIATES

TO

ROBERT HARPER

198861

SECTION
BLOCK 2992
LOT 17
COUNTY OR TOWN Kings County
STREET ADDRESS 418 Johnson Avenue
TAX BILLING ADDRESS

Recorded At Request of The Title Guarantee Company

RETURN BY MAIL TO:

LOC. VER. BY ADDRESS

JOHN SOMERS
217 BROADWAY
NEW YORK Zip No. 10007-2909

STANDARD FORM OF NEW YORK BOARD OF TITLE UNDERWRITERS
Distributed by
TITLE GUARANTEE-NEW YORK
A TICOR COMPANY

RECEIVED $ 8017 REAL ESTATE TRANSFER TAX DEC 20 1988 KINGS COUNTY

RESERVE THIS SPACE FOR USE OF RECORDING OFFICE

RECORDED IN KINGS COUNTY
OFFICE OF THE CITY REGISTER
1988 DEC 20 A 11: 52

CITY REGISTER

88-12-21 88-12-21

REC. FEE 11.00
SST # 16290-
RT # 21137
42-

NYC DEPARTMENT OF FINANCE
OFFICE OF THE CITY REGISTER

This page is part of the instrument. The City Register will rely on the information provided by you on this page for purposes of indexing this instrument. The information on this page will control for indexing purposes in the event of any conflict with the rest of the document.

2012121300815001002E99BC

RECORDING AND ENDORSEMENT COVER PAGE **PAGE 1 OF 3**

Document ID: 2012121300815001 Document Date: 12-13-2012 Preparation Date: 12-14-2012
Document Type: DEED
Document Page Count: 2

PRESENTER:	**RETURN TO:**
GRAND BORO SEARCHES INC. 69 EAST JERICHO TPKE. # 103099A TEAM EXAMINERS PICKUP MINEOLA, NY 11501 516-248-4840 ed@btitle.com	BARRY KAPLAN, ESQ. 360 LEXINGTON AVENUE, 23RD FLOOR TEAM EXAMINERS PICKUP NEW YORK, NY 10017

PROPERTY DATA

Borough	Block	Lot	Unit	Address
BROOKLYN	2992	17	Entire Lot	418 JOHNSON AVENUE

Property Type: INDUSTRIAL BUILDING

CROSS REFERENCE DATA

CRFN_____ *or* Document ID_____ *or* _____ Year____ Reel ___ Page ____ *or* File Number_____

PARTIES

GRANTOR/SELLER:	**GRANTEE/BUYER:**
ROBERT HARPER 51 FIFTH AVENUE NEW YORK, NY 10003	JBC LAND LLC 450 JOHNSON AVENUE BROOKLYN, NY 11237

FEES AND TAXES

Mortgage		
Mortgage Amount:	$	0.00
Taxable Mortgage Amount:	$	0.00
Exemption:		
TAXES: County (Basic):	$	0.00
City (Additional):	$	0.00
Spec (Additional):	$	0.00
TASF:	$	0.00
MTA:	$	0.00
NYCTA:	$	0.00
Additional MRT:	$	0.00
TOTAL:	$	0.00
Recording Fee:	$	47.00
Affidavit Fee:	$	0.00

Filing Fee:	$	250.00
NYC Real Property Transfer Tax:	$	0.00
NYS Real Estate Transfer Tax:	$	0.00

RECORDED OR FILED IN THE OFFICE OF THE CITY REGISTER OF THE CITY OF NEW YORK
Recorded/Filed 12-17-2012 14:50
City Register File No.(CRFN):
2012000492993

City Register Official Signature

BARGAIN AND SALE DEED WITH COVENANT AGAINST GRANTOR'S ACTS (INDIVIDUAL OR CORPORATION)

THIS INDENTURE, made the 13th December, 2012,

BETWEEN Robert Harper, of 51 Fifth Avenue, Unit 5H, New York, New York 10003,

party of the first part, and

JBC Land LLC, with an office located at 450 Johnson Avenue, Brooklyn, New York 11237,

party of the second part;

WITNESSETH, that the party of the first part, in consideration of Ten Dollars and No Cents ($10.00) and other valuable consideration paid by the party of the second part, does hereby grant and release unto the party of the second part, the heirs or successors and assigns of the party of the second part forever;

ALL that certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Borough of Brooklyn, County of Kings, City and State of New York, bounded and described as follows:

BEGINNING, at a point on the southerly side of Johnson Avenue distant 400 feet westerly from the corner formed by the intersection of the southerly side of Johnson Avenue and the westerly side of Porter Avenue;

RUNNING THENCE, westerly along the southerly side of Johnson Avenue 100 feet;

THENCE westerly along the southerly side of Johnson Avenue 100 feet;

THENCE southerly parallel with Porter Avenue 100 feet;

THENCE easterly parallel with Johnson Avenue 100 feet;

THENCE, northerly parallel with Porter Avenue 100 feet to the point or place of BEGINNING.

TOGETHER with all right, title and interest, if any, of the party of the first part in and to any streets and roads abutting the above described premises to the center lines thereof,

TOGETHER with the appurtenances and all the estate and rights of the party of the first part in and to said premises,

Section: 10
Block: 2992
Lot: 17

NYSBA's Residential Real Estate Forms (9/00) © 2012 Matthew Bender & Co., a member of the LexisNexis Group.

TO HAVE AND TO HOLD the premises herein granted unto the party of the second part, the heirs or successors and assigns of the party of the second part forever.

AND the party of the first part, covenants that the party of the first part has not done or suffered anything whereby the said premises have been encumbered in any way whatever, except as aforesaid.

AND the party of the first part, in compliance with Section 13 of the Lien Law, covenants that the party of the first part will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.

The word "party" shall be construed as if it read "parties" whenever the sense of this indenture so requires.

IN WITNESS WHEREOF, the party of the first part has duly executed this deed the day and year first above written.

Robert Harper

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

On the 13th day of December, 2012, before me, the undersigned, personally appeared **ROBERT HARPER** personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and he/she/they acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s) or the person upon behalf of which the individual(s) acted, executed the instrument.

Notary

BARRY MITCHELL KAPLAN
Notary Public, State of New York
No. 02KA4618904
Qualified in New York County
Commission Expires October 31, 2013

SEAL

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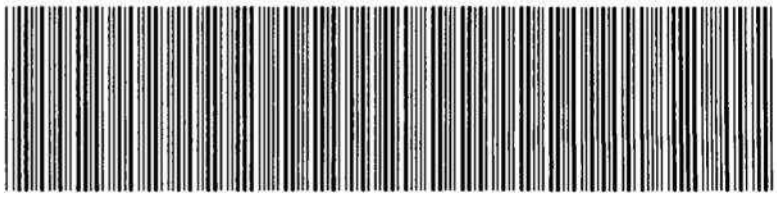
NYC DEPARTMENT OF FINANCE
OFFICE OF THE CITY REGISTER



2012121300815001002S573D

SUPPORTING DOCUMENT COVER PAGE **PAGE 1 OF 1**

Document ID: 2012121300815001 Document Date: 12-13-2012 Preparation Date: 12-14-2012
Document Type: DEED

ASSOCIATED TAX FORM ID: 2012121300297

SUPPORTING DOCUMENTS SUBMITTED:

	Page Count
DEP CUSTOMER REGISTRATION FORM FOR WATER AND SEWER BILLING	1
RP - 5217 REAL PROPERTY TRANSFER REPORT	1
SMOKE DETECTOR AFFIDAVIT	1

FOR CITY USE ONLY

C1. County Code | C2. Date Deed Recorded (Month / Day / Year)

C3. Book OR C5. CRFN | C4. Page

REAL PROPERTY TRANSFER REPORT

STATE OF NEW YORK
STATE BOARD OF REAL PROPERTY SERVICES

RP - 5217NYC

PROPERTY INFORMATION

1. Property Location: 418 (STREET NUMBER) JOHNSON AVENUE (STREET NAME) BROOKLYN (BOROUGH) 11237 (ZIP CODE)

CITY REGISTER

2. Buyer Name: JBC LAND LLC (LAST NAME / COMPANY) (FIRST NAME)

(LAST NAME / COMPANY) (FIRST NAME)

DEC 14 2012

3. Tax Billing Address: Indicate where future Tax Bills are to be sent if other than buyer address (at bottom of form) (LAST NAME / COMPANY) (FIRST NAME)

(STREET NUMBER AND STREET NAME) (CITY OR TOWN) (STATE) (ZIP CODE)

4. Indicate the number of Assessment Roll parcels transferred on the deed: 1 # of Parcels OR ☐ Part of a Parcel

4A. Planning Board Approval - N/A for NYC

4B. Agricultural District Notice - N/A for NYC

5. Deed Property Size: (FRONT FEET) X (DEPTH) OR (ACRES)

Check the boxes below as they apply:

6. Ownership Type is Condominium ☐

7. New Construction on Vacant Land ☐

8. Seller Name: HARPER (LAST NAME / COMPANY) ROBERT (FIRST NAME)

(LAST NAME / COMPANY) (FIRST NAME)

9. Check the box below which most accurately describes the use of the property at the time of sale:

A ☐ One Family Residential
B ☐ 2 or 3 Family Residential
C ☐ Residential Vacant Land
D ☐ Non-Residential Vacant Land
E ☐ Commercial
F ☐ Apartment
G ☐ Entertainment / Amusement
H ☐ Community Service
I ☑ Industrial
J ☐ Public Service

SALE INFORMATION

10. Sale Contract Date: 12 / 13 / 2012 (Month / Day / Year)

11. Date of Sale / Transfer: 12 / 13 / 2012 (Month / Day / Year)

12. Full Sale Price: $ 0

(Full Sale Price is the total amount paid for the property including personal property. This payment may be in the form of cash, other property or goods, or the assumption of mortgages or other obligations.) *Please round to the nearest whole dollar amount.*

13. Indicate the value of personal property included in the sale

14. Check one or more of these conditions as applicable to transfer:

A ☑ Sale Between Relatives or Former Relatives
B ☐ Sale Between Related Companies or Partners in Business
C ☐ One of the Buyers is also a Seller
D ☐ Buyer or Seller is Government Agency or Lending Institution
E ☐ Deed Type not Warranty or Bargain and Sale (Specify Below)
F ☐ Sale of Fractional or Less than Fee Interest (Specify Below)
G ☐ Significant Change in Property Between Taxable Status and Sale Dates
H ☐ Sale of Business is Included in Sale Price
I ☐ Other Unusual Factors Affecting Sale Price (Specify Below)
J ☐ None

ASSESSMENT INFORMATION - Data should reflect the latest Final Assessment Roll and Tax Bill

15. Building Class: F 9

16. Total Assessed Value (of all parcels in transfer): 337,050

17. Borough, Block and Lot / Roll Identifier(s) (If more than three, attach sheet with additional identifier(s))

BROOKLYN 2992 17

2012121300297201O1

CERTIFICATION

I certify that all of the items of information entered on this form are true and correct (to the best of my knowledge and belief) and understand that the making of any willful false statement of material fact herein will subject me to the provisions of the penal law relative to the making and filing of false instruments.

BUYER		BUYER'S ATTORNEY	
Robert C Harper by ROBERT C HARPER	12/13/2012	BARRY KAPLAN, ESQ	
BUYER SIGNATURE	DATE	LAST NAME	FIRST NAME
450 JOHNSON AVENUE		212	779-3535
STREET NUMBER / STREET NAME (AFTER SALE)		AREA CODE	TELEPHONE NUMBER
BROOKLYN	NY 11237	SELLER	
CITY OR TOWN	STATE ZIP CODE	SELLER SIGNATURE	DATE
		Robert Harper ROBERT HARPER	12/13/2012

2012121300297201

Affidavit of Compliance with Smoke Detector Requirement for One and-Two Family Dwellings

AFFIDAVIT OF COMPLIANCE WITH SMOKE DETECTOR REQUIREMENT FOR ONE- AND TWO-FAMILY DWELLINGS

State of New York)
County of NEW YORK) SS.:

The undersigned, being duly sworn, depose and say under penalty of perjury that they are the grantor and grantee of the real property or of the cooperative shares in a cooperative corporation owning real property located at

418 JOHNSON AVENUE , ,
Street Address Unit/Apt.

BROOKLYN New York, 2992 17 (the "Premises");
Borough Block Lot

That the Premises is a one or two family dwelling, or a cooperative apartment or condominium unit in a one- or two-family dwelling, and that installed in the Premises is an approved and operational smoke detecting device in compliance with the provisions of Article 6 of Subchapter 17 of Chapter 1 of Title 27 of the Administrative Code of the City of New York concerning smoke detecting devices;

That they make affidavit in compliance with New York City Administrative Code Section 11-2105 (g). (The signatures of at least one grantor and one grantee are required, and must be notarized).

ROBERT HARPER
Name of Grantor (Type or Print)

Signature of Grantor

Sworn to before me
this 13TH date of DECEMBER 2012

BARRY MITCHELL KAPLAN
Notary Public, State of New York
No. 02KA4618904
Qualified in New York County
Commission Expires October 31, 2013

JBC LAND LLC
by ROBERT C HARPER, MANAGING MEMBER
Name of Grantee (Type or Print)

Signature of Grantee

Sworn to before me
this 13TH date of DECEMBER 2012

BARRY MITCHELL KAPLAN
Notary Public, State of New York
No. 02KA4618904
Qualified in New York County
Commission Expires October 31, 2013

These statements are made with the knowledge that a willfully false representation is unlawful and is punishable as a crime of perjury under Article 210 of the Penal Law.

NEW YORK CITY REAL PROPERTY TRANSFER TAX RETURNS FILED ON OR AFTER FEBRUARY 6th, 1990, WITH RESPECT TO THE CONVEYANCE OF A ONE- OR TWO-FAMILY DWELLING, OR A COOPERATIVE APARTMENT OR A CONDOMINIUM UNIT IN A ONE- OR TWO-FAMILY DWELLING, WILL NOT BE ACCEPTED FOR FILING UNLESS ACCOMPANIED BY THIS AFFIDAVIT.

1

SEAL

2012121300297101

The City of New York
Department of Environmental Protection
Bureau of Customer Services
59-17 Junction Boulevard
Flushing, NY 11373-5108

Customer Registration Form for Water and Sewer Billing

Property and Owner Information:

(1) Property receiving service: BOROUGH: BROOKLYN BLOCK: 2992 LOT: 17

(2) Property Address: 418 JOHNSON AVENUE, BROOKLYN, NY 11237

(3) Owner's Name: JBC LAND LLC

Additional Name:

Affirmation:

☑ Your water & sewer bills will be sent to the property address shown above.

Customer Billing Information:

Please Note:

A. Water and sewer charges are the legal responsibility of the owner of a property receiving water and/or sewer service. The owner's responsibility to pay such charges is not affected by any lease, license or other arrangement, or any assignment of responsibility for payment of such charges. Water and sewer charges constitute a lien on the property until paid. In addition to legal action against the owner, a failure to pay such charges when due may result in foreclosure of the lien by the City of New York, the property being placed in a lien sale by the City or Service Termination.

B. Original bills for water and/or sewer service will be mailed to the owner, **at the property address or to an alternate mailing address.** DEP will provide a duplicate copy of bills to one other party (such as a managing agent), however, any failure or delay by DEP in providing duplicate copies of bills shall in no way relieve the owner from his/her liability to pay all outstanding water and sewer charges. Contact DEP at (718) 595-7000 during business hours or visit www.nyc.gov/dep to provide us with the other party's information.

Owner's Approval:

The undersigned certifies that he/she/it is the owner of the property receiving service referenced above; that he/she/it has read and understands Paragraphs A & B under the section captioned "Customer Billing Information"; and that the information supplied by the undersigned on this form is true and complete to the best of his/her/its knowledge.

Print Name of Owner: JBC LAND LLC

Signature: Robert C Harper Date (mm/dd/yyyy) 12/13/2012

Name and Title of Person Signing for Owner, if applicable: BY ROBERT C HARPER, MANAGING MEMBER

BCS-7CRF-ACRIS REV. 8/08

2012121300297101

Property Detail Report

For Property Located At :
79 INGRAHAM ST, BROOKLYN, NY 11237

Owner Information

Owner Name:	**JBC LAND LLC**
Mailing Address:	**450 JOHNSON AVE, BROOKLYN NY 11237-1202 C002**
Vesting Codes:	**/ /**

Location Information

Legal Description:			
County:	**BROOKLYN, NY**	APN:	**02992-0055**
Census Tract / Block:	**453.00 / 1**	Alternate APN:	**02992-00055**
Township-Range-Sect:	**03-00-10**	Subdivision:	
Legal Book/Page:		Map Reference:	**10-03-10 /**
Legal Lot:	**55**	Tract #:	
Legal Block:	**2992**	School District:	**3620580**
Market Area:		School District Name:	**NYC DEPT OF ED**
Neighbor Code:	**30**	Munic/Township:	**WILLIAMSBURG**

Owner Transfer Information

Recording/Sale Date:	**12/17/2012 / 12/13/2012**	Deed Type:	**BARGAIN & SALE DEED**
Sale Price:		1st Mtg Document #:	
Document #:	**492988**		

Last Market Sale Information

Recording/Sale Date:	**02/22/2006 / 01/23/2006**	1st Mtg Amount/Type:	**/**
Sale Price:	**$1**	1st Mtg Int. Rate/Type:	**/**
Sale Type:		1st Mtg Document #:	
Document #:	**102209**	2nd Mtg Amount/Type:	**/**
Deed Type:	**DEED (REG)**	2nd Mtg Int. Rate/Type:	**/**
Transfer Document #:		Price Per SqFt:	
New Construction:		Multi/Split Sale:	**MULTI**
Title Company:			
Lender:			
Seller Name:	**NEW YORK CITY INDUSTRIAL DEVEL**		

Prior Sale Information

Prior Rec/Sale Date:	**07/08/1987 /**	Prior Lender:	
Prior Sale Price:		Prior 1st Mtg Amt/Type:	**/**
Prior Doc Number:	**2054-15**	Prior 1st Mtg Rate/Type:	**/**
Prior Deed Type:	**DEED (REG)**		

Property Characteristics

Year Built / Eff:	**/**	Total Rooms/Offices		Garage Area:	
Gross Area:		Total Restrooms:		Garage Capacity:	
Building Area:		Roof Type:		Parking Spaces:	
Tot Adj Area:		Roof Material:		Heat Type:	
Above Grade:		Construction:		Air Cond:	
# of Stories:		Foundation:		Pool:	
Other Improvements:	**Building Permit**	Exterior wall:		Quality:	
		Basement Area:		Condition:	

Site Information

Zoning:	**M1-2**	Acres:	**0.11**	County Use:	**GARAGE RESID TAX CLASS 1 (G7)**
Lot Area:	**5,000**	Lot Width/Depth:	**50 x 100**	State Use:	
Land Use:	**GARAGE**	Commercial Units:		Water Type:	
Site Influence:		Sewer Type:		Building Class:	**G7**

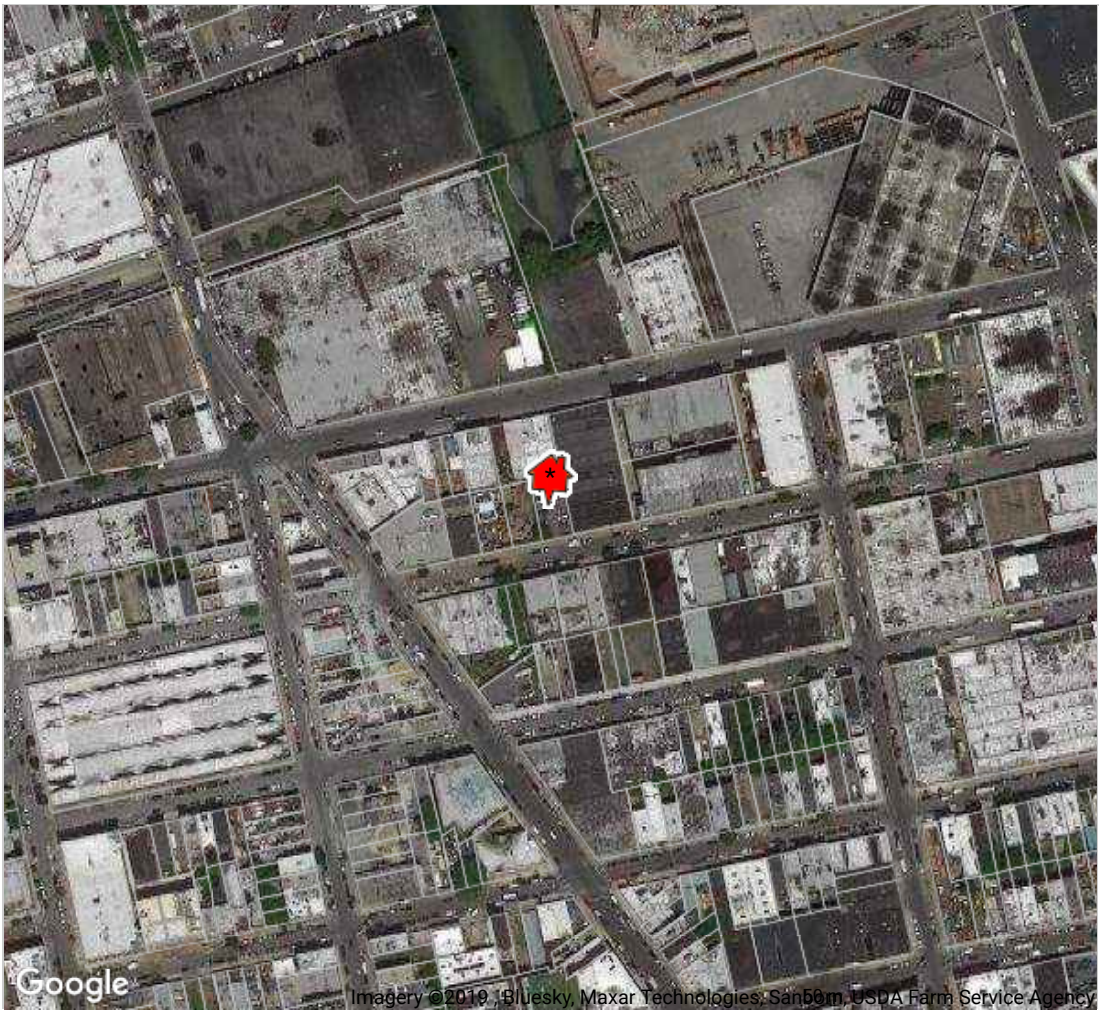
Tax Information

Total Value:	**$201,000**	Assessed Year:	**2018**	Property Tax:	**$6,519.72**
Land Value:	**$201,000**	Improved %:		Tax Area:	**4**
Improvement Value:		Tax Year:	**2018**	Tax Exemption:	**MISC**
Total Taxable Value:	**$62,010**				

Street Map Plus Report

For Property Located At

79 INGRAHAM ST, BROOKLYN, NY 11237



NYC DEPARTMENT OF FINANCE
OFFICE OF THE CITY REGISTER

This page is part of the instrument. The City Register will rely on the information provided by you on this page for purposes of indexing this instrument. The information on this page will control for indexing purposes in the event of any conflict with the rest of the document.

2006020901727002001EEA93

RECORDING AND ENDORSEMENT COVER PAGE **PAGE 1 OF 4**

Document ID: 2006020901727002 Document Date: 01-23-2006 Preparation Date: 02-09-2006
Document Type: DEED
Document Page Count: 3

PRESENTER:
FIRST AMERICAN TITLE INSURANCE- PICK UP
633 THIRD AVENUE
NEW YORK, NY 10017
212-850-0670
3008-126898KREC ml

RETURN TO:
JOHN SOMERS
89 REYNOLDS STREETR
CITY ISLAND, NY 10464

PROPERTY DATA

Borough	Block	Lot	Unit	Address
BROOKLYN	2992	21	Entire Lot	450 JOHNSON AVENUE
Property Type:	INDUSTRIAL BUILDING			
Borough	**Block**	**Lot**	**Unit**	**Address**
BROOKLYN	2992	55	Entire Lot	79 INGRAHAM STREET
Property Type:	INDUSTRIAL BUILDING			

CROSS REFERENCE DATA

CRFN_____ *or* Document ID_____ *or* _____ Year____ Reel ___ Page ____ *or* File Number_____

PARTIES

GRANTOR/SELLER:
NEW YORK CITY INDUSTRIAL DEVELOPMENT AGENCY
110 WILLIAM STREET
NEW YORK, NY 10038

GRANTEE/BUYER:
ROBERT C. HARPER
450 JOHNSON AVENUE, ENVELOPE MANUFACUTURERS CORPORATION
BROOKLYN, NY 11237

FEES AND TAXES

Mortgage		
Mortgage Amount:	$	0.00
Taxable Mortgage Amount:	$	0.00
Exemption:		
TAXES: County (Basic):	$	0.00
City (Additional):	$	0.00
Spec (Additional):	$	0.00
TASF:	$	0.00
MTA:	$	0.00
NYCTA:	$	0.00
Additional MRT:	$	0.00
TOTAL:	$	0.00

NYC HPD Affidavit in Lieu of Registration Statement

Recording Fee: $	55.00
Affidavit Fee: $	0.00
NYC Real Property Transfer Tax Filing Fee: $	165.00
NYS Real Estate Transfer Tax: $	0.00

RECORDED OR FILED IN THE OFFICE OF THE CITY REGISTER OF THE CITY OF NEW YORK
Recorded/Filed 02-22-2006 12:10
City Register File No.(CRFN):
2006000102209

City Register Official Signature

CONSULT YOUR LAWYER BEFORE SIGNING THIS INSTRUMENT - THIS INSTRUMENT SHOULD BE USED BY LAWYERS ONLY

THIS INDENTURE, made the 23 **day of** January **, two thousand and six**

BETWEEN NEW YORK CITY INDUSTRIAL DEVELOPMENT AGENCY, a corporate governmental agency constituting a body corporate and politic and a public benefit corporation of the State of New York, duly organized and existing under the laws of the State of New York, having its principal office located at 110 William Street, New York, New York 10038

Grantor

party of the first part, and

Robert C. Harper, an individual having his principal office at 450 Johnson Avenue*, Brooklyn, New York 11237
*Envelope Manufacturers Corporation
Grantee

party of the second part,

WITNESSETH, that the party of the first part, in consideration of ----------ONE $(1.00)----------dollar, lawful money of the United States, paid by the party of the second part, does hereby grant and release unto the party of the second part, the heirs or successors and assigns of the party of the second part forever,

ALL that certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Borough of Brooklyn, County of Kings, City and State of New York, bounded and described as follows:

Parcel I

BEGINNING at a point on the northerly side of Ingraham Street, distant 400 feet westerly from the corner formed by the intersection of the northerly side of Ingraham Street with the westerly side of Porter Avenue;

RUNNING THENCE northerly, parallel with Porter Avenue, 100 feet;

THENCE westerly, parallel with Ingraham Street, 50 feet;

THENCE southerly again parallel with Porter Avenue, 100 feet to the northerly side of Ingraham Street; and

THENCE easterly along the northerly side of Ingraham Street, 50 feet to the point or place of BEGINNING.

Parcel II

BEGINNING at a point on the southerly side of Johnson Avenue, distant 300 feet westerly from the corner formed by the intersection of the southerly side of Johnson Avenue with the westerly side of Porter Avenue;

RUNNING THENCE westerly along the southerly side of Johnson Avenue, 100 feet;

THENCE southerly, parallel with Porter Avenue, 200 feet to the northerly side of Ingraham Street;

THENCE easterly along the northerly side of Ingraham Street, 100 feet; and

THENCE northerly, parallel with Porter Avenue, 200 feet to the southerly side of Johnson Avenue at the point or place of BEGINNING.

TOGETHER with all right, title and interest, if any, of the party of the first part in and to any streets and roads abutting the above described premises to the center lines thereof,

TOGETHER with the appurtenances and all the estate and rights of the party of the first part in and to said premises,

TO HAVE AND TO HOLD the premises herein granted unto the party of the second part, the heirs or successors and assigns of the party of the second part forever.

AND the party of the first part, in compliance with Section 13 of the Lien Law, covenants that the party of the first part will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.

The word "party" shall be construed as if it read "parties" whenever the sense of this indenture so requires.

IN WITNESS WHEREOF, the party of the first part has duly executed this deed the day and year first above written.

In PRESENCE OF:

Jill Braverman

New York City Industrial
Development Agency

Deputy Executive Director

STATE OF NEW YORK, COUNTY OF ss:

On the day of 20 , before me personally came
to me known to be the individual described in and who executed the foregoing instrument, and acknowledged that executed the same.

STATE OF NEW YORK, COUNTY OF ss:

On the day of 20 , before me personally came
to me known to be the individual described in and who executed the foregoing instrument, and acknowledged that executed the same.

STATE OF NEW YORK, COUNTY OF NEW YORK ss:

On the 19th day of January the year 2006 before me, the undersigned, a Notary Public in and for (said State) (The City of New York), personally appeared Kei Hayashi, personally known to me or proved to me on the basis of satisfactory evidence to be the individual whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her capacity, and that by her signature on the instrument, the individual, or the person on behalf of which the individual acted, executed the instrument.

Carol M. Hyde

Notary Public, State of New York
No. 4977270
Qualified in Kings County
Commission Expires Jan 28, 2007

STATE OF NEW YORK, COUNTY OF ss:

On the day of 20 , before me personally came
to me known, who, being by me duly sworn, did depose and say that he resides at No.

that he is the
of
, the corporation described in and which executed the foregoing instrument; that he knows the seal of said corporation; that the seal affixed to said instrument is such corporate seal; that it was so affixed by order of the board of directors of said corporation, and that he signed h name thereto by like order.

SECTION:
BLOCK: 2992
LOTS: 21 and 55
COUNTY OR TOWN Kings County

Bargain and Sale Deed
Without Covenant Against Grantor's Acts
TITLE NO. 2006-126898

NEW YORK CITY INDUSTRIAL DEVELOPMENT AGENCY

TO

ROBERT C. HARPER

RETURN BY MAIL TO:

JOHN SOMERS
89 Reynold Street
City Island NY 10464

Zip No.

Reserve this space for Recording Office.

NYC DEPARTMENT OF FINANCE
OFFICE OF THE CITY REGISTER

2006020901727002001S2412

SUPPORTING DOCUMENT COVER PAGE **PAGE 1 OF 1**

Document ID: 2006020901727002 Document Date: 01-23-2006 Preparation Date: 02-09-2006
Document Type: DEED

ASSOCIATED TAX FORM ID: 2006011800511

SUPPORTING DOCUMENTS SUBMITTED:

	Page Count
RP - 5217 REAL PROPERTY TRANSFER REPORT	1

FOR CITY USE ONLY

C1. County Code | C2. Date Deed Recorded | Month / Day / Year

C3. Book OR C4. Page

C5. CRFN

REAL PROPERTY TRANSFER REPORT

STATE OF NEW YORK
STATE BOARD OF REAL PROPERTY SERVICES

RP - 5217NYC

(Rev 11/2002)

PROPERTY INFORMATION

1. Property Location: 450 (STREET NUMBER) | JOHNSON AVENUE (STREET NAME) | BROOKLYN (BOROUGH) | 11237 (ZIP CODE)

2. Buyer Name: HARPER (LAST NAME / COMPANY) | ROBERT (FIRST NAME)

LAST NAME / COMPANY | FIRST NAME

3. Tax Billing Address — Indicate where future Tax Bills are to be sent if other than buyer address (at bottom of form): HARPER (LAST NAME / COMPANY) | ROBERT (FIRST NAME)

450 JOHNSON AVENUE (STREET NUMBER AND STREET NAME) | BROOKLYN (CITY OR TOWN) | NY (STATE) | 11237 (ZIP CODE)

4. Indicate the number of Assessment Roll parcels transferred on the deed: 2 # of Parcels OR ☐ Part of a Parcel

4A. Planning Board Approval - N/A for NYC

4B. Agricultural District Notice - N/A for NYC

5. Deed Property Size: FRONT FEET X DEPTH OR ACRES

Check the boxes below as they apply:

6. Ownership Type is Condominium ☐

7. New Construction on Vacant Land ☐

8. Seller Name: NEW YORK CITY INDUSTRIAL DEVELOPMENT AGENCY (LAST NAME / COMPANY) | FIRST NAME

LAST NAME / COMPANY | FIRST NAME

9. Check the box below which most accurately describes the use of the property at the time of sale:

A ☐ One Family Residential
B ☐ 2 or 3 Family Residential
C ☐ Residential Vacant Land
D ☐ Non-Residential Vacant Land
E ☐ Commercial
F ☐ Apartment
G ☐ Entertainment / Amusement
H ☐ Community Service
I ☑ Industrial
J ☐ Public Service

SALE INFORMATION

10. Sale Contract Date: 1 / 23 / 2006 (Month / Day / Year)

11. Date of Sale / Transfer: 1 / 23 / 2006 (Month / Day / Year)

12. Full Sale Price: $ 1

(Full Sale Price is the total amount paid for the property including personal property. This payment may be in the form of cash, other property or goods, or the assumption of mortgages or other obligations.) *Please round to the nearest whole dollar amount.*

13. Indicate the value of personal property included in the sale:

14. Check one or more of these conditions as applicable to transfer:

A ☐ Sale Between Relatives or Former Relatives
B ☐ Sale Between Related Companies or Partners in Business
C ☐ One of the Buyers is also a Seller
D ☑ Buyer or Seller is Government Agency or Lending Institution
E ☐ Deed Type not Warranty or Bargain and Sale (Specify Below)
F ☐ Sale of Fractional or Less than Fee Interest (Specify Below)
G ☐ Significant Change in Property Between Taxable Status and Sale Dates
H ☐ Sale of Business is Included in Sale Price
I ☐ Other Unusual Factors Affecting Sale Price (Specify Below)
J ☐ None

ASSESSMENT INFORMATION - Data should reflect the latest Final Assessment Roll and Tax Bill

15. Building Class: F 4

16. Total Assessed Value (of all parcels in transfer): 406,800

17. Borough, Block and Lot / Roll Identifier(s) (If more than three, attach sheet with additional identifier(s))

BROOKLYN 2992 21 | BROOKLYN 2992 55

CERTIFICATION

I certify that all of the items of information entered on this form are true and correct (to the best of my knowledge and belief) and I understand that the making of any willful false statement of material fact herein will subject me to the provisions of the penal law relative to the making and filing of false instruments.

BUYER

Robert C Harper 01-20-06

BUYER SIGNATURE | DATE

450 JOHNSON AVENUE ENVELOPE MANUFACUTURERS CORPORATION

STREET NUMBER | STREET NAME (AFTER SALE)

BROOKLYN | NY | 11237

CITY OR TOWN | STATE | ZIP CODE

BUYER'S ATTORNEY

John Powers 01.20.06

LAST NAME | FIRST NAME

718 | 885-2759

AREA CODE | TELEPHONE NUMBER

SELLER

[signature] 01.23.06

SELLER SIGNATURE | DATE

2006011800511201

CERTIFICATION

I certify that all of the items of information entered on this form are true and correct (to the best of my knowledge and belief) and understand that the making of any willful false statement of material fact herein will subject me to the provisions of the penal law relative to the making and filing of false instruments.

BUYER			BUYER'S ATTORNEY	
Robert C. Harper	9-20-06		John Lowers	
BUYER SIGNATURE	DATE		LAST NAME	FIRST NAME
450 JOHNSON AVENUE ENVELOPE MANUFACUTURERS CORPORATION			718	885-2759
STREET NUMBER / STREET NAME (AFTER SALE)			AREA CODE	TELEPHONE NUMBER
BROOKLYN	NY	11237	**SELLER**	
CITY OR TOWN	STATE	ZIP CODE	SELLER SIGNATURE	DATE
				01.20.06

2006011800511201

NYC DEPARTMENT OF FINANCE
OFFICE OF THE CITY REGISTER

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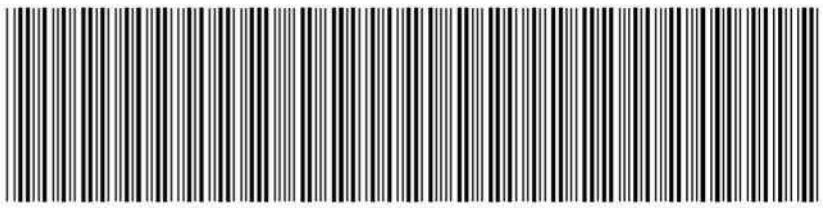


2012121300825001003EF9A9

RECORDING AND ENDORSEMENT COVER PAGE **PAGE 1 OF 4**

Document ID: 2012121300825001 Document Date: 12-13-2012 Preparation Date: 12-14-2012
Document Type: DEED
Document Page Count: 3

PRESENTER:
GRAND BORO SEARCHES INC.
69 EAST JERICHO TPKE. #103099
TEAM EXAMINERS PICKUP
MINEOLA, NY 11501
516-248-4840
ed@btitle.com

RETURN TO:
BARRY KAPLAN, ESQ.
360 LEXINGTON AVENUE, 23RD FLOOR
TEAM EXAMINERS PICKUP
BEW YORK, NY 10017

PROPERTY DATA

Borough	Block	Lot		Unit	Address
BROOKLYN	2992	21	Entire Lot		450 JOHNSON AVENUE
Property Type: INDUSTRIAL BUILDING					
Borough	**Block**	**Lot**		**Unit**	**Address**
BROOKLYN	2992	55	Entire Lot		79 INGRAHAM STREET
Property Type: INDUSTRIAL BUILDING					

CROSS REFERENCE DATA
CRFN_____ *or* Document ID_____ *or* _____ Year____ Reel ___ Page ____ *or* File Number_____

PARTIES

GRANTOR/SELLER:
ROBERT C. HARPER
450 JOHNSON AVENUE
BROOKLYN, NY 11237

GRANTEE/BUYER:
JBC LAND LLC
450 JOHNSON AVENUE
BROOKLYN, NY 11237

FEES AND TAXES

Mortgage		
Mortgage Amount:	$	0.00
Taxable Mortgage Amount:	$	0.00
Exemption:		
TAXES: County (Basic):	$	0.00
City (Additional):	$	0.00
Spec (Additional):	$	0.00
TASF:	$	0.00
MTA:	$	0.00
NYCTA:	$	0.00
Additional MRT:	$	0.00
TOTAL:	$	0.00
Recording Fee:	$	55.00
Affidavit Fee:	$	0.00

Filing Fee:	$	250.00
NYC Real Property Transfer Tax:	$	0.00
NYS Real Estate Transfer Tax:	$	0.00

RECORDED OR FILED IN THE OFFICE OF THE CITY REGISTER OF THE CITY OF NEW YORK
Recorded/Filed 12-17-2012 14:50
City Register File No.(CRFN):
2012000492988

City Register Official Signature

BARGAIN AND SALE DEED WITH COVENANT AGAINST GRANTOR'S ACTS (INDIVIDUAL OR CORPORATION)

THIS INDENTURE, made the 13th December, 2012,

BETWEEN Robert C. Harper, an individual having his principal office at Envelope Manufacturers Corporation, 450 Johnson Avenue, Brooklyn, New York 11237,

party of the first part, and

JBC Land LLC, with an office located at 450 Johnson Avenue, Brooklyn, New York 11237,

party of the second part;

WITNESSETH, that the party of the first part, in consideration of Ten Dollars and No Cents ($10.00) and other valuable consideration paid by the party of the second part, does hereby grant and release unto the party of the second part, the heirs or successors and assigns of the party of the second part forever;

ALL that certain plot, piece or parcel of land, with the buildings and improvements thereon erected, situate, lying and being in the Borough of Brooklyn, County of Kings, City and State of New York, bounded and described as follows:

Parcel 1

BEGINNING at a point on the northerly side of Ingraham Street, distant 400 feet westerly from the corner formed by the intersection of the northerly side of Ingraham Street with the westerly side of Porter Avenue;

RUNNING THENCE northerly, parallel with Porter Avenue, 100 feet;

THENCE westerly, parallel with Ingraham Street, 50 feet;

THENCE southerly again parallel with Porter Avenue, 100 feet to the northerly side of Ingraham Street; and

THENCE easterly along the northerly side of Ingraham Street, 50 feet to the point or place of BEGINNING.

Section:
Block: 2992
Lots: 21 and 55

NYSBA's Residential Real Estate Forms (9/00) © 2012 Matthew Bender & Co., a member of the LexisNexis Group.

Parcel 2

BEGINNING at a point on the southerly side of Johnson Avenue, distant 300 feet westerly from the corner formed by the intersection of the southerly side of Johnson Avenue with the westerly side of Porter Avenue;

RUNNING THENCE westerly along the southerly side of Johnson Avenue, 100 feet;

THENCE southerly, parallel with Porter Avenue, 200 feet to the northerly side of Ingraham Street;

THENCE easterly along the northerly side of Ingraham Street, 100 feet; and

THENCE northerly, parallel with Porter Avenue, 200 feet to the southerly side of Johnson Avenue at the point or place of BEGINNING.

TOGETHER with all right, title and interest, if any, of the party of the first part in and to any streets and roads abutting the above described premises to the center lines thereof,

TOGETHER with the appurtenances and all the estate and rights of the party of the first part in and to said premises,

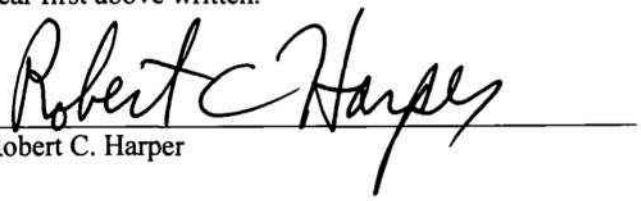
TO HAVE AND TO HOLD the premises herein granted unto the party of the second part, the heirs or successors and assigns of the party of the second part forever.

AND the party of the first part, covenants that the party of the first part has not done or suffered anything whereby the said premises have been encumbered in any way whatever, except as aforesaid.

AND the party of the first part, in compliance with Section 13 of the Lien Law, covenants that the party of the first part will receive the consideration for this conveyance and will hold the right to receive such consideration as a trust fund to be applied first for the purpose of paying the cost of the improvement and will apply the same first to the payment of the cost of the improvement before using any part of the total of the same for any other purpose.

The word "party" shall be construed as if it read "parties" whenever the sense of this indenture so requires.

IN WITNESS WHEREOF, the party of the first part has duly executed this deed the day and year first above written.



Robert C. Harper

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STATE OF NEW YORK)
COUNTY OF New York) **ss:**

On the 13th day of December, 2012, before me, the undersigned, personally appeared **ROBERT C. HARPER** personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and he/she/they acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s) or the person upon behalf of which the individual(s) acted, executed the instrument.

Notary

BARRY MITCHELL KAPLAN
Notary Public, State of New York
No. 02KA4618904
Qualified in New York County
Commission Expires October 31, 2013

SEAL

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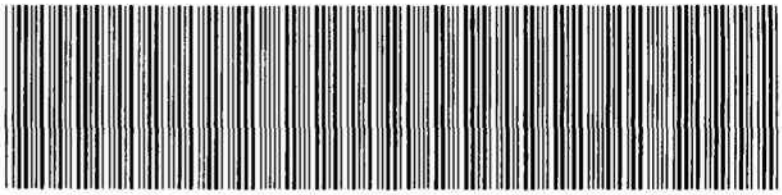
NYC DEPARTMENT OF FINANCE
OFFICE OF THE CITY REGISTER



2012121300825001003S3728

SUPPORTING DOCUMENT COVER PAGE **PAGE 1 OF 1**

Document ID: 2012121300825001 Document Date: 12-13-2012 Preparation Date: 12-14-2012
Document Type: DEED

ASSOCIATED TAX FORM ID: 2012121300272

SUPPORTING DOCUMENTS SUBMITTED:

	Page Count
DEP CUSTOMER REGISTRATION FORM FOR WATER AND SEWER BILLING	1
RP - 5217 REAL PROPERTY TRANSFER REPORT	1
SMOKE DETECTOR AFFIDAVIT	1

FOR CITY USE ONLY

C1. County Code | C2. Date Deed Recorded (Month / Day / Year)

C3. Book OR C4. Page

C5. CRFN

REAL PROPERTY TRANSFER REPORT

STATE OF NEW YORK
STATE BOARD OF REAL PROPERTY SERVICES

RP - 5217NYC

PROPERTY INFORMATION

1. Property Location: 450 (STREET NUMBER) | JOHNSON AVENUE (STREET NAME) | BROOKLYN (BOROUGH) | 11237 (ZIP CODE)

CITY REGISTER

2. Buyer Name: JBC LAND LLC (LAST NAME / COMPANY) | (FIRST NAME)

(LAST NAME / COMPANY) | (FIRST NAME)

DEC 14 2012

3. Tax Billing Address — Indicate where future Tax Bills are to be sent if other than buyer address (at bottom of form)

(LAST NAME / COMPANY) | (FIRST NAME)

(STREET NUMBER AND STREET NAME) | (CITY OR TOWN)

4. Indicate the number of Assessment Roll parcels transferred on the deed: 2 # of Parcels OR ☐ Part of a Parcel

4A. Planning Board Approval - N/A for NYC

4B. Agricultural District Notice - N/A for NYC

5. Deed Property Size: (FRONT FEET) X (DEPTH) OR (ACRES)

Check the boxes below as they apply:

6. Ownership Type is Condominium ☐

7. New Construction on Vacant Land ☐

8. Seller Name: HARPER (LAST NAME / COMPANY) | ROBERT C (FIRST NAME)

(LAST NAME / COMPANY) | (FIRST NAME)

9. Check the box below which most accurately describes the use of the property at the time of sale:

A ☐	One Family Residential	C ☐	Residential Vacant Land	E ☐	Commercial	G ☐	Entertainment / Amusement	I ☑	Industrial
B ☐	2 or 3 Family Residential	D ☐	Non-Residential Vacant Land	F ☐	Apartment	H ☐	Community Service	J ☐	Public Service

SALE INFORMATION

10. Sale Contract Date: 12 / 13 / 2012 (Month / Day / Year)

11. Date of Sale / Transfer: 12 / 13 / 2012 (Month / Day / Year)

12. Full Sale Price $: 0

(Full Sale Price is the total amount paid for the property including personal property. This payment may be in the form of cash, other property or goods, or the assumption of mortgages or other obligations.) *Please round to the nearest whole dollar amount.*

13. Indicate the value of personal property included in the sale:

14. Check one or more of these conditions as applicable to transfer:

A	☑	Sale Between Relatives or Former Relatives
B	☐	Sale Between Related Companies or Partners in Business
C	☐	One of the Buyers is also a Seller
D	☐	Buyer or Seller is Government Agency or Lending Institution
E	☐	Deed Type not Warranty or Bargain and Sale (Specify Below)
F	☐	Sale of Fractional or Less than Fee Interest (Specify Below)
G	☐	Significant Change in Property Between Taxable Status and Sale Dates
H	☐	Sale of Business is Included in Sale Price
I	☐	Other Unusual Factors Affecting Sale Price (Specify Below)
J	☐	None

ASSESSMENT INFORMATION - Data should reflect the latest Final Assessment Roll and Tax Bill

15. Building Class: F 4

16. Total Assessed Value (of all parcels in transfer): 5 5 3 9 5 0

17. Borough, Block and Lot / Roll Identifier(s) (If more than three, attach sheet with additional identifier(s))

BROOKLYN 2992 21 | BROOKLYN 2992 55

2012121300272201O1

CERTIFICATION

I certify that all of the items of information entered on this form are true and correct (to the best of my knowledge and belief) and understand that the making of any willful false statement of material fact herein will subject me to the provisions of the penal law relative to the making and filing of false instruments.

JBC And LLC

BUYER

Robert C Harper 12/13/2012

BUYER SIGNATURE DATE

By Robert C Harper

450 JOHNSON AVENUE

STREET NUMBER STREET NAME (AFTER SALE)

BROOKLYN NY 11237

CITY OR TOWN STATE ZIP CODE

BUYER'S ATTORNEY

BARRY KAPLAN, ESQ

LAST NAME FIRST NAME

212 779-3535

AREA CODE TELEPHONE NUMBER

SELLER

Robert C Harper 12/13/2012

SELLER SIGNATURE DATE

ROBERT C HARPER

2012121300272201

Affidavit of Compliance with Smoke Detector Requirement for One and-Two Family Dwellings

AFFIDAVIT OF COMPLIANCE WITH SMOKE DETECTOR REQUIREMENT FOR ONE- AND TWO-FAMILY DWELLINGS

State of New York)
County of New York) SS.:

The undersigned, being duly sworn, depose and say under penalty of perjury that they are the grantor and grantee of the real property or of the cooperative shares in a cooperative corporation owning real property located at

450 JOHNSON AVENUE , ,
Street Address Unit/Apt.

BROOKLYN New York, 2992 21 (the "Premises");
Borough Block Lot

That the Premises is a one or two family dwelling, or a cooperative apartment or condominium unit in a one- or two-family dwelling, and that installed in the Premises is an approved and operational smoke detecting device in compliance with the provisions of Article 6 of Subchapter 17 of Chapter 1 of Title 27 of the Administrative Code of the City of New York concerning smoke detecting devices;

That they make affidavit in compliance with New York City Administrative Code Section 11-2105 (g). (The signatures of at least one grantor and one grantee are required, and must be notarized).

ROBERT C HARPER
Name of Grantor (Type or Print)
Robert C Harper
Signature of Grantor

Sworn to before me
this 13TH date of DECEMBER 2012
BARRY MITCHELL KAPLAN
Notary Public, State of New York
No. 02KA4618904
Qualified in New York County
Commission Expires October 31, 2013

JBC LAND LLC
BY ROBERT C HARPER, MANAGING MEMBER
Name of Grantee (Type or Print)
Robert C Harper
Signature of Grantee

Sworn to before me
this 13TH date of DECEMBER 2012
BARRY MITCHELL KAPLAN
Notary Public, State of New York
No. 02KA4618904
Qualified in New York County
Commission Expires October 31, 2013

These statements are made with the knowledge that a willfully false representation is unlawful and is punishable as a crime of perjury under Article 210 of the Penal Law.

NEW YORK CITY REAL PROPERTY TRANSFER TAX RETURNS FILED ON OR AFTER FEBRUARY 6th, 1990, WITH RESPECT TO THE CONVEYANCE OF A ONE- OR TWO-FAMILY DWELLING, OR A COOPERATIVE APARTMENT OR A CONDOMINIUM UNIT IN A ONE- OR TWO-FAMILY DWELLING, WILL NOT BE ACCEPTED FOR FILING UNLESS ACCOMPANIED BY THIS AFFIDAVIT.

SEE ATTACHED PAGE FOR ADDITIONAL APPLICABLE PROPERTIES

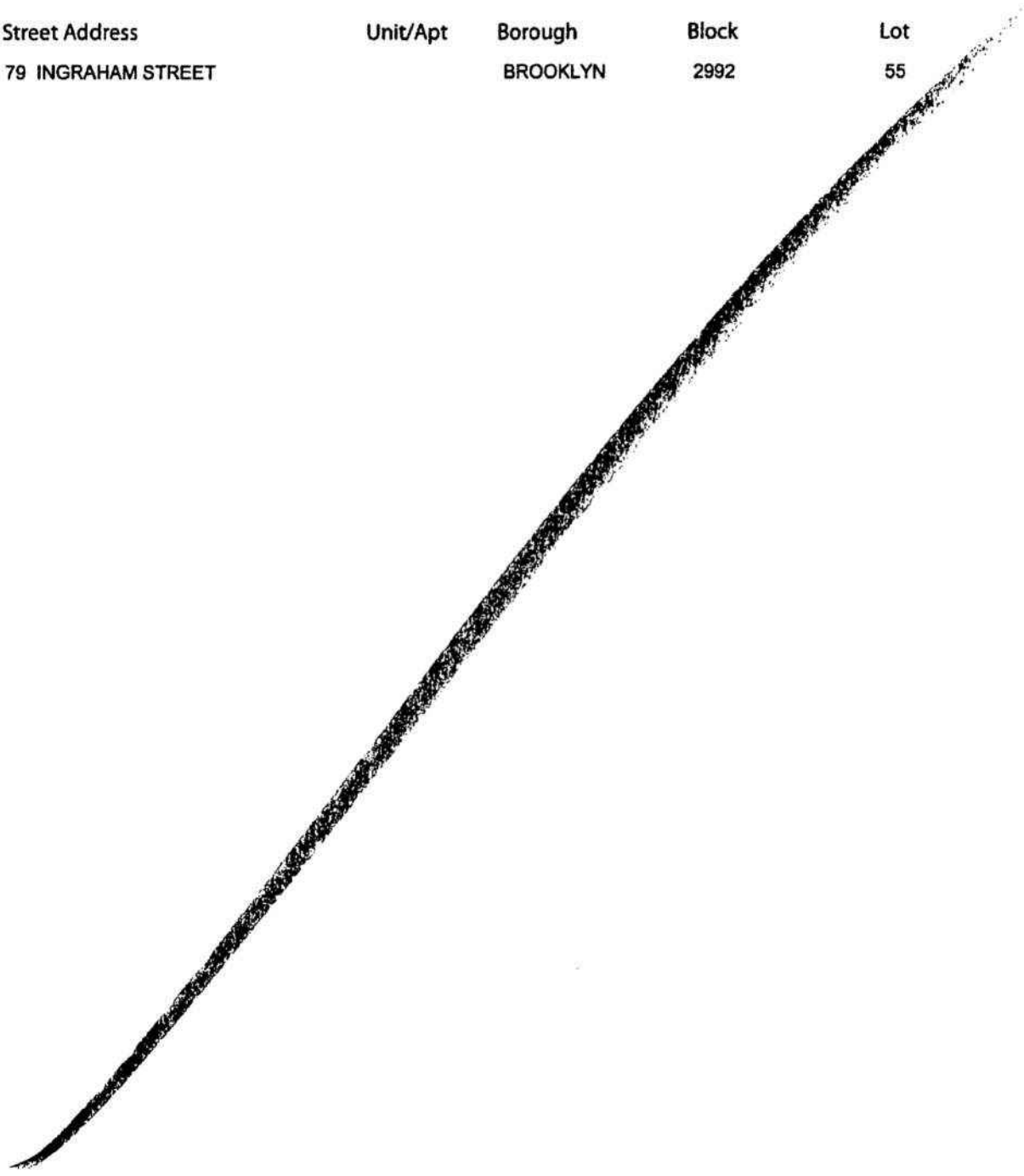
SEAL

2012121300272101

Affidavitt of Compliance with Smoke Detector Requirment by one and Two Family Dwellings

Applicable properties compliant with the Smoke Detector requirement

Street Address	Unit/Apt	Borough	Block	Lot
79 INGRAHAM STREET		BROOKLYN	2992	55



2012121300272101

The City of New York
Department of Environmental Protection
Bureau of Customer Services
59-17 Junction Boulevard
Flushing, NY 11373-5108

Customer Registration Form for Water and Sewer Billing

Property and Owner Information:

(1) Property receiving service: BOROUGH: BROOKLYN BLOCK: 2992 LOT: 21

(2) Property Address: 450 JOHNSON AVENUE, BROOKLYN, NY 11237

(3) Owner's Name: JBC LAND LLC

Additional Name:

Affirmation:

☑ Your water & sewer bills will be sent to the property address shown above.

Customer Billing Information:

Please Note:

A. Water and sewer charges are the legal responsibility of the owner of a property receiving water and/or sewer service. The owner's responsibility to pay such charges is not affected by any lease, license or other arrangement, or any assignment of responsibility for payment of such charges. Water and sewer charges constitute a lien on the property until paid. In addition to legal action against the owner, a failure to pay such charges when due may result in foreclosure of the lien by the City of New York, the property being placed in a lien sale by the City or Service Termination.

B. Original bills for water and/or sewer service will be mailed to the owner, **at the property address or to an alternate mailing address**. DEP will provide a duplicate copy of bills to one other party (such as a managing agent), however, any failure or delay by DEP in providing duplicate copies of bills shall in no way relieve the owner from his/her liability to pay all outstanding water and sewer charges. Contact DEP at (718) 595-7000 during business hours or visit www.nyc.gov/dep to provide us with the other party's information.

Owner's Approval:

The undersigned certifies that he/she/it is the owner of the property receiving service referenced above; that he/she/it has read and understands Paragraphs A & B under the section captioned "Customer Billing Information"; and that the information supplied by the undersigned on this form is true and complete to the best of his/her/its knowledge.

Print Name of Owner: JBC LAND LLC

Signature: Robert C Harder Date (mm/dd/yyyy) 12/13/2012

Name and Title of Person Signing for Owner, if applicable: by ROBERT C HARDER, MANAGING MEMBER

SEE ATTACHED PAGE FOR ADDITIONAL APPLICABLE PROPERTIES

BCS-7CRF-ACRIS REV. 8/08

The City of New York
Department of Environmental Protection
Bureau of Customer Services
59-17 Junction Boulevard
Flushing, NY 11373-5108

Customer Registration Form for Water and Sewer Billing

Borough	Block	Lot	Street	City	State	Zip
BROOKLYN	2992	55	79 INGRAHAM STREET	NY	NY	11237

2012121300272101O1

Property Detail Report

For Property Located At :
418 JOHNSON AVE, BROOKLYN, NY 11237

CoreLogic RealQuest

Owner Information

Owner Name:	**JBC LAND LLC**
Mailing Address:	**450 JOHNSON AVE, BROOKLYN NY 11237-1202 C002**
Vesting Codes:	**/ /**

Location Information

Legal Description:			
County:	**BROOKLYN, NY**	APN:	**02992-0017**
Census Tract / Block:	**453.00 / 1**	Alternate APN:	**02992-00017**
Township-Range-Sect:	**03-00-10**	Subdivision:	
Legal Book/Page:		Map Reference:	**10-03-10 /**
Legal Lot:	**17**	Tract #:	
Legal Block:	**2992**	School District:	**3620580**
Market Area:		School District Name:	**NYC DEPT OF ED**
Neighbor Code:	**30**	Munic/Township:	**WILLIAMSBURG**

Owner Transfer Information

Recording/Sale Date:	**12/17/2012 / 12/13/2012**	Deed Type:	**BARGAIN & SALE DEED**
Sale Price:		1st Mtg Document #:	
Document #:	**492993**		

Last Market Sale Information

Recording/Sale Date:	**12/20/1988 / 11/30/1988**	1st Mtg Amount/Type:	**$400,000 / PRIVATE PARTY**
Sale Price:	**$450,000**	1st Mtg Int. Rate/Type:	**/**
Sale Type:		1st Mtg Document #:	
Document #:	**2320-2036**	2nd Mtg Amount/Type:	**/**
Deed Type:	**DEED (REG)**	2nd Mtg Int. Rate/Type:	**/**
Transfer Document #:		Price Per SqFt:	**$36.00**
New Construction:		Multi/Split Sale:	
Title Company:			
Lender:			
Seller Name:	**DOOGLE ASSOCIATES**		

Prior Sale Information

Prior Rec/Sale Date:	**04/01/1981 /**	Prior Lender:	
Prior Sale Price:		Prior 1st Mtg Amt/Type:	**/**
Prior Doc Number:		Prior 1st Mtg Rate/Type:	**/**
Prior Deed Type:	**DEED (REG)**		

Property Characteristics

Year Built / Eff:	**/ 1931**	Total Rooms/Offices		Garage Area:	
Gross Area:	**12,500**	Total Restrooms:		Garage Capacity:	
Building Area:	**12,500**	Roof Type:		Parking Spaces:	
Tot Adj Area:		Roof Material:		Heat Type:	
Above Grade:		Construction:		Air Cond:	
# of Stories:	**2**	Foundation:		Pool:	
Other Improvements:	**Building Permit**	Exterior wall:		Quality:	
		Basement Area:		Condition:	

Site Information

Zoning:	**M1-2**	Acres:	**0.23**	County Use:	**LIGHT MANUFACTURING (F5)**
Lot Area:	**10,000**	Lot Width/Depth:	**100 x 100**	State Use:	
Land Use:	**LIGHT INDUSTRIAL**	Commercial Units:	**3**	Water Type:	
Site Influence:		Sewer Type:		Building Class:	**F9**

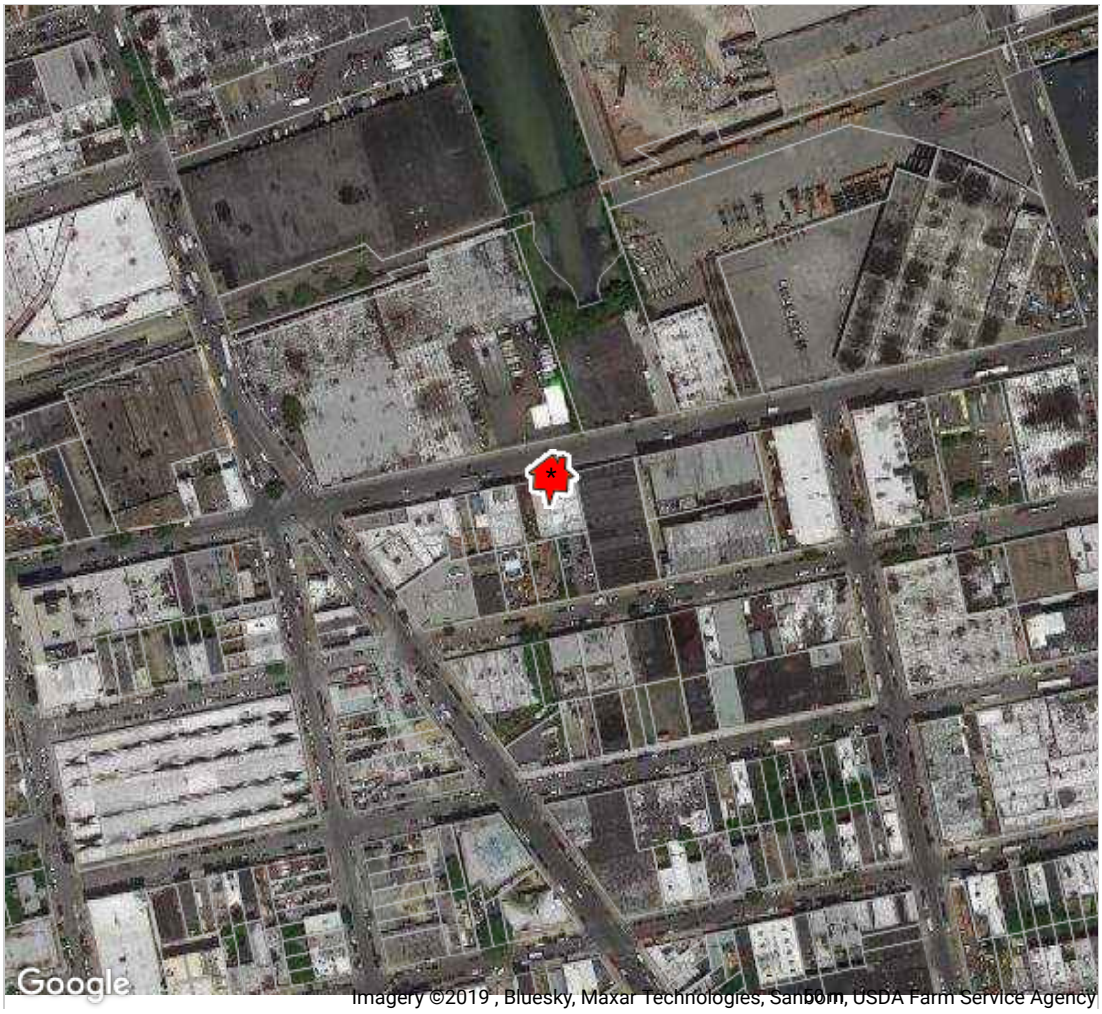
Tax Information

Total Value:	**$1,132,000**	Assessed Year:	**2018**	Property Tax:	**$45,163.92**
Land Value:	**$350,000**	Improved %:	**69%**	Tax Area:	**4**
Improvement Value:	**$782,000**	Tax Year:	**2018**	Tax Exemption:	
Total Taxable Value:	**$429,560**				

Street Map Plus Report

For Property Located At

418 JOHNSON AVE, BROOKLYN, NY 11237



Property Detail Report

For Property Located At :
450 JOHNSON AVE, BROOKLYN, NY 11237-1202

Owner Information

Owner Name:	**JBC LAND LLC**
Mailing Address:	**450 JOHNSON AVE, BROOKLYN NY 11237-1202 C002**
Vesting Codes:	**/ /**

Location Information

Legal Description:			
County:	**BROOKLYN, NY**	APN:	**02992-0021**
Census Tract / Block:	**453.00 / 1**	Alternate APN:	**02992-00021**
Township-Range-Sect:	**03-00-10**	Subdivision:	
Legal Book/Page:		Map Reference:	**10-03-10 /**
Legal Lot:	**21**	Tract #:	
Legal Block:	**2992**	School District:	**3620580**
Market Area:		School District Name:	**NYC DEPT OF ED**
Neighbor Code:	**30**	Munic/Township:	**WILLIAMSBURG**

Owner Transfer Information

Recording/Sale Date:	**12/17/2012 / 12/13/2012**	Deed Type:	**BARGAIN & SALE DEED**
Sale Price:		1st Mtg Document #:	
Document #:	**492988**		

Last Market Sale Information

Recording/Sale Date:	**02/22/2006 / 01/23/2006**	1st Mtg Amount/Type:	**/**
Sale Price:	**$1**	1st Mtg Int. Rate/Type:	**/**
Sale Type:		1st Mtg Document #:	
Document #:	**102209**	2nd Mtg Amount/Type:	**/**
Deed Type:	**DEED (REG)**	2nd Mtg Int. Rate/Type:	**/**
Transfer Document #:		Price Per SqFt:	**$0.00**
New Construction:		Multi/Split Sale:	**MULTIPLE**
Title Company:			
Lender:			
Seller Name:	**NEW YORK CITY INDUSTRIAL DEVEL**		

Prior Sale Information

Prior Rec/Sale Date:	**07/08/1987 /**	Prior Lender:	
Prior Sale Price:		Prior 1st Mtg Amt/Type:	**/**
Prior Doc Number:	**2054-15**	Prior 1st Mtg Rate/Type:	**/**
Prior Deed Type:	**DEED (REG)**		

Property Characteristics

Year Built / Eff:	**/ 1931**	Total Rooms/Offices		Garage Area:	
Gross Area:	**20,000**	Total Restrooms:		Garage Capacity:	
Building Area:	**20,000**	Roof Type:		Parking Spaces:	
Tot Adj Area:		Roof Material:		Heat Type:	
Above Grade:		Construction:		Air Cond:	
# of Stories:	**1**	Foundation:		Pool:	
Other Improvements:	**Building Permit**	Exterior wall:		Quality:	
		Basement Area:		Condition:	

Site Information

Zoning:	**M1-2**	Acres:	**0.46**	County Use:	**INDUST SEMI-FIREPROOF (F4)**
Lot Area:	**20,000**	Lot Width/Depth:	**100 x 200**	State Use:	
Land Use:	**INDUSTRIAL (NEC)**	Commercial Units:	**1**	Water Type:	
Site Influence:		Sewer Type:		Building Class:	**F4**

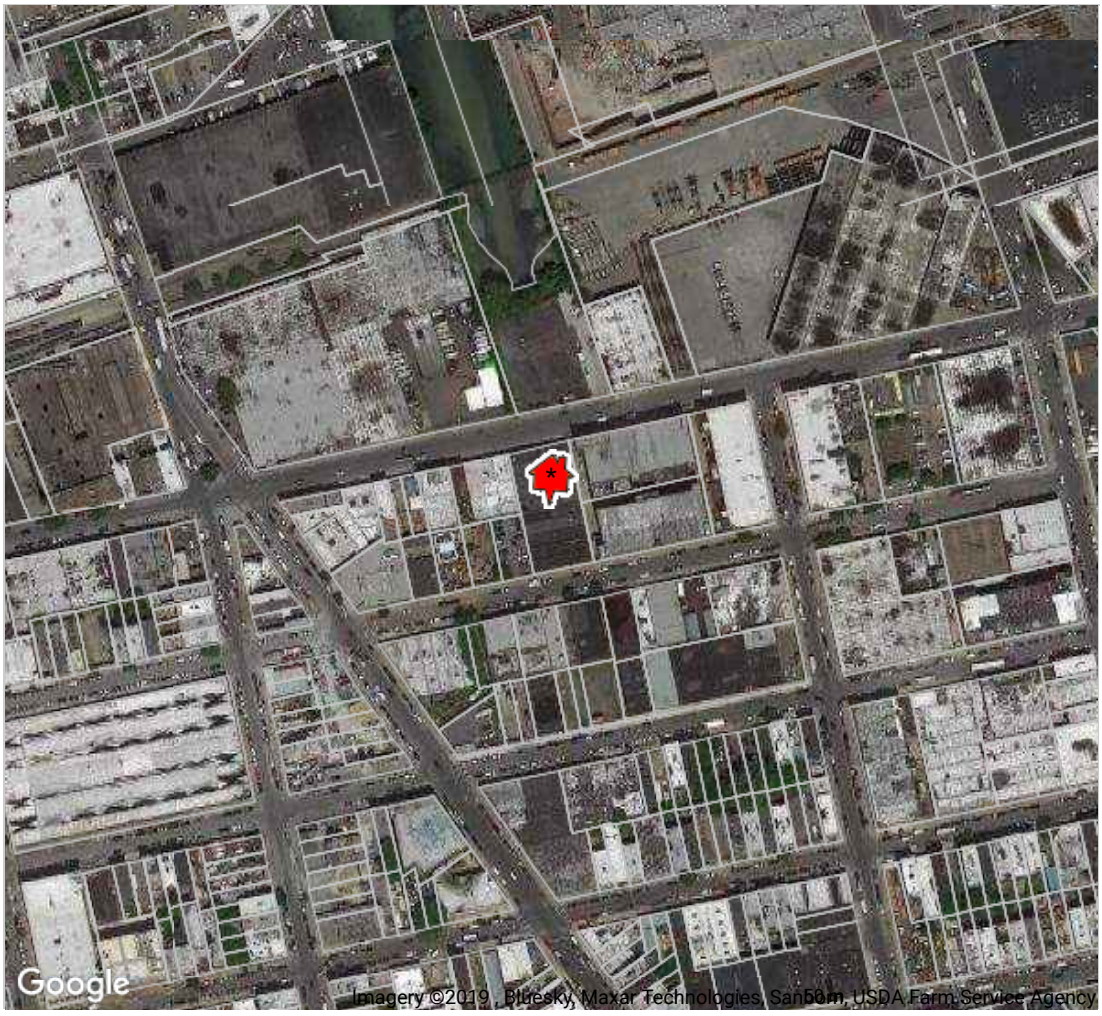
Tax Information

Total Value:	**$1,907,000**	Assessed Year:	**2018**	Property Tax:	**$73,260.48**
Land Value:	**$700,000**	Improved %:	**63%**	Tax Area:	**4**
Improvement Value:	**$1,207,000**	Tax Year:	**2018**	Tax Exemption:	
Total Taxable Value:	**$696,790**				

Street Map Plus Report

For Property Located At

450 JOHNSON AVE, BROOKLYN, NY 11237-1202



ATTACHMENT E5 – SELECTED PORTIONS OF PERTINENT ENVIRONMENTAL REPORTS (ON AND OFFSITE PROPERTIES)

A- **HYDROTECH MAY 2019 PHASE I ESA, 440-450 JOHNSON AVE & 79 INGRAHAM ST**

B- **SEP 2017 SITE MANAGEMENT PLAN (88 INGRAHAM RD, POPULAR HAND LAUNDRY SITE)**

C- **JUL 2017 FINAL ENGINEERING REPORT (88 INGRAHAM RD, POPULAR HAND LAUNDRY SITE)**

D- **FEB 2015, SITE CHARACTERIZATION REPORT (INGRAHAM STREET SIDWALK PLUME TRACKDOWN)**

HydroTech Environmental
ENGINEERING AND GEOLOGY, DPC

NYC Office
15 Ocean Avenue, Suite 2B
Brooklyn, New York 11225
T (718) 636-0800 ; F (718) 636-0900

Long Island Office
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Hauppauge, New York 11788
T (631) 462-5866 ; F (631) 462-5877

WWW.HYDROTECHENVIRONMENTAL.COM

Attachment E5 a
Cover Pages & Exec Sum
Hydrotech PhIESA, 450 Johnson Ave
May 2019

Phase I Environmental Site Assessment Report

440-450 Johnson Avenue & 79 Ingraham Street
Brooklyn, NY

Prepared For:

Mr. Robert Harper
JBC Land LLC
450 Johnson Avenue
Brooklyn NY 11237

May 21, 2019

HydroTech Job No. 190053

Phase I Environmental Site Assessment Report

440-450 Johnson Avenue & 79 Ingraham Street, Brooklyn, NY

May 21, 2019

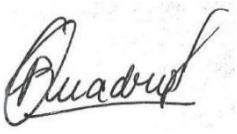
HydroTech Environmental Engineering and Geology, DPC appreciates the opportunity to work for Mr. Robert Harper at the property located at 440-450 Johnson Avenue and 79 Ingraham Street in Brooklyn, New York.

Should you require any additional information or have any comments regarding the contents of this report, please feel free to contact our office at your convenience.

We declare that, to the best of my professional knowledge and belief, HydroTech personnel meet the definition of an environmental professional as defined in §312.10 of 40 C.F.R. Part 312, and we have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the Subject Property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 C.F.R. Part 312.

Very Truly Yours,

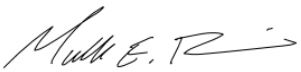
HydroTech Environmental Engineering and Geology, DPC

Prepared By: 

X_____

Roselina Quadros

Project Manager

Approved By: 

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Mark E. Robbins, PG

Principal

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1.0 EXECUTIVE SUMMARY

HydroTech Environmental Engineering and Geology, DPC. (HydroTech) has performed a Phase I Environmental Site Assessment (Phase I ESA) at the Subject Property located at 440-450 Johnson Avenue and 79 Ingraham Street New York. The Phase I ESA was performed to meet or surpass the American Standard of Testing Materials Standard for Phase I Environmental Site Assessments E 1527-13. The purpose of the assessment was to characterize the environmental quality of the Subject Property through the identification of Recognized Environmental Conditions. All work was performed under the supervision of a HydroTech Project Manager and under the guidance of a HydroTech geologist.

The results of the Phase I Environmental Site Assessment are contained in this report. The Phase I ESA has identified the following Recognized Environmental Conditions.

- The suspect presence of an underground gasoline tank at 450 Johnson Avenue (§4.0);
- The historical use as a metal foundry and current use as heavy-duty machinery for envelope production at the Subject Property at 440-450 Johnson Avenue (§5.0);
- The presence of a Potential Vapor Encroachment Condition (§5.0).
- The presence of 11 groundwater monitoring wells at the Subject Property and six (6) groundwater monitoring wells at the adjacent properties (§6.0).

The following Non-Scope Consideration was identified:

- The suspect presence of lead-based paint (§7.0).

No effort has been made to perform any investigation beyond what is included in this Report. The observations and conclusions included herein summarize the results of the Phase I Environmental Site Assessment up to the date of the fieldwork and the date of this Report.

The following sections provide the details and specific information pertaining to the various components of the Phase I Environmental Site Assessment.

Attachment E5 b
Title Pgs, Exec Sum, & Figures from
Sep 2017 Site Management Plan,
88 Ingraham Rd Site (Popular Hand Laundry - upgradient site)

Popular Hand Laundry

KINGS COUNTY

BROOKLYN, NEW YORK

SITE MANAGEMENT PLAN

NYSDEC Site Number: V00170

Prepared for:

88 Ingraham Realty Corp.

7700 Bella Verde Way

Delray Beach, FL 33446

Prepared by:

EnviroTrac Engineering PE PC

5 Old Dock Road

Yaphank, New York 11980

(631) 924-3001

Revisions to Final Approved Site Management Plan:

Revision No.	Date Submitted	Summary of Revision	NYSDEC Approval Date

SEPTEMBER 2017

EnviroTrac
Environmental Services

CERTIFICATION STATEMENT

I DALE KONAS certify that I am currently a NYS registered professional engineer as in defined in 6 NYCRR Part 375 and that this Site Management Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10).

_____ P.E.

9/21/17 DATE

EnviroTrac

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POPULAR HAND LAUNDRY

KINGS COUNTY

BROOKLYN, NEW YORK

SITE MANAGEMENT PLAN

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Appendix I - SSDS O&M Manual

List of Acronyms

AS	Air Sparging
ASP	Analytical Services Protocol
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CAMP	Community Air Monitoring Plan
C/D	Construction and Demolition
CFR	Code of Federal Regulation
CLP	Contract Laboratory Program
COC	Certificate of Completion
CO2	Carbon Dioxide
CP	Commissioner Policy
DER	Division of Environmental Remediation
EC	Engineering Control
ECL	Environmental Conservation Law
ELAP	Environmental Laboratory Approval Program
ERP	Environmental Restoration Program
GHG	Green House Gas
GWE&T	Groundwater Extraction and Treatment
HASP	Health and Safety Plan
IC	Institutional Control
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYCRR	New York Codes, Rules and Regulations
O&M	Operations and Maintenance
OM&M	Operation, Maintenance and Monitoring
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PID	Photoionization Detector
PRP	Potentially Responsible Party
PRR	Periodic Review Report
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
RCRA	Resource Conservation and Recovery Act
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RP	Remedial Party
SAC	State Assistance Contract
SCG	Standards, Criteria and Guidelines

SCO	Soil Cleanup Objective
SMP	Soil Management Plan
SOP	Standard Operating Procedures
SOW	Statement of Work
SPDES	State Pollutant Discharge Elimination System
SSD	Sub-slab Depressurization
SVE	Soil Vapor Extraction
SVI	Soil Vapor Intrusion
SVMS	Soil Vapor Mitigation System
TAL	Target Analyte List
TCL	Target Compound List
TCLP	Toxicity Characteristic Leachate Procedure
USEPA	United States Environmental Protection Agency
UST	Underground Storage Tank
VCA	Voluntary Cleanup Agreement
VCP	Voluntary Cleanup Program

ES EXECUTIVE SUMMARY

The following provides a brief summary of the controls implemented for the Site, as well as the inspections, monitoring, maintenance and reporting activities required by this Site Management Plan:

Site Identification: V00170, Popular Hand Laundry, 88 Ingraham Street, Brooklyn, NY

Institutional Controls:

1. The property subject to this Declaration of Covenants and Restrictions is as shown on Figure 1.
2. Unless prior written approval by the New York State Department of Environmental Conservation (NYSDEC) or, if the NYSDEC shall no longer exist, any New York State agency or agencies subsequently created to protect the environment of the State and the health of the State's citizens, hereinafter referred to as "the Relevant Agency," is first obtained, where contamination remains at the property subject to the provisions of the Site Management Plan (SMP), there shall be no construction, use or occupancy of the property that results in the disturbance or excavation of the property which threatens the integrity of the engineering controls (ECs) or which results in unacceptable human exposure to contaminated soils.
3. The owner of the property shall not disturb, remove, or otherwise interfere with the installation, use, operation, and maintenance of the ECs required for the remedy, which are described in the SMP, unless in each instance the owner first obtains a written waiver of such prohibition from the NYSDEC or relevant agency.
4. The owner of the property shall prohibit the property from ever being used for purposes other than for Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) or Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv) without the express written waiver of such prohibition by the NYSDEC or relevant agency.
5. The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Kings County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain approval to do so from the NYSDEC.
6. The owner of the property shall provide access to and cooperate with the Responsible Party (RP) to allow the RP to arrange for a periodic certification, prepared and submitted by a professional engineer or environmental professional acceptable to the NYSDEC or relevant agency, which will certify that the institutional controls (ICs) and ECs put in place are unchanged from the previous certification, comply with the SMP, and have not been impaired.

7. The owner of the property and the RP shall continue in full force and effect any ICs and ECs required for the remedy and maintain such controls, unless the owner or the RP first obtains permission to discontinue such controls from the NYSDEC or relevant agency, in compliance with the approved SMP, which is incorporated and made enforceable hereto, subject to modifications as approved by the NYSDEC or relevant agency.
8. The Declaration is and shall be deemed a covenant that shall run with the land and shall be binding upon all future owners of the property, and shall provide that the owner and its successors and assigns consent to enforcement by the NYSDEC or relevant agency of the prohibitions and restrictions that the Voluntary Cleanup Agreement requires to be recorded, and hereby covenant not to contest the authority of the NYSDEC or relevant agency to seek enforcement.
9. Any deed of conveyance of the property, or any portion thereof, shall recite, unless the NYSDEC or relevant agency has consented to the termination of such covenants and restrictions that said conveyance is subject to the Declaration of Covenants and Restrictions.
10. A sub-slab depressurization system (SSDS) installed at the Site will be certified and inspected on an annual basis.

Engineering Controls:

1. Cover system
2. Sub-Slab depressurization system

Inspections:	Frequency:
1. Cover inspection	Annually
Monitoring:	
1. SSDS Wells (SV-5 and SV-6)	Annually
2. Groundwater Monitoring Wells (NW-2@20', NW-2@30', and MW-2) Annually in 2017 and 2018	Annually
Maintenance:	
1. SSDS Blower maintenance	Annually
Reporting:	
1. Periodic Review Report	Annually
2. Groundwater Monitoring Report	Annually

Further descriptions of the above requirements are provided in detail in the latter sections of this SMP.

north

THREE STORY
BRICK BUILDING

ONE STORY BRICK
BUILDING

SIDEWALK

INGRAHAM STREET

SIDEWALK

E-VAULT

F.H.

ONE STORY BRICK
BUILDING

TWO STORY
BUILDING

GARAGE
(1-STORY)

ONE STORY FRAME
AND CONCRETE
BUILDING

TWO STORY
BUILDING

PARKING AREA

LEGEND:

PROPERTY BOUNDARY

F.H. FIRE HYDRANT

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POPULAR HAND LAUNDRY
88 INGRAHAM STREET
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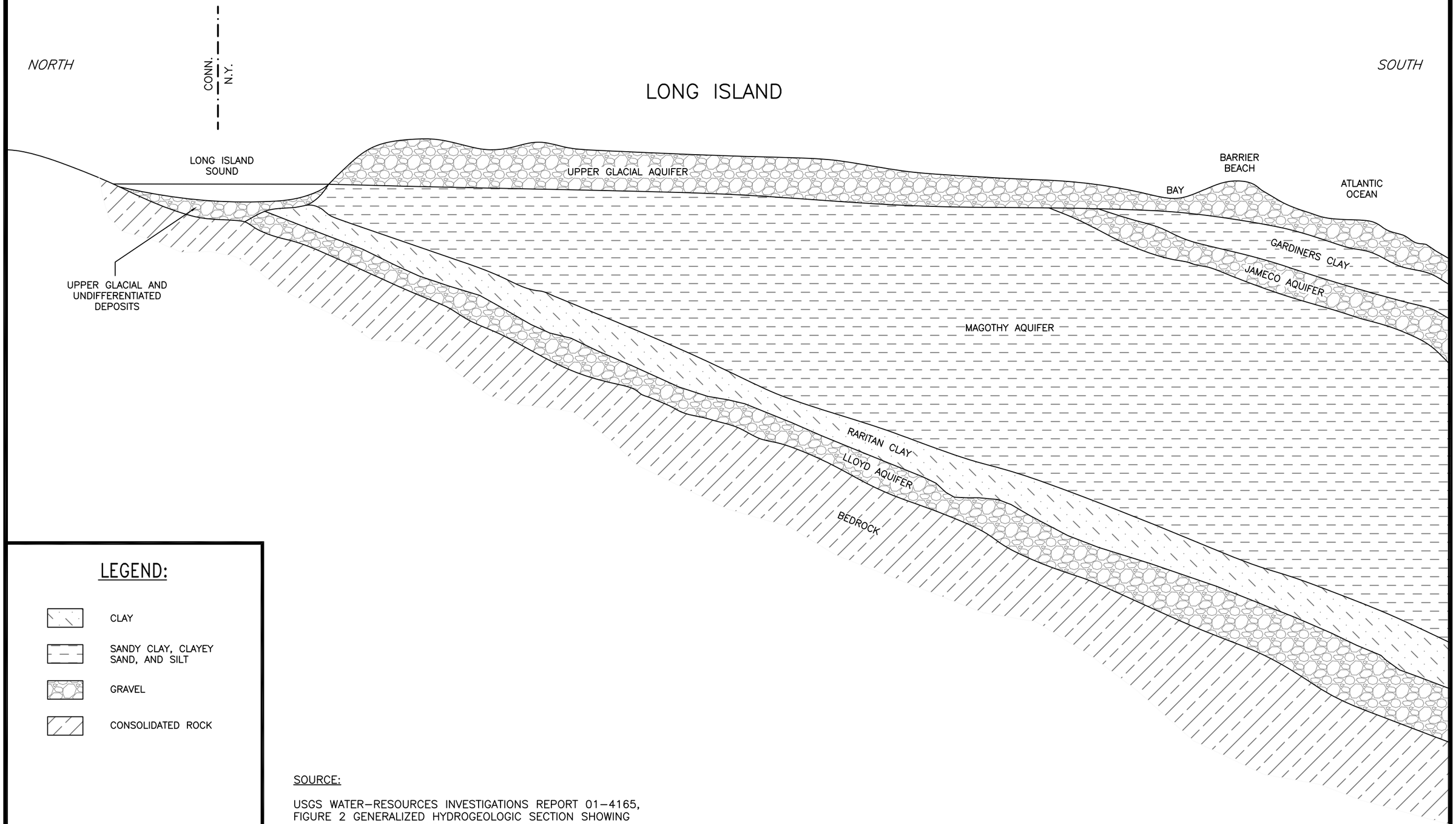
SITE PLAN

FIGURE #
1



LEGEND:

- CLAY
- SANDY CLAY, CLAYEY SAND, AND SILT
- GRAVEL
- CONSOLIDATED ROCK

SOURCE:

USGS WATER–RESOURCES INVESTIGATIONS REPORT 01–4165, FIGURE 2 GENERALIZED HYDROGEOLOGIC SECTION SHOWING MAJOR AQUIFERS AND CONFINING UNITS ON LONG ISLAND, N.Y.

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DRAWING IS NOT TO SCALE

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GENERALIZED HYDROGEOLOGIC CROSS–SECTION SHOWING LONG ISLAND AQUIFERS

FIGURE # 2

north

PARKING AREA

ONE STORY
BRICK BUILDING

SIDEWALK

MW-3

INGRAHAM STREET

F.H.

NW-1

PARKING AREA

SIDEWALK

E-VAULT

NW-2

MW-2

ONE STORY
BRICK BUILDING

G-2

AS-3

SV-6/MW-6

SV-5/MW-5

(2-STORY)

REGIONAL
GROUNDWATER
FLOW DIRECTION

AS-4

MW-4

GARAGE
(1-STORY)

LEGEND:

- PROPERTY BOUNDARY
- F.H. FIRE HYDRANT
- MONITORING WELL

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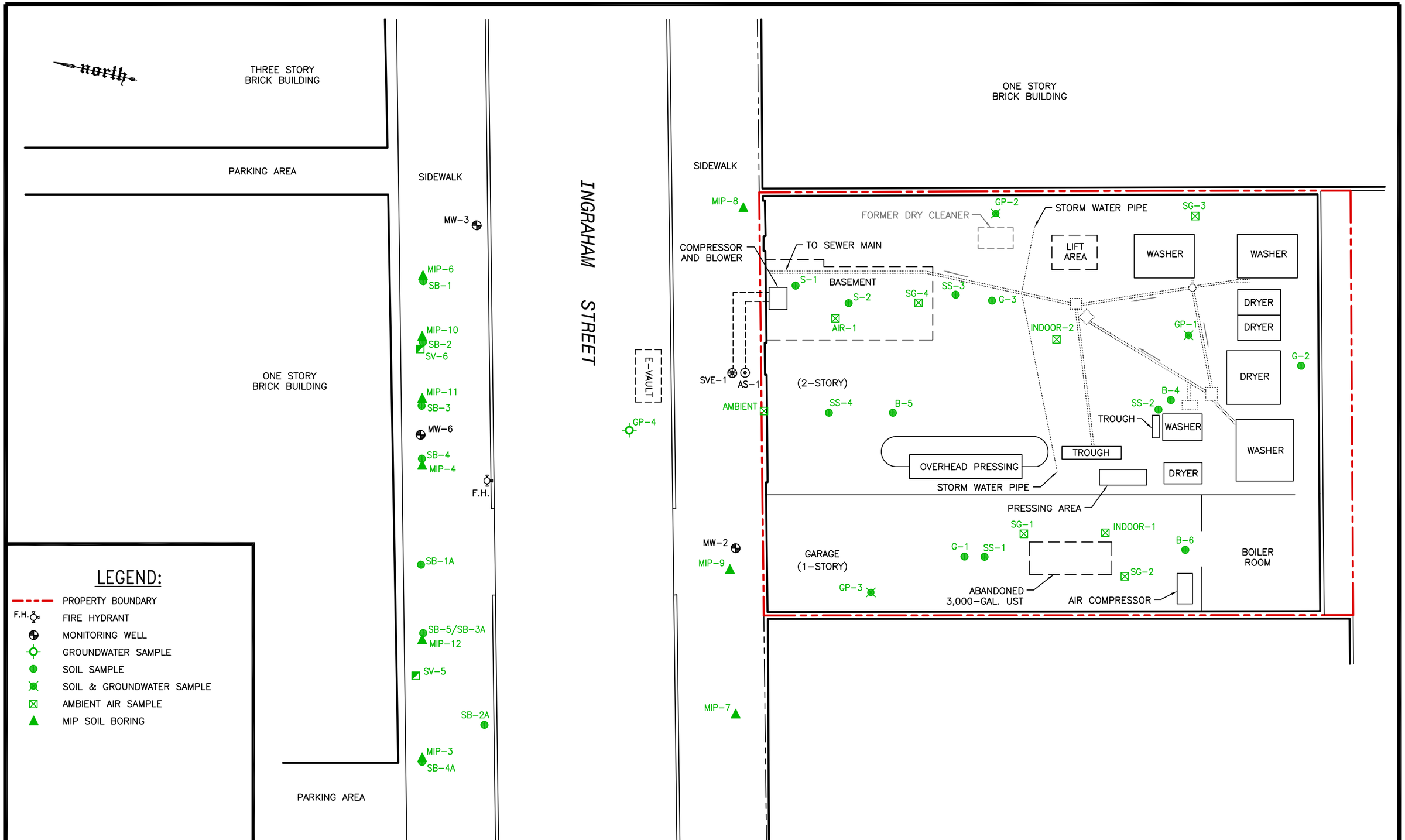
REGIONAL GROUNDWATER FLOW DIRECTION

FIGURE #
3



LEGEND:

- PROPERTY BOUNDARY
- F.H. FIRE HYDRANT
- MONITORING WELL
- GROUNDWATER SAMPLE
- SOIL SAMPLE
- SOIL & GROUNDWATER SAMPLE
- AMBIENT AIR SAMPLE
- MIP SOIL BORING

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POPULAR HAND LAUNDRY
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HISTORICAL SAMPLE LOCATIONS AND HISTORICAL SITE LAYOUT

FIGURE # 4

north

THREE STORY
BRICK BUILDING

PARKING AREA

ONE STORY
BRICK BUILDING

SIDEWALK

MW-3

F.H.

NW-1

INGRAHAM STREET

SIDEWALK

SVE/AS
REMEDIATION
SHED

E-VAULT

OA-1

NW-2

ONE STORY
BRICK BUILDING

VP-2/IA-2

G-2

VP-1/IA-1

AS-3

SV-6/MW-6

SV-5/MW-5

(2-STORY)

AS-4

MW-2

VP-4

MW-4

GARAGE
(1-STORY)

VP-5/IA-5/IA-5D

VP-3/IA-3

PARKING AREA

LEGEND:

- PROPERTY BOUNDARY
- F.H. FIRE HYDRANT
- MONITORING WELL
- GROUNDWATER SAMPLE
- VAPOR PROBE/INDOOR AIR/ OUTDOOR AIR SAMPLE

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RECENT SAMPLE LOCATIONS

FIGURE #
5

north

THREE STORY
BRICK BUILDING

PARKING AREA

ONE STORY
BRICK BUILDING

SIDEWALK

SB-1

SB-2

SB-3

SB-4

F.H.

SB-1A

SB-5/SB-3A

SB-2A

SB-4A

PARKING AREA

INGRAHAM STREET

E-VAULT

GP-4

SIDEWALK

SAMPLE ID:	S-1(6'-7')	NYSDEC
DATE SAMPLED:	1996-1997	UUSCO
COMPOUND	RESULT	
DCE	**9,500**	**250**
VC	**140**	**20**

SAMPLE ID:	GP-2(0'-2')	NYSDEC
DATE SAMPLED:	1996-1997	UUSCO
COMPOUND	RESULT	
PCE	**11,000**	**1,300**

ONE STORY
BRICK BUILDING

GP-2

FORMER DRY CLEANER

STORM WATER PIPE

COMPRESSOR
AND BLOWER

TO SEWER MAIN

LIFT
AREA

WASHER

WASHER

S-1

BASEMENT

SS-3

G-3

S-2

DRYER

DRYER

GP-1

G-2

DRYER

SVE-1

AS-1

(2-STORY)

SS-4

B-5

B-4

SS-2

TROUGH

WASHER

WASHER

OVERHEAD PRESSING

TROUGH

DRYER

STORM WATER PIPE

PRESSING AREA

GARAGE
(1-STORY)

G-1

SS-1

B-6

BOILER
ROOM

GP-3

ABANDONED
3,000-GAL. UST

AIR COMPRESSOR

SAMPLE ID:	G-1(0'-4')	G-1(4'-8')	G-1(8'-12')	NYSDEC
DATE SAMPLED:	12/2005	12/2005	12/2005	UUSCO
COMPOUND	RESULT	RESULT	RESULT	
DCE	**325**	52	84	**250**
PCE	**19,400**	26	74	**1,300**
TCE	296	17	19	**470**
VC	2.87	1.17	1.17	**20**

SAMPLE ID:	B-4(0'-4')	B-4(4'-8')	B-4(8'-12')	NYSDEC
DATE SAMPLED:	12/2005	12/2005	12/2005	UUSCO
COMPOUND	RESULT	RESULT	RESULT	
DCE	32.9	6	4	**250**
PCE	**5,730**	59	46	**1,300**
TCE	249	11	4	**470**
VC	**32.9**	1.12	1.12	**20**

LEGEND:

- PROPERTY BOUNDARY
- F.H. FIRE HYDRANT
- SOIL SAMPLE
- SOIL & GROUNDWATER SAMPLE
- DCE CIS-1,2-DICHLOROETHENE
- PCE TETRACHLOROETHYLENE
- TCE TRICHLOROETHYLENE
- VC VINYL CHLORIDE
- CVOCs CHLORINATED VOLATILE ORGANIC COMPOUNDS
- BOLDED VALUE EXCEEDS NYSDEC UNRESTRICTED USE SOIL CLEANUP OBJECTIVES (UUSCOs)
- ALL RESULTS GIVEN IN µg/kg

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POPULAR HAND LAUNDRY
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HISTORICAL SOIL SAMPLE TARGET CVOC RESULTS ABOVE NYSDEC UUSCOs

FIGURE #
6

north

WELL ID:	MW-3	NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	12/3/2015	
COMPOUND	RESULT	
DCE	**250**	**5**

WELL ID:	NW-2(20')	NW-2(30')	NW-2(40')	NW-2(50')	NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	9/7/2016	9/7/2016	9/7/2016	9/7/2016	
COMPOUND	RESULT	RESULT	RESULT	RESULT	
DCE	**120**	**190**	**25**	**20**	**5**
PCE	**210 D**	**430 D**	ND	ND	**5**
TCE	**130**	**250 D**	ND	ND	**5**
VC	**17**	**30**	**96**	ND	**2**
	5/10/2017	5/10/2017			
DCE	**199**	**137**			
PCE	**628**	**189**			
TCE	**331**	**154**			
VC	**26.1**	**5.8**			

WELL ID:	NW-1(20')	NW-1(30')	NW-1(40')	NW-1(50')	NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	12/3/2015	12/3/2015	12/3/2015	12/3/2015	
COMPOUND	RESULT	RESULT	RESULT	RESULT	
DCE	**3,000**	**4,300**	**5,800**	**4,400**	**5**
PCE	**760**	**860**	**2,800**	**490**	**5**
TCE	**2,300**	**1,400**	**3,600**	**1,200**	**5**
VC	**2,500**	**1,600**	**2,600**	**1,900**	**2**

LEGEND:

----	PROPERTY BOUNDARY
F.H.	FIRE HYDRANT
⊕	MONITORING WELL
DCE	CIS-1,2-DICHLOROETHENE
PCE	TETRACHLOROETHYLENE
TCE	TRICHLOROETHYLENE
VC	VINYL CHLORIDE
S	RECOVERY OUTSIDE OF CONTROL LIMITS FOR THIS ANALYTE
D	RESULTS FOR DILUTION
ND	NOT DETECTED
CVOCs	CHLORINATED VOLATILE ORGANIC COMPOUNDS
	ALL RESULTS GIVEN IN µg/L

WELL ID:	SV-6	NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	12/3/2015	
COMPOUND	RESULT	
DCE	**19**	**5**

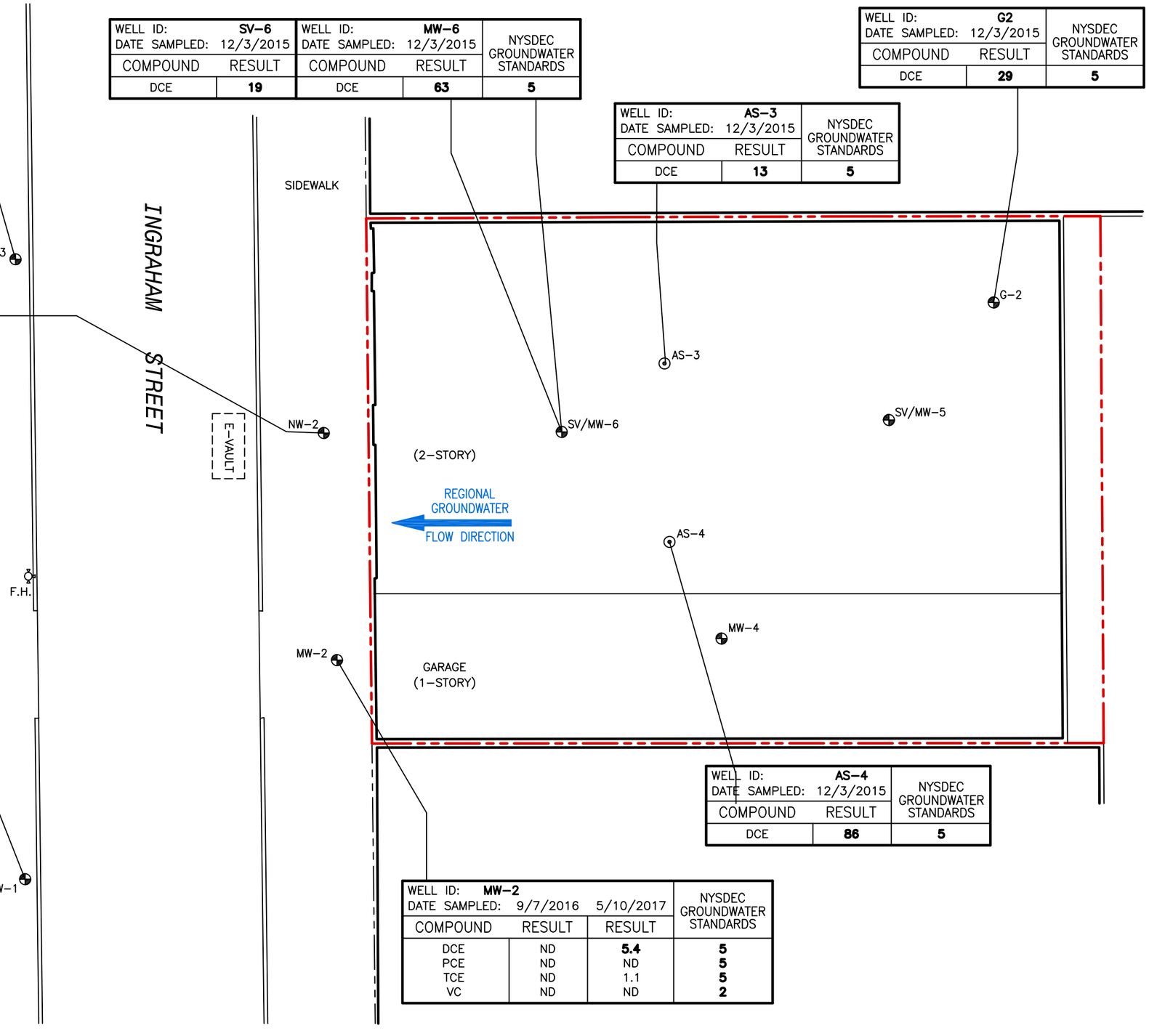
WELL ID:	MW-6	NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	12/3/2015	
COMPOUND	RESULT	
DCE	**63**	**5**

WELL ID:	G2	NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	12/3/2015	
COMPOUND	RESULT	
DCE	**29**	**5**

WELL ID:	AS-3	NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	12/3/2015	
COMPOUND	RESULT	
DCE	**13**	**5**

WELL ID:	AS-4	NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	12/3/2015	
COMPOUND	RESULT	
DCE	**86**	**5**

WELL ID:	MW-2		NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	9/7/2016	5/10/2017	
COMPOUND	RESULT	RESULT	
DCE	ND	**5.4**	**5**
PCE	ND	ND	**5**
TCE	ND	1.1	**5**
VC	ND	ND	**2**



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POPULAR HAND LAUNDRY
88 INGRAHAM STREET
BROOKLYN, NEW YORK

GROUNDWATER SAMPLE RESULTS
ABOVE NYSDEC GROUNDWATER STANDARDS

FIGURE # 7

north

SAMPLE ID:	SG-4(0'-8')
DATE SAMPLED:	10/21/2004
COMPOUND	RESULT
DCE	265
PCE	427
TCE	123
VC	0.87

SAMPLE ID:	SS-3
DATE SAMPLED:	6/22/2006
COMPOUND	RESULT
DCE	1,390
PCE	43,000
TCE	2,880

SAMPLE ID:	INDOOR-2
DATE SAMPLED:	6/22/2006
COMPOUND	RESULT
DCE	1.4
PCE	12
TCE	1

SAMPLE ID:	SG-3(0'-8')
DATE SAMPLED:	10/21/2004
COMPOUND	RESULT
DCE	14
PCE	5,358
TCE	81
VC	8.94

SAMPLE ID:	VP-2	IA-2	
DATE SAMPLED:	2/10/2016	2/10/2016	5/10/2017
COMPOUND	RESULT	COMPOUND	RESULT	RESULT
DCE	ND	DCE	ND	ND
PCE	8.14 D	PCE	16.1	ND
TCE	ND	TCE	ND	ND

SAMPLE ID:	OA-1	
DATE SAMPLED:	2/10/2016	5/10/2017
COMPOUND	RESULT	RESULT
DCE	ND	ND
PCE	ND	ND
TCE	ND	ND

SAMPLE ID:	VP-1
DATE SAMPLED:	2/10/2016
COMPOUND	RESULT
DCE	55.7 D
PCE	1,010 D
TCE	411 DcS

SAMPLE ID:	IA-1	
DATE SAMPLED:	2/10/2016	5/10/2017
COMPOUND	RESULT	RESULT
DCE	ND	ND
PCE	10.7	ND
TCE	7.52 cS	ND

SAMPLE ID:	AMBIENT
DATE SAMPLED:	6/22/2006
COMPOUND	RESULT
DCE	0.63 J
PCE	8
TCE	0.75 J

SAMPLE ID:	SS-4
DATE SAMPLED:	6/22/2006
COMPOUND	RESULT
PCE	1,270
TCE	44

SAMPLE ID:	SS-2
DATE SAMPLED:	6/22/2006
COMPOUND	RESULT
DCE	16,900
PCE	572,000
TCE	37,100

SAMPLE ID:	SS-1
DATE SAMPLED:	6/22/2006
COMPOUND	RESULT
DCE	28,200
PCE	75,300
TCE	45,200

SAMPLE ID:	SG-1(0'-8')
DATE SAMPLED:	10/21/2004
COMPOUND	RESULT
DCE	2,260
PCE	6,104
TCE	2,526
VC	46

SAMPLE ID:	SG-2(0'-8')
DATE SAMPLED:	10/21/2004
COMPOUND	RESULT
DCE	1,189
PCE	3,459
TCE	18.27
VC	28

SAMPLE ID:	VP-5	IA-5	
DATE SAMPLED:	2/10/2016	2/10/2016	5/10/2017
COMPOUND	RESULT	COMPOUND	RESULT	RESULT
DCE	ND	DCE	ND	ND
PCE	ND	PCE	ND	ND
TCE	ND	TCE	ND	ND

SAMPLE ID:	INDOOR-1
DATE SAMPLED:	6/22/2006
COMPOUND	RESULT
DCE	2
PCE	29
TCE	3

SAMPLE ID:	VP-3	IA-3	
DATE SAMPLED:	2/10/2016	2/10/2016	5/10/2017
COMPOUND	RESULT	COMPOUND	RESULT	RESULT
DCE	132 D	DCE	ND	ND
PCE	63.8 D	PCE	ND	ND
TCE	57 DcS	TCE	ND	ND

INGRAHAM ST.

SIDEWALK

E-VAULT

(2-STORY)

GARAGE (1-STORY)

SG-3 VP-2/IA-2 OA-1 SG-4 SS-3 AIR-1 VP-1/IA-1 INDOOR-2 AMBIENT SS-4 SS-2 VP-4 SG-1 INDOOR-1 SS-1 VP-5/IA-5/IA-5D SG-2 VP-3/IA-3

LEGEND:

- PROPERTY BOUNDARY
- SUB-SLAB SAMPLE
- VAPOR PROBE/INDOOR AIR/ OUTDOOR AIR SAMPLE
- AMBIENT AIR SAMPLE
- DCE CIS-1,2-DICHLOROETHENE
- PCE TETRACHLOROETHYLENE
- TCE TRICHLOROETHYLENE
- VC VINYL CHLORIDE
- J ESTIMATED VALUE
- c,S ESTIMATED VALUE
- D RESULTS FOR DILUTION
- ND NOT DETECTED
- CVOCs CHLORINATED VOLATILE ORGANIC COMPOUNDS

ALL RESULTS GIVEN IN µg/m3

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POPULAR HAND LAUNDRY
88 INGRAHAM STREET
BROOKLYN, NEW YORK

HISTORICAL AND RECENT SOIL VAPOR SAMPLE AND INDOOR/AMBIENT AIR RESULTS

FIGURE # 8

north

THREE STORY
BRICK BUILDING

ONE STORY BRICK
BUILDING

SIDEWALK

INGRAHAM STREET

E-VAULT

F.H.

SIDEWALK

ONE STORY BRICK
BUILDING

TWO STORY
BUILDING

GARAGE
(1-STORY)

ONE STORY FRAME
AND CONCRETE
BUILDING

TWO STORY
BUILDING

PARKING AREA

LEGEND:

- PROPERTY BOUNDARY
- F.H. FIRE HYDRANT
- MONITORING WELL

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POPULAR HAND LAUNDRY
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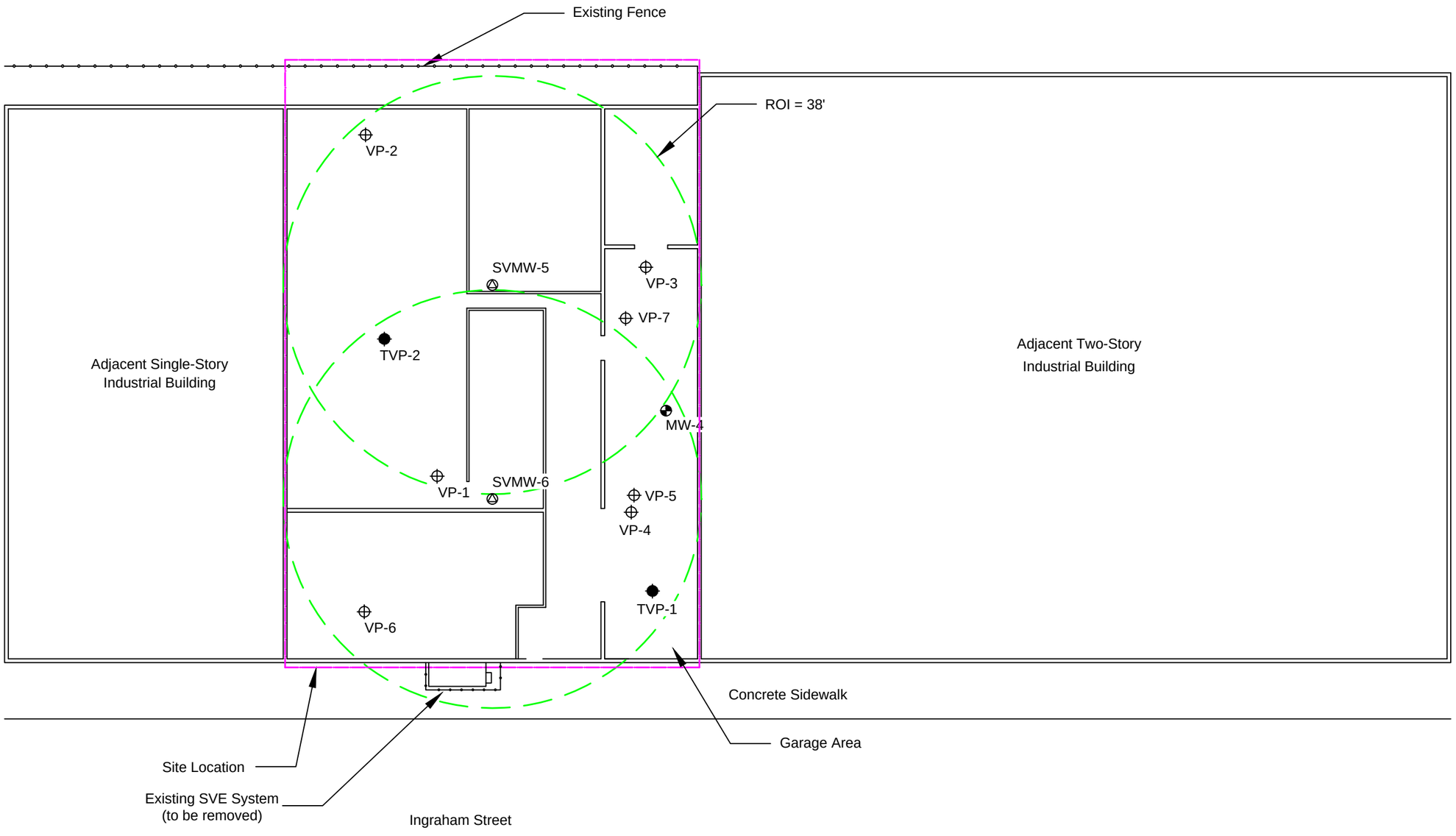
BROOKLYN, NEW YORK

INSTITUTIONAL BOUNDARY CONTROLS

FIGURE #
9



LEGEND:
- Radius of Influence
- Existing Monitoring Well Location
- Existing Vapor Extraction Location
- Existing Vapor Point Location
- Temporary Vapor Point Location

SCALE: 0 5' 10' 15' 20' SCALE IN FEET

DATE:	FIGURE:	DRAFTED BY:
5/25/16	10	NC/DK

MAP: Site Plan with SSDS Radius of Influence

SITE: Popular Hand Laundry
88 Ingraham Street
Brooklyn, NY 10452

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5 Old Dock Road
Yaphank, NY 11980
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Attachment E5 c
Title Pgs, Text, Tables, & Figures
July 2017 Final Engineering Rpt
88 Ingraham Rd Site (Popular Hand Laundry - upgradient site)
42 pages

Popular Hand Laundry

KINGS, NEW YORK

Final Engineering Report

NYSDEC Site Number: V00170

Prepared for:

88 Ingraham Realty Corp.
7700 Bella Verde Way
Delray Beach, FL 33446

Prepared by:

EnviroTrac Engineering PE PC
5 Old Dock Road
Yaphank, NY 11980
631-924-3001

JULY 2017

CERTIFICATIONS

I, Dale C. Konas, PE, am currently a registered professional engineer licensed by the State of New York, I had primary direct responsibility for implementation of the remedial program activities, and I certify that the Remedial Action Work Plan was implemented and that all construction activities were completed in substantial conformance with the Department-approved Remedial Action Work Plan.

I certify that the data submitted to the Department with this Final Engineering Report demonstrates that the remediation requirements set forth in the Remedial Action Work Plan and in all applicable statutes and regulations have been or will be achieved in accordance with the time frames, if any, established for the remedy.

I certify that all use restrictions, Institutional Controls, Engineering Controls, and/or any operation and maintenance requirements applicable to the Site are contained in a Declaration of Covenants and Restrictions created and recorded pursuant ECL 71-3605 and that all affected local governments, as defined in ECL 71-3603, have been notified that such Declaration has been recorded.

I certify that a Site Management Plan has been submitted for the continual and proper operation, maintenance, and monitoring of all Engineering Controls employed at the Site, including the proper maintenance of all remaining monitoring wells, and that such plan has been approved by the Department.

I certify that all documents generated in support of this report have been submitted in accordance with the DER's electronic submission protocols and have been accepted by the Department.

I certify that all data generated in support of this report have been submitted in accordance with the Department's electronic data deliverable and have been accepted by the Department.

I certify that all information and statements in this certification form are true. I understand that a false statement made herein is punishable as a Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law. I, Dale C. Konas, PE, of 5 Old Dock Road, Yaphank, NY 11980, am certifying as Owner's Designated Site Representative for the site.

081035
NYS Professional Engineer #

7/19/17
Date

Signature

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LIST OF ACRONYMS

AS	Air Sparging
CAMP	Community Air Monitoring Plan
DER	Division of Environmental Remediation
EC	Engineering Control
ECL	Environmental Conservation Law
HASP	Health and Safety Plan
IC	Institutional Control
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
NYCRR	New York Codes, Rules and Regulations
O&M	Operations and Maintenance
OM&M	Operation, Maintenance and Monitoring
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
RAO	Remedial Action Objective
RAWP	Remedial Action Work Plan
SCO	Soil Cleanup Objective
SMP	Soil Management Plan
SSD	Sub-Slab Depressurization
SVE	Soil Vapor Extraction
VCA	Voluntary Cleanup Agreement

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FINAL ENGINEERING REPORT

1.0 BACKGROUND AND SITE DESCRIPTION

88 Ingraham Realty Corp., Popular Hand Laundry, and Cleaners of Richmond Hill, Inc. entered into a Voluntary Cleanup Agreement (VCA) with the New York State Department of Environmental Conservation (NYSDEC) in September 1998, to investigate and remediate a 0.2-acre property located in Brooklyn, Kings County, New York. Remedial measures were implemented at the Site to address soil, soil vapor, and groundwater contamination. The property is and will be used for commercial use.

The Site is located in the County of Kings, New York and is identified as Section 10, Block 2998 and Lot 19 on the City of New York Tax Map # 13B. The Site is situated on an approximately 0.2-acre area bounded by Ingraham Street to the north, a commercial property to the south, a commercial property to the east, and a commercial property to the west (see Figure 1). The boundaries of the Site are fully described in Appendix A: Survey Map, Metes and Bounds.

An electronic copy of this FER with all supporting documentation is included as Appendix B.

2.0 SUMMARY OF SITE REMEDY

2.1 REMEDIAL ACTION OBJECTIVES

Based on the results of the Remedial Investigation, the following Remedial Action Objectives (RAOs) were identified for this site.

2.1.1 Groundwater RAOs

RAOs for Public Health Protection

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

RAOs for Environmental Protection

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

2.1.2 Soil RAOs

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of, or exposure to, contaminants volatilizing from contaminated soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.

- Prevent impacts to biota due to ingestion/direct contact with contaminated soil that would cause toxicity or bioaccumulation through the terrestrial food chain.

2.1.3 **Soil Vapor RAOs**

RAOs for Public Health Protection

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

2.2 DESCRIPTION OF SELECTED REMEDY

The Site was remediated in accordance with the remedy selected by the NYSDEC in the RAWP dated August 1998, the Final Air Sparge (AS)/ Soil Vapor Extraction (SVE) System Design dated September, 2008, and the approval letter from NYSDEC dated June 17, 2016 (SSD Design Plan).

The factors considered during the selection of the remedy are those listed in 6NYCRR 375-1.8. The following are the components of the selected remedy:

1. Construction and maintenance of a soil cover system consisting of the building concrete floor slab to prevent human exposure to remaining contaminated soil/fill remaining at the site;

2. The operation of an Air Sparge (AS) / Soil Vapor Extraction (SVE) system to address groundwater contamination and provide a means of depressurization of the underlying building soil to prevent vapor migration into the occupied space of the building.;

3. Installation and operation of a Sub-Slab Depressurization (SSD) system as a replacement for the above mentioned AS/SVE system for the purpose of maintaining a negative pressure in the underlying soil of the building and prevent the migration of vapors into the building occupied space;

4. Execution and recording of a Declaration of Covenants and Restrictions to restrict land use and prevent future exposure to any contamination remaining at the site.

5. Institutional Controls (IC);

- The property subject to this Declaration of Covenants and Restrictions is as shown on Figure 1.
- Unless prior written approval by the NYSDEC or, if the NYSDEC shall no longer exist, any New York State agency or agencies subsequently created to protect the environment of the State and the health of the State's citizens, hereinafter referred to as "the Relevant Agency," is first obtained, where contamination remains at the property subject to the provisions of the SMP, there shall be no construction, use or occupancy of the property that results in the disturbance or excavation of the property which threatens the integrity of the ECs or which results in unacceptable human exposure to contaminated soils.
- The owner of the property shall not disturb, remove, or otherwise interfere with the installation, use, operation, and maintenance of the ECs required for the remedy, which are described in the SMP, unless in each instance the owner first obtains a written waiver of such prohibition from the NYSDEC or relevant agency.
- The owner of the property shall prohibit the property from ever being used for purposes other than for Commercial as described in 6 NYCRR Part 375-1.8(g)(2)(iii) and Industrial as described in 6 NYCRR Part 375-1.8(g)(2)(iv) without the express written waiver of such prohibition by the NYSDEC or relevant agency.
- The use of groundwater underlying the property is prohibited without necessary water quality treatment as determined by the NYSDOH or the Kings County Department of Health to render it safe for use as drinking water or for industrial purposes, and the user must first notify and obtain approval to do so from the NYSDEC.
- The owner of the property shall provide access to and cooperate with the responsible party to allow the responsible party to arrange for a

periodic certification, prepared and submitted by a professional engineer or environmental professional acceptable to the NYSDEC or relevant agency, which will certify that the ICs and ECs put in place are unchanged from the previous certification, comply with the SMP, and have not been impaired.

- The owner of the property shall continue in full force and effect any ICs and ECs required for the remedy and maintain such controls, unless the owner first obtains permission to discontinue such controls from the NYSDEC or relevant agency, in compliance with the approved SMP, which is incorporated and made enforceable hereto, subject to modifications as approved by the NYSDEC or relevant agency.

- The Declaration is and shall be deemed a covenant that shall run with the land and shall be binding upon all future owners of the property, and shall provide that the owner and its successors and assigns consent to enforcement by the NYSDEC or relevant agency of the prohibitions and restrictions that the VCA requires to be recorded, and hereby covenant not to contest the authority of the NYSDEC or relevant agency to seek enforcement.

- Any deed of conveyance of the property, or any portion thereof, shall recite, unless the NYSDEC or relevant agency has consented to the termination of such covenants and restrictions that said conveyance is subject to the Declaration of Covenants and Restrictions.

- A sub-slab depressurization system (SSDS) installed at the Site will be certified and inspected on an annual basis.

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

7. Periodic certification of the institutional and engineering controls listed above.

3.0 INTERIM REMEDIAL MEASURES, OPERABLE UNITS AND REMEDIAL CONTRACTS

The remedy for this Site was performed as a single project, and no interim remedial measures, operable units or separate construction contracts were performed.

4.0 DESCRIPTION OF REMEDIAL ACTIONS PERFORMED

Remedial activities completed at the Site were conducted in accordance with the NYSDEC-approved RAWP for the Popular Hand Laundry Site, dated August 1998 by Dvirka and Bartilucci (D&B), the Final Air Sparge (AS)/ Soil Vapor Extraction (SVE) System Design dated September, 2008 by Tyree, and the approval letter from NYSDEC dated June 17, 2016 for the SSD Design Plan. All deviations from the RAWP and SSD Design Plan are noted below.

4.1 GOVERNING DOCUMENTS

4.1.1 Site Specific Health & Safety Plan (HASP)

All remedial work performed under this Remedial Action was in full compliance with governmental requirements, including Site and worker safety requirements mandated by Federal OSHA.

The Health and Safety Plan (HASP) was complied with for all remedial and invasive work performed at the Site.

4.2 REMEDIAL PROGRAM ELEMENTS

4.2.1 Contractors and Consultants

- EnviroTrac, Yaphank, NY: Operation, Maintenance, and Monitoring (OM&M) of AS/SVE system, installation of SSD system, and all groundwater, soil, soil gas, and indoor air sampling conducted from DATE to the time of this report.
- Blasko Electric, Long Island City, NY: Installation of all electrical components associated with the installation of the SSD system.
- Engineer of Record: Dale C. Konas, PE, EnviroTrac Engineering PE PC, Yaphank, NY

4.2.2 Site Preparation

- August 8, 2016 - Mobilization: EnviroTrac mobilized to the Site on this date in preparation of the installation of the SSD system and the decommissioning of the AS/SVE system. This included taking delivery of all equipment and machinery to be utilized;

- Agency Approvals and Permits;
    - August 1997 – NYSDEC approval of RAWP
    - June 17, 2016 – NYSDEC approval of SSD Remedial Design Plan.

4.2.3 Documentation of agency approvals required by the RAWP and SSD Design Plan are included in Appendix D. 4.2.3 General Site Controls

- Site security: The installation of the SSD system and decommissioning of the AS/SVE system was conducted over the course of one work day. The work zone was cordoned off using traffic cones, wooden barricades, and caution tape. At the conclusion of the construction related tasks, the work zone isolation devices were removed;
- Job site record keeping: All applicable job site records were recorded into a daily field log on an as needed basis. The log included personnel present onsite, logs of subcontractors onsite, tailgate safety meeting minutes, photo documentation of construction and demolition activities, and records of SSD system startup testing;

4.2.4 Reporting

- Photo Log: The digital photo log required by the RAWP is included in electronic format in Appendix E.

4.3 REMEDIAL PERFORMANCE/DOCUMENTATION SAMPLING

4.3.1 Previously Installed AS/SVE System

A SVE/AS remediation system, consisting of one (1) SVE well (SVE-1) and one (1) AS well (AS-1) located in the sidewalk to the north of the Site building, was previously installed and operated by Miller Environmental Group, Inc. (MEG) at the Site from 2001 to 2005. The controls for the system were installed in the partial basement of the building. Figure 2 shows the location of the MEG SVE/AS system. In 2005, Tyree demonstrated that the MEG SVE/AS system was designed insufficiently and replaced that system with a new SVE/AS system at the Site in 2008. The Tyree SVE/AS system consisted of two (2) SVE wells (SV-5 and SV-6) and two (2) AS wells (AS-3 and AS-4) that were installed beneath the building slab. The AS portion of the Tyree system operated from 2009 to August, 2015. The SVE portion of the Tyree system operated from 2009 to August, 2016.

Figure 3 shows the Tyree SVE/AS system. Based on SVE/AS system monitoring data, EnviroTrac recommended that the AS portion of the system be shut down since groundwater contaminants had reached asymptotic levels. The AS portion of the system was shut down in August, 2015. The SVE system remained in operation to address potential vapor intrusion concerns. The Status Report dated October, 2015 by EnviroTrac concluded that concentrations in groundwater did not rebound with the AS system off. Furthermore, although SVE emissions indicate trace recoverable chlorinated compounds were present, the SVE operation would continue pending a vapor intrusion investigation. The groundwater monitoring results reported in the following Status Reports from December, 2015 to June, 2016 showed an overall continued decreasing trend of target VOCs in wells located within the building footprint.

Influent and effluent air samples were collected from the SVE system by EnviroTrac in August, 2015 and October and November, 2016. Readings were also measured from the influent and effluent sampling ports using a photoionization detector (PID). Tables 1 and 2 summarize the SVE emissions in August, 2015 and in October and November, 2016. PID readings were reported in quarterly Status Reports, which were provided to the NYSDEC. PID readings measured from October, 2015 to July, 2016 for the SVE influent port ranged from 0.0 to 4.0 parts per million (ppm). PID readings measured from October, 2015 to July, 2016 for the SVE effluent port ranged from 0.0 to 1.6 ppm.

In August, 2016, the SVE system was shut down and replaced with a SSDS blower or fan that draw vapors from the existing SVE wells (SV-5 and SV-6) in the building. The SVE/AS system shed was then disconnected and removed from the Site.

4.4 CONTAMINATION REMAINING AT THE SITE

4.4.1 Soil

Remaining soil contamination is located beneath the Site near the former dry cleaning machine, near a washer and trough in the southern portion of the building, in the central portion of the garage, and in the basement near the sewer piping. The soil sample results indicated that DCE and VC were detected above the NYSDEC UUSCOs in shallow (6’-7’ below grade) soil and PCE was detected above the NYSDEC RUSCO near the washer machine and trough and RRUSCO within the central portion of the garage, both within the shallow soil (0’-4’ below grade). All soil sample concentrations were detected below the NYSDEC Commercial Use Soil Cleanup Objectives. The soil contamination

will remain in place to maintain the structural integrity of the building at the Site. Table 3 summarizes the remaining soil sample exceedances above the NYSDEC UUSCOs collected during 1996-1997 and 2005. Figure 2 shows the historical soil sample target CVOC results above NYSDEC UUSCOs.

4.4.2 Groundwater

Remaining groundwater contamination is present beneath the Site and downgradient of the Site along Ingraham Street. In June, 2015, EnviroTrac made the argument that contamination found in off-Site wells were likely attributable to an off-Site source of solvent groundwater contamination caused by other responsible parties located upgradient of the Site. The Status Report for the December, 2015 sampling requested that monitoring wells located within the building and off-Site along the northern portion of Ingraham Street should no longer be sampled due to poor well construction (small diameter size) for some of the wells, limited ability to gain access to the interior of the building, and an overall decrease in groundwater contamination levels when compared to previous groundwater monitoring events.

Based on the December, 2015 (last indoor groundwater sampling event), DCE is present in the wells SV-6 (20'), MW-6 (30'), G-2, AS-3, and AS-4 above the NYSDEC Groundwater Standard. DCE results range from 13 to 86 ug/l. The most recent groundwater sampling event performed for the wells located along the south side of Ingraham Street occurred in September, 2016 which shows an overall decrease in groundwater contamination levels for multi-level well NW-2 and MW-2 when compared to previous groundwater monitoring events. DCE, PCE, TCE, and VC were not detected in MW-2. The concentrations of DCE, PCE, TCE, and VC detected in NW-2@20', NW-2@30', NW-2@40', and NW-2@50' were detected above the NYSDEC Groundwater Standards, but were overall similar to the concentrations detected during the June, 2016 event. Table 4 summarizes the groundwater monitoring well sample target CVOC results collected from the interior wells within the building from 2009 to December, 2015. Table 5 summarizes the groundwater monitoring well sample target CVOC results collected from the exterior wells along the south side of Ingraham Street from 2005 to September, 2016. Figure 4 shows the groundwater sample target CVOC results above NYSDEC Groundwater Standards for the latest sampling event in September, 2016.

4.4.3 Soil Vapor and Indoor Air

Remaining soil gas contamination is present beneath the building at the Site. Based on the soil vapor intrusion investigation results performed at the Site in February, 2016,

mitigation is required for Site building due to the concentrations of PCE and TCE in the sub-slab soil vapor. In August, 2016, the previous SVE/AS system was disconnected and removed after reaching asymptotic levels for both soil and groundwater and replaced with a SSDS, which is the current operating mitigation system. Table 6 summarizes the soil gas sampling results from October, 2004, June, 2006, and February, 2016. Table 7 summarizes the indoor and outdoor/ambient air sampling results from October, 2004, June, 2006, and February, 2016. Figure 5 shows the historical and most recent soil gas well locations, sub-slab soil vapor sample locations, indoor air sample locations, and outdoor/ambient air locations with target CVOC results.

Since contaminated soil, groundwater, and soil vapor remain beneath the Site after completion of the Remedial Action, Institutional and Engineering Controls are required to protect human health and the environment. These Engineering and Institutional Controls (ECs/ICs) are described in the following sections. Long-term management of these EC/ICs and residual contamination will be performed under the Site Management Plan (SMP) approved by the NYSDEC.

4.5 CAP SYSTEM

Exposure to remaining contamination in soil/fill at the Site is prevented by a soil cover system placed over the site. This cover system is comprised of a minimum of 12 inches of concrete building slabs. Figure 6 shows the location of each cover type built at the Site. An Excavation Work Plan, which outlines the procedures required in the event the cover system and/or underlying residual contamination are disturbed, is provided in Appendix B of the SMP.

4.6 OTHER ENGINEERING CONTROLS

Since remaining contaminated soil, groundwater, and soil vapor exists beneath the site, Engineering Controls (EC) are required to protect human health and the environment. The Site has the following primary Engineering Controls, as described in the following subsections.

4.6.1 SSD System

The results of a soil vapor intrusion investigation performed in February, 2016 at the Site, showed that PCE and TCE present in the sub-slab soil gas was elevated and mitigation was required. A letter dated June 17, 2016 from the NYSDEC approved

EnviroTrac's SSDS Design Plan dated June 16, 2016 and allowed the Tyree SVE/AS system to be disconnected, removed, and replaced with a SSDS. In August, 2016, the Tyree SVE/AS system shed was disconnected and removed from the Site and replaced with an SSDS blower/fan. Figure 2 shows the Engineering Controls for the Site, which include the SSDS Site Plan and SSDS Radius of Influence.

4.6.1.1 Conceptual Remedial Approach

The SSD system is comprised of a vacuum blower that was connected to the existing network of piping that is used to induce a vacuum at the two (2) existing SVE wells located within the building. The vacuum provides a negative pressure gradient under the entire extent of the floor slab, thereby eliminating the potential for soil vapor to migrate into the building.

4.6.1.2 System Design and Installation:

The SSD system uses the two (2) existing SVE wells, SV-5 and SV-6, which are constructed of 2-inch diameter schedule 40 PVC and consist of 5-feet of riser pipe and 15 feet of 0.02-slotted screen, located beneath the concrete slab floor within the building. The SVE well piping, which is routed up to and along the first-floor ceiling, exits the front, or north side, of the building. The individual lateral pipes, which are constructed of 2-inch schedule 40 PVC, are manifolded together into one (1) 4-inch schedule 40 PVC header prior to connecting to the inlet of the vacuum blower, which is mounted to the exterior wall of the building. The effluent connection of the blower was piped upward along the exterior wall of the building and discharges approximately 2-feet above the second story roof line. The vacuum blower utilized is a model HS2000E, manufactured by RadonAway and is capable of producing a minimum of 40cfm @ a vacuum of 15 "H2O. The blower consists of an integral enclosure rated for indoor/outdoor use and an internal condensate bypass. Electrical power is provided to the blower via the existing electrical service, which consists of a 100A distribution panel, located within the basement of the building. An outdoor rated 110V GFCI electrical outlet with a weather resistant cover was installed adjacent to the vacuum blower and the blower power cord in connected. As-built drawings for the installed SSD system are included as Figure 8 and Figure 9.

During the startup of the SSD system, the system was tested and found to be operating as designed, and providing adequate vacuum to the building sub-slab soils. Vacuum response readings were collected from the network of vacuum monitoring points located throughout the building. Readings collected ranged from 0.021 to 0.390 "H2O, which exceeds the minimum vacuum requirement of 0.020 "H2O (5 pascals). Recorded

results of the system startup testing can be seen in Appendix H. It should be noted that in order to maintain the minimum required vacuum response throughout the footprint of the building, a minimum operational vacuum of 11.0 “H2O and a flow rate of 20 cfm should be maintained at each of the two extraction points.

4.6.1.3 SSD System O&M

A copy of the SSD system O&M manual is included in Appendix G for reference. The O&M manual includes instructions relating to the startup, shutdown, and operation of the system, and includes specific component manufacturers instructions, manuals, and warrantee information.

Procedures for monitoring, operating and maintaining the SSD system are provided in the Operation and Maintenance Plan in Section 4 of the Site Management Plan (SMP). The Monitoring Plan also addresses inspection procedures that must occur after any severe weather condition has taken place that may affect on-Site ECs.

The active SSD system will not be discontinued unless prior written approval is granted by the NYSDEC and the NYSDOH. In the event that monitoring data indicates that the SSD system may no longer be required, a proposal to discontinue the SSD system will be submitted by the remedial party to the NYSDEC and NYSDOH.

4.7 INSTITUTIONAL CONTROLS

The Site remedy requires that a Declaration of Covenants and Restrictions be placed on the property to (1) implement, maintain and monitor the Engineering Controls; (2) prevent future exposure to remaining contamination by controlling disturbances of the subsurface contamination; and, (3) limit the use and development of the Site to commercial or industrial uses only.

The Declaration of Covenants and Restrictions for the Site was executed by the Department on November 16, 2015, and filed with the New York City Clerk on November 16, 2015. The County Recording Identifier number for this filing is 2016010500232001. A copy of the Declaration and proof of filing is provided in Appendix C.

4.8 DEVIATIONS FROM THE REMEDIAL ACTION WORK PLAN

A SVE/AS remediation system, consisting of one (1) SVE well (SVE-1) and one (1) AS well (AS-1) located in the sidewalk to the north of the Site building, was previously installed and operated by MEG at the Site from 2001 to 2005. The controls for the system

were installed in the partial basement of the building. This system was installed to comply with the RAWP dated 1998 by D&B.

In 2005, Tyree demonstrated that the MEG SVE/AS system was designed insufficiently (was not addressing the on-Site soil and groundwater contamination) and replaced that system with a new SVE/AS system at the Site in 2008. Tyree submitted the Final AS/SVE System Design Including Operation, Maintenance and Monitoring Manual to the NYSDEC in September, 2008. The Tyree SVE/AS system consisted of two (2) SVE wells (SV-5 and SV-6) and two (2) AS wells (AS-3 and AS-4) that were installed beneath the building slab. The AS portion of the Tyree system operated from 2009 to August, 2015. The SVE portion of the Tyree system operated from 2009 to July, 2015 by Tyree, and by EnviroTrac in August, 2015. Based on SVE/AS system monitoring data, EnviroTrac recommended that the AS portion of the system be shut down since groundwater contaminants had reached asymptotic levels. Draft SMP and FER reports were submitted to the NYSDEC by Tyree in June, 2015.

The AS portion of the system was shut down in August, 2015. The SVE system remained in operation to address potential vapor intrusion concerns. The Status Report dated October, 2015 by EnviroTrac concluded that concentrations in groundwater did not rebound with the AS system off. Furthermore, although SVE emissions indicate trace recoverable chlorinated compounds were present, the SVE operation would continue pending a vapor intrusion investigation. The groundwater monitoring results reported in the December 2015 Status Report show a continued decreasing trend of target VOCs in wells located within the building footprint.

A soil vapor intrusion investigation was performed in February, 2016 by EnviroTrac to determine if a mitigation system was required to address any remaining vapors beneath the Site building. Based on the soil vapor intrusion investigation results, mitigation is required for the Site building due to the concentrations of PCE and TCE in the sub-slab soil vapor. In August, 2016, the SVE system was shut down and replaced with a SSDS blower that draw vapors from the existing SVE wells (SV-5 and SV-6) in the building. The SVE/AS system shed was then disconnected and removed from the Site. The SSDS Design Plan was submitted to the NYSDEC on June 16, 2016. Post mitigation indoor air sample results will be provided to the NYSDEC in a separate document.

TABLES

Table 1
SVE Vapor Sampling Results - VCP Site No. V00170
Popular Hand Laundry Site
88 Ingraham St.
Brooklyn, NY

Sample Date August 20, 2015

Air Emission VOCs- Pounds Per Hour

Emission rates in terms of pounds per hour (lbs/hr) for VOCs are calculated using the pollutant emission rate in parts per million (ppm/dry), flow rate in dscfm (Qs), molecular weight of the pollutant (MW), 60 minutes /hour, divided by 385.3x $10E^6$ dscf/lb-mole @ 68 F.

$$\text{Lbs/hr} = \frac{\text{PPM x Qs x MW x 60}}{385.3\text{x } 10E^6}$$

Pre-Carbon Filters

Compound	MW	PPBv	PPM	Q CFM	Lbs/Hr	Lbs/Hr	Tons/Yr
Acetone	58.08	26.60	0.0266	65	1.564E-05	0.00002	6.85E-05
Benzene	78.11	0.71	0.000708	65	5.598E-07	0.00000	2.45E-06
Carbon Disulfide	76.14	0.83	0.000828	65	6.381E-07	0.00000	2.80E-06
Carbon_tetrachloride	153.82	0.178	0.000178	65	2.771E-07	0.00000	1.21E-06
Chloroform	119.38	1.41	0.00141	65	1.704E-06	0.00000	7.46E-06
Cumene (isopropylbenzene)	120.2	1.49	0.00149	65	1.813E-06	0.00000	7.94E-06
Cyclohexane	84.16	0.716	0.000716	65	6.099E-07	0.00000	2.67E-06
1,4-Dichlorobenzene	147	1.56	0.00156	65	2.321E-06	0.00000	1.02E-05
Dichlorodifluoromethane	120.91	0.582	0.000582	65	7.123E-07	0.00000	3.12E-06
1,1-Dichloroethane	98.96	2.36	0.00236	65	2.364E-06	0.00000	1.04E-05
cis-1,2-Dichloroethylene	96.94	118	0.118	65	1.158E-04	0.00012	5.07E-04
trans-1,2-Dichloroethylene	96.94	11.2	0.0112	65	1.099E-05	0.00001	4.81E-05
Ethanol	46.07	73.4	0.0734	65	3.423E-05	0.00003	1.50E-04
Ethylbenzene	106.17	5.82	0.00582	65	6.254E-06	0.00001	2.74E-05
4-Ethyltoluene	120.19	2.73	0.00273	65	3.321E-06	0.00000	1.45E-05
Heptane	100.2	0.706	0.000706	65	7.160E-07	0.00000	3.14E-06
Hexane	86.18	1.42	0.00142	65	1.239E-06	0.00000	5.43E-06
Isopropyl alcohol	60.1	22.9	0.0229	65	1.393E-05	0.00001	6.10E-05
Methyl ethyl ketone	72.11	1.86	0.00186	65	1.358E-06	0.00000	5.95E-06
Methyl isobutyl ketone (MIBK)	100.16	0.654	0.000654	65	6.630E-07	0.00000	2.90E-06
Methylene_chloride	84.93	4.41	0.00441	65	3.791E-06	0.00000	1.66E-05
Styrene	104.15	0.508	0.000508	65	5.355E-07	0.00000	2.35E-06
Tetrachloroethylene	165.83	116	0.116	65	1.947E-04	0.00019	8.53E-04
Tetrahydrofuran	72.11	0.766	0.000766	65	5.591E-07	0.00000	2.45E-06
Toluene	92.14	15.6	0.0156	65	1.455E-05	0.00001	6.37E-05
1,2,4- trichlorobenzene	181.45	5.51	0.00551	65	1.012E-05	0.00001	4.43E-05
1,1,1-Trichloroethane	133.4	1.33	0.00133	65	1.796E-06	0.00000	7.87E-06
Trichloroethylene	131.39	53.3	0.0533	65	7.089E-05	0.00007	3.10E-04
Trichlorofluoromethane	137.37	0.376	0.000376	65	5.228E-07	0.00000	2.29E-06
1,3,5-Trimethylbenzene	120.19	1.44	0.00144	65	1.752E-06	0.00000	7.67E-06
Vinyl_chloride	62.5	1.71	0.00171	65	1.082E-06	0.00000108	4.74E-06
m/p-Xylene	106.17	21.3	0.0213	65	2.289E-05	0.00002	1.00E-04
o-Xylene	106.17	5.73	0.00573	65	6.158E-06	0.00001	2.70E-05
n-Butylbenzene	134.22	0.566	0.000566	65	7.690E-07	0.00000	3.37E-06
					Total Lbs/Hr:	**0.00055**	

EnviroTrac

Table 2
Summary of Air Sparge Shutdown Testing
Former Popular Hand Laundry
88 Ingraham Street
Brooklyn, New York
NYSDEC Site No. V00170

Sample ID	Influent (Pre-Carbon)			Effluent (Post-Carbon)
System Operation	SVE	SVE/AS	SVE/AS	SVE
Sample Date	10/1/2015	11/9/2015	11/11/2015	10/1/2015
Total VOCs (Lbs/Hr)	0.0005	0.0005	0.00024	0.00020

Notes:

Influent and effluent vapor samples collected on October 1, 2015 represent Soil Vapor Extraction (SVE) ba
Extraction (SVE) baseline concentrations.
With the SVE system operating, the Air Sparge (AS) was turned on and a vapor sample was collected on 11/9/15.
After allowing the SVE/AS systems to operate for 3 days, a second influent vapor sample was collected on 11/11/15.

Table 3
Remaining Soil Sample Exceedances Above NYSDEC UUSCOs
88 Ingraham Street
Brooklyn, New York
NYSDEC Site No. V00170

Sample ID	GP1 (0'-2')	GP2 (0'-2')	GP3 (0'-2')	GP3 (0'-2')	GP4 (0'-2')	S1 (6'-7')	S2 (0'-2')	NYSDEC UUSCO	NYSDEC Residential USCO	NYSDEC Restricted Residential USCO	NYSDEC Commercial USCO
Sample Date	1996-1997										
Sample Units	ug/kg										
Trichloroethene	ND	ND	ND	ND	ND	ND	20	470	10,000	21,000	200,000
Cis-1,2-Dichloroethene	ND	ND	ND	ND	ND	**9,500**	35	250	59,000	100,000	500,000
Tetrachloroethene	ND	**11,000**	33	ND	ND	ND	140	1,300	5,500	19,000	150,000
Vinly Chloride	ND	ND	ND	ND	ND	**140**	ND	20	210	900	13,000

Sample ID	G1 (0'-4')	G1 (4'-8')	G1 (8'-12')	G2 (0'-4')	G2 (4'-8')	G2 (8'-12')	G3 (0'-4')	G3 (4'-8)	G3 (8'-12')	NYSDEC UUSCO	NYSDEC Residential USCO	NYSDEC Restricted Residential USCO	NYSDEC Commercial USCO
Sample Date	12/1/2005												
Sample Units	ug/kg												
Trichloroethene	296	17	19	1.04	1.08	1.11	10	4	51	470	10,000	21,000	200,000
Cis-1,2-Dichloroethene	**325**	52	84	1.19	1.24	1.07	9	5	84	250	59,000	100,000	500,000
Tetrachloroethene	**19,400**	26	74	10	3	2.11	170	39	137	1,300	5,500	19,000	150,000
Vinly Chloride	2.87	1.17	1.17	1.08	1.12	1.16	1.25	1.1	1.16	20	210	900	13,000

Sample ID	B4 (0'-4')	B4 (4'-8')	B4 (8'-12')	B5 (0'-4')	B5 (4'-8')	B5 (8'-12')	B6 (0'-4')	B6 (4'-8')	B6 (8'-12')	NYSDEC UUSCO	NYSDEC Residential USCO	NYSDEC Restricted Residential USCO	NYSDEC Commercial USCO
Sample Date	12/1/2005												
Sample Units	ug/kg												
Trichloroethene	249	11	4	2	2	5	18	29	2.68	470	10,000	21,000	200,000
Cis-1,2-Dichloroethene	32.9	6	4	1.17	1.24	1.19	71	33.3	3.08	250	59,000	100,000	500,000
Tetrachloroethene	**5,730**	59	46	15	22	33	36	23.2	5.07	1,300	5,500	19,000	150,000
Vinly Chloride	32.9	1.12	1.12	1.06	1.12	1.08	2.84	33.3	2.79	20	210	900	13,000

Notes:
Reported sample results were limited to target chlorinated volatile organic compounds (CVOCs).
ug/kg = micrograms per kilogram
ND = Not Detected
Bolded values indicate an exceedance of the New York State Department of Environmental Conservation (NYSDEC) Part 375 Subpart 375-6 Unrestricted Use Soil Cleanup Objective.
Yellow shaded values indicate an exceedance of the NYSDEC Part 375 Subpart -6 Residential Use Soil Cleanup Objective.
Orange shaded values indicate an exceedance of the NYSDEC Part 375 Subpart 375-6 Restricted-Residential Use Soil Cleanup Objective.

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TABLE 4

INTERIOR GROUND WATER SAMPLE RESULTS FOR TARGET CVOCs

Popular Hand Laundry - VCP No. V00170, 88 Ingraham Street, Brooklyn, NY

Well ID	Sampling Date	c-1,2-dichloroethene (ug/L)	Tetrachloroethene (ug/L)	Trichloroethene (ug/L)	Vinyl Chloride (ug/L)
MW-4	9/23/09	**154**	**5.21**	**11.2**	NS
	11/15/10	**239**	4.54	**14.0**	**18.6**
	2/25/11	**167**	ND	**8.61**	**2.48**
	11/3/11	**80.6**	**6.85**	**19.8**	**2.93**
	2/28/12	**64.3**	2.46	**13.7**	ND
	5/30/12	**129**	1.40	**18.5**	**4.60**
	8/16/12	**111**	1.80	**13.6**	**3.60**
	11/19/12	**84.6**	1.10	**8.40**	**3.00**
	2/26/13	**86.2**	1.10	**9.50**	**3.20**
	5/29/13	**77.1**	0.80	**12.4**	**2.80**
	9/13/13	**60.5**	0.78	**8.40**	**3.20**
	12/13/13	**54.8**	ND	**6.40**	**3.40**
	3/25/14	**65.3**	ND	4.80	**4.10**
	7/8/14	**47.1**	0.31	4.80	**3.20**
	9/11/14	**56.4**	0.37	**6.00**	**3.50**
	1/16/15	**48.6**	ND	4.80	**6.20**
	5/14/15	**58.0**	ND	**7.50**	**5.60**
	8/21/15	**75.5**	ND	**5.20**	**7.70**
	12/03/15	ND	ND	ND	ND
	6/24/16	NS	NS	NS	NS
	9/07/16	NS	NS	NS	NS
SV/MW-5 (20')	9/23/09	**268**	**55.1**	**8.28**	NS
	11/15/10	NS	NS	NS	NS
	2/25/11	**165**	**6.94**	**6.13**	ND
	11/3/11	**80.0**	**14.9**	4.39	ND
	2/29/12	**100**	4.46	3.21	ND
	5/30/12	**136**	**15.5**	**6.10**	**2.40**
	8/16/12	**151**	**17.1**	**7.20**	**3.00**
	11/19/12	**85.7**	**10.8**	4.40	1.10
	2/26/13	NS	NS	NS	NS
	5/29/13	NS	NS	NS	NS
	9/13/13	NS	NS	NS	NS
	12/13/13	NS	NS	NS	NS
	3/25/14	NS	NS	NS	NS
	7/8/14	NS	NS	NS	NS
	9/11/14	NS	NS	NS	NS
	1/16/15	NS	NS	NS	NS
	5/14/15	NS	NS	NS	NS
	8/21/15	4.40	3.10	ND	ND
	12/3/2015	ND	ND	ND	ND
	6/24/2016	NS	NS	NS	NS
	9/7/2016	NS	NS	NS	NS
AS-3	9/23/09	**221**	**8.46**	**33.1**	NA
	11/15/10	NS	NS	NS	NS
	2/24/11	2.56	0.60	ND	ND
	11/2/11	**43.6**	1.10	**6.54**	ND
	2/29/12	**55.2**	ND	**5.14**	ND
	5/30/12	**15.3**	0.81	2.40	ND
	8/16/12	**42.2**	2.50	2.30	**13.7**
	11/19/12	**32.4**	2.70	**7.40**	ND
	2/26/13	**62.3**	1.40	4.90	ND
	5/29/13	**21.3**	0.69	2.00	ND
	9/13/13	**45.8**	2.30	**8.10**	0.26
	12/13/13	**9.50**	ND	2.00	ND
	3/25/14	**22.5**	ND	2.17	ND
	7/8/14	**21.8**	1.70	3.90	ND
	9/11/14	**44.2**	0.97	**6.90**	ND
	1/16/15	**7.50**	ND	1.70	ND
	5/14/15	**9.10**	ND	1.90	ND
	8/21/15	**96.0**	**14.6**	**47.6**	1.20
	12/3/2015	**13**	ND	ND	ND
	6/24/2016	NS	NS	NS	NS
	9/7/2016	NS	NS	NS	NS
AS-4	9/23/09	**342**	**12.1**	**52.6**	NA
	11/15/10	NS	NS	NS	NS
	2/24/11	**257**	ND	3.27	**6.63**
	11/2/11	**84.0**	ND	1.65	1.58
	2/29/12	**158**	ND	4.70	**15.6**
	5/30/12	**218**	ND	3.10	**13.5**
	8/16/12	**238**	ND	2.30	**13.7**
	11/19/12	**195**	ND	1.70	**26.0**
	2/26/13	**265**	ND	2.10	**32.0**
	5/29/13	**246**	ND	2.80	**41.8**
	9/13/13	**215**	ND	1.40	**74.6**
	12/13/13	**185**	ND	1.10	**42.8**
	3/25/14	**282**	ND	1.53	**50.8**
	7/8/14	**234**	ND	1.10	**62.9**
	9/11/14	**239**	ND	1.50	**22.1**
	1/16/15	**190**	ND	1.40	**14.9**
	5/14/15	**290**	ND	**5.60**	**28.0**
	8/21/15	**329**	ND	5.00	**32.1**
	12/3/2015	**86**	ND	ND	ND
	6/24/2016	NS	NS	NS	NS
	9/7/2016	NS	NS	NS	NS
NYSDEC Groundwater Standards		**5**	**5**	**5**	**2**

Notes: ND = Not Detected

NS = Not sampled
D = Results for Dilution
S = Recovery outside of control limits for this analyte

Bolded values indcate an exceedance of the New York State Department of Environmental Conservation (NYSDEC) Class GA Ambient Water Quality Standard.

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TABLE 4

INTERIOR GROUND WATER SAMPLE RESULTS FOR TARGET CVOCs

Popular Hand Laundry - VCP No. V00170, 88 Ingraham Street, Brooklyn, NY

Well ID	Sampling Date	c-1,2-dichloroethene (ug/L)	Tetrachloroethene (ug/L)	Trichloroethene (ug/L)	Vinyl Chloride (ug/L)
SV/MW-5 (30')	9/23/09	ND	4.80	ND	NS
	11/15/10	**20.0**	**9.18**	**6.30**	**13.1**
	2/25/11	**8.89**	ND	0.75	**3.03**
	11/3/11	1.83	ND	ND	ND
	2/29/12	3.76	ND	ND	ND
	5/30/12	**10.3**	ND	ND	**3.70**
	8/16/12	**7.90**	ND	0.26	**3.40**
	11/19/12	**6.60**	ND	0.26	**2.60**
	2/26/13	**5.30**	ND	0.32	1.70
	5/29/13	**7.00**	ND	ND	1.90
	9/13/13	4.00	ND	ND	0.91
	12/13/13	**6.10**	ND	ND	**3.30**
	3/25/14	**8.05**	ND	ND	**4.20**
	7/8/14	4.90	ND	ND	**2.50**
	9/11/14	**7.20**	ND	ND	**2.80**
	1/16/15	**5.90**	ND	ND	**2.90**
	5/14/15	**6.00**	ND	ND	**2.80**
	8/21/15	ND	ND	ND	ND
	12/3/2015	ND	ND	ND	ND
	12/3/2015 Duplicate	ND	ND	ND	ND
	6/24/2016	NS	NS	NS	NS
	9/7/2016	NS	NS	NS	NS
SV/MW-6 (20')	9/23/09	**437**	**32.5**	**19.5**	NA
	11/15/10	**240**	**23.1**	**19.9**	**9.00**
	2/25/11	**130**	**5.15**	3.53	ND
	11/3/11	**82.6**	**6.41**	4.10	ND
	2/28/12	**58.6**	4.47	2.83	ND
	5/30/12	**99.2**	**14.2**	4.40	0.3
	8/16/12	**59.4**	**8.30**	2.50	0.6
	11/19/12	**55.9**	4.70	2.40	0.3
	2/26/13	**54.5**	1.70	1.70	0.3
	5/29/13	**26.4**	**5.50**	2.80	ND
	9/13/13	**44.7**	**5.00**	3.90	ND
	12/13/13	**28.3**	2.40	2.40	ND
	3/25/14	**25.0**	3.68	2.00	ND
	7/8/14	**12.4**	1.90	1.40	ND
	9/11/14	**17.2**	1.60	1.70	ND
	1/16/15	**17.2**	0.61	1.10	ND
	5/14/15	**11.0**	1.40	1.00	ND
	8/21/15	**20.4**	ND	ND	ND
	12/3/2015	**19**	ND	ND	ND
	6/24/2016	NS	NS	NS	NS
	9/7/2016	NS	NS	NS	NS
SVMW-6 (30')	9/23/09	**672**	**12.8**	**92.3**	NA
	11/15/10	**658**	**10.5**	**77.8**	**10.0**
	2/25/11	**475**	**164**	2.70	1.53
	11/3/11	**395**	3.08	**36.3**	1.35
	2/28/12	**412**	**7.98**	**63.7**	**9.50**
	5/30/12	**763**	**8.70**	**101**	**11.3**
	8/16/12	**734**	**8.00**	**97.2**	**12.6**
	11/19/12	**569**	4.70	**63.6**	**5.90**
	2/26/13	**664**	**8.40**	**87.1**	**19.7**
	5/29/13	**603**	**5.70**	**76.8**	**11.3**
	9/13/13	**641**	**5.20**	**75.6**	**13.9**
	12/13/13	**468**	**7.10**	**74.4**	**34.7**
	3/25/14	**390**	**8.88**	**83.3**	**9.90**
	7/8/14	**557**	**6.20**	**72.0**	**5.50**
	9/11/14	**653**	**6.30**	**79.6**	**6.80**
	1/16/15	**363**	2.50	**40.7**	**8.90**
	5/14/15	**340**	ND	**50.0**	ND
	8/21/15	**572**	**6.00**	**69.7**	**8.60**
	12/3/2015	**63**	ND	ND	ND
	6/24/2016	NS	NS	NS	NS
	9/7/2016	NS	NS	NS	NS
G-2	9/23/09	**57.9**	2.04	**9.70**	NA
	11/15/10	**62.9**	**8.32**	**13.0**	**12.3**
	2/25/11	**32.6**	0.73	**5.51**	ND
	11/2/11	**38.3**	ND	**6.68**	ND
	2/29/12	**27.4**	ND	**5. 70**	ND
	5/30/12	**39.0**	1.30	**7.50**	ND
	8/16/12	**60.7**	1.60	**10.9**	0.70
	11/19/12	**62.5**	1.70	**12.3**	0.59
	2/26/13	**83.4**	2.00	**15.6**	1.10
	5/29/13	**61.3**	1.60	**13.1**	0.59
	9/13/13	**68.8**	1.60	**11.7**	0.61
	12/13/13	**86.3**	2.10	**13.0**	ND
	3/25/14	**104.0**	ND	**10.1**	0.78
	7/8/14	**38.3**	1.10	**7.20**	0.46
	9/11/14	**94.5**	1.60	**13.9**	0.56
	1/16/15	**66.9**	0.83	**8.00**	0.51
	5/14/15	**61.0**	1.40	**11.0**	ND
	8/21/15	**97.9**	2.90	**20.3**	ND
	12/3/2015	**29**	ND	ND	ND
	6/24/2016	NS	NS	NS	NS
	9/7/2016	NS	NS	NS	NS
NYSDEC Groundwater Standards		**5**	**5**	**5**	**2**

Notes: ND = Not Detected

NS = Not sampled
D = Results for Dilution
S = Recovery outside of control limits for this analyte

Bolded values indcate an exceedance of the New York State Department of Environmental Conservation (NYSDEC) Class GA Ambient Water Quality Standard.

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TABLE 4

INTERIOR GROUND WATER SAMPLE RESULTS FOR TARGET CVOCs

Popular Hand Laundry - VCP No. V00170, 88 Ingraham Street, Brooklyn, NY

Well ID	Sampling Date	c-1,2-dichloroethene (ug/L)	Tetrachloroethene (ug/L)	Trichloroethene (ug/L)	Vinyl Chloride (ug/L)
AS-3	9/23/09	**221**	**8.46**	**33.1**	NA
	11/15/10	NS	NS	NS	NS
	2/24/11	2.56	0.60	ND	ND
	11/2/11	**43.6**	1.10	**6.54**	ND
	2/29/12	**55.2**	ND	**5.14**	ND
	5/30/12	**15.3**	0.81	2.40	ND
	8/16/12	**42.2**	2.50	2.30	**13.7**
	11/19/12	**32.4**	2.70	**7.40**	ND
	2/26/13	**62.3**	1.40	4.90	ND
	5/29/13	**21.3**	0.69	2.00	ND
	9/13/13	**45.8**	2.30	**8.10**	0.26
	12/13/13	**9.50**	ND	2.00	ND
	3/25/14	**22.5**	ND	2.17	ND
	7/8/14	**21.8**	1.70	3.90	ND
	9/11/14	**44.2**	0.97	**6.90**	ND
	1/16/15	**7.50**	ND	1.70	ND
	5/14/15	**9.10**	ND	1.90	ND
	8/21/15	**96.0**	**14.6**	**47.6**	1.20
	12/3/2015	**13**	ND	ND	ND
	6/24/2016	NS	NS	NS	NS
	9/7/2016	NS	NS	NS	NS
AS-4	9/23/09	**342**	**12.1**	**52.6**	NA
	11/15/10	NS	NS	NS	NS
	2/24/11	**257**	ND	3.27	**6.63**
	11/2/11	**84.0**	ND	1.65	1.58
	2/29/12	**158**	ND	4.70	**15.6**
	5/30/12	**218**	ND	3.10	**13.5**
	8/16/12	**238**	ND	2.30	**13.7**
	11/19/12	**195**	ND	1.70	**26.0**
	2/26/13	**265**	ND	2.10	**32.0**
	5/29/13	**246**	ND	2.80	**41.8**
	9/13/13	**215**	ND	1.40	**74.6**
	12/13/13	**185**	ND	1.10	**42.8**
	3/25/14	**282**	ND	1.53	**50.8**
	7/8/14	**234**	ND	1.10	**62.9**
	9/11/14	**239**	ND	1.50	**22.1**
	1/16/15	**190**	ND	1.40	**14.9**
	5/14/15	**290**	ND	**5.60**	**28.0**
	8/21/15	**329**	ND	5.00	**32.1**
	12/3/2015	**86**	ND	ND	ND
	6/24/2016	NS	NS	NS	NS
	9/7/2016	NS	NS	NS	NS
NYSDEC Groundwater Standards		**5**	**5**	**5**	**2**

Notes: ND = Not Detected

NS = Not sampled
D = Results for Dilution
S = Recovery outside of control limits for this analyte

Bolded values indcate an exceedance of the New York State Department of Environmental Conservation (NYSDEC) Class GA Ambient Water Quality Standard.

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TABLE 5

EXTERIOR GROUNDWATER MONITORING WELL SAMPLE RESULTS FOR TARGET VOCs

Popular Hand Laundry, VCP 00170, 88 Ingraham Street, Brooklyn, New York

Well ID	Sampling Date	c-1,2-dichloroethene (ug/L)	Tetrachloroethene (ug/L)	Trichloroethene (ug/L)	Vinyl Chloride (ug/L)
MW-2	6/01/05	**14**	5	5	0.23
	9/28/09	NS	NS	NS	NS
	11/10/10	**83.9**	**182**	**67.6**	**50.1**
	2/28/11	**8.91**	2.17	2.46	ND
	11/3/11	**7.08**	ND	ND	ND
	2/28/12	4.81	ND	ND	ND
	5/29/12	**10.2**	ND	0.40	1.10
	8/16/12	**10.2**	ND	ND	ND
	11/20/12	**8.60**	ND	0.34	1.30
	2/21/12	**7.20**	ND	ND	ND
	5/30/13	**5.20**	ND	ND	0.61
	9/13/13	**6.90**	1.60	0.28	1.20
	12/12/13	**6.30**	ND	ND	1.00
	3/25/14	**6.72**	ND	ND	ND
	7/8/14	0.54	ND	ND	0.87
	9/11/14	0.55	ND	0.59	1.20
	1/15/15	4.30	ND	ND	ND
	5/14/15	4.10	ND	ND	ND
	8/21/15	**5.60**	ND	ND	ND
	12/03/15	ND	ND	ND	ND
	6/24/16	**12.0**	ND	ND	ND
	9/07/16	ND	ND	ND	ND
MW-3	9/28/09	NS	NS	NS	NS
	11/11/10	**1,420**	**12.4**	**56.5**	**253**
	2/28/11	**1,030**	**9.54**	**43.4**	**187**
	11/3/11	**1,270**	**11.0**	**70.3**	**281**
	2/28/12	**1,160**	**5.70**	**31.2**	**334**
	5/29/12	**1,940**	**91.8**	**266**	**441**
	8/15/12	**2,440**	**68.3**	**215**	**531**
	11/20/12	**1,980**	**12.1**	**62.6**	**415**
	2/21/13	**1,630**	**18.2**	**58.0**	**355**
	5/30/13	**1,280**	**7.40**	**13.6**	**187**
	9/13/13	**1,140**	4.90	ND	**283**
	12/12/13	**926**	**9.30**	ND	**212**
	3/25/14	**648**	**10.3**	ND	**199**
	7/8/14	**706**	**7.80**	**8.10**	**107**
	9/11/14	**616**	**9.60**	1.40	**137**
	1/15/15	**375**	**11.6**	2.90	**152**
	5/14/15	**330**	ND	ND	**57**
	8/21/15	**570**	**7.90**	**6.50**	**104**
	12/03/15	**250**	ND	ND	ND
	6/24/16	NS	NS	NS	NS
	9/7/16	NS	NS	NS	NS
NW-1 (20')	9/23/09	**962**	**60.1**	**68.0**	NA
	11/15/10	**5,480**	**607**	**746**	**6,000**
	2/28/11	**2,920**	**35.0**	**47.1**	**5,870**
	11/3/11	**65.7**	ND	**ND**	1.34
	2/28/12	**1,820**	**118**	**160**	**2,260**
	5/29/12	**6,040**	**367**	**871**	**4,000**
	8/15/12	**4,730**	**304**	**1,100**	**3,930**
	11/20/12	**4,440**	**233**	**1,160**	**3,450**
	2/21/13	**2,690**	**80.3**	**675**	**3,370**
	5/30/13	**2,900**	**377**	**1,200**	**1,950**
	9/13/13	**2,160**	**239**	**874**	**2,130**
	12/12/13	**3,960**	**463**	**1,680**	**3,920**
	3/28/14	**984**	**54**	**133**	**2,970**
	7/8/14	**530**	**31**	**67.9**	**812**
	9/11/14	**1,170**	**37**	**179**	**1,390**
	1/15/15	**1,480**	**80**	**380**	**1,560**
	5/15/15	**570**	**88**	**260**	**730**
	8/20/15	**2100**	**455**	**1270**	**1840**
	12/03/15	**3,000**	**760**	**2,300**	**2,500**
	6/24/2016	NS	NS	NS	NS
	9/7/2016	NS	NS	NS	NS
NW-1 (30')	9/23/09	**4,140**	**200**	**333**	NA
	11/15/10	**8,870**	**1,190**	**1,230**	**6,160**
	2/28/11	**7,140**	**283**	**227**	**4,330**
	11/3/11	**2,140**	**203**	**248**	**2,510**
	2/28/12	**3,000**	**528**	**490**	**2,550**
	5/29/12	**7,870**	**790**	**1,000**	**4,240**
	8/15/12	**6,070**	**446**	**999**	**4,490**
	11/20/12	**6,460**	**489**	**975**	**3,340**
	2/21/13	**4,730**	**312**	**651**	**3,860**
	5/30/13	**4,220**	**370**	**1,020**	**2,350**
	9/13/13	**4,780**	**535**	**1,290**	**3,090**
	12/12/13	**6,460**	**837**	**1,550**	**3,720**
	3/28/14	**5,750**	**432**	**801**	**4,880**
	7/8/14	**2,420**	**284**	**491**	**1,240**
	9/11/14	**4,230**	**581**	**865**	**1,710**
	1/15/15	**3,790**	**491**	**721**	**1,910**
	5/15/15	**3,200**	**860**	**1,400**	**1,900**
	8/20/15	**4,500**	**1110**	**1,710**	**2,010**
	12/3/2015	**4,300**	**860**	**1,400**	**1,600**
	6/24/2016	NS	NS	NS	NS
	9/7/2016	NS	NS	NS	NS
NYSDEC Groundwater Standards		**5**	**5**	**5**	**2**

Notes: ND = Not Detected

NS = Not sampled
D = Results for Dilution
S = Recovery outside of control limits for this analyte

Bolded values indcate an exceedance of the New York State Department of Environmental Conservation (NYSDEC) Class GA Ambient Water Quality Standard.

EnviroTrac

TABLE 5

EXTERIOR GROUNDWATER MONITORING WELL SAMPLE RESULTS FOR TARGET VOCs

Popular Hand Laundry, VCP 00170, 88 Ingraham Street, Brooklyn, New York

Well ID	Sampling Date	c-1,2-dichloroethene (ug/L)	Tetrachloroethene (ug/L)	Trichloroetlene (ug/L)	Vinyl Chloride (ug/L)
NW-1 (40')	9/23/09	**11,000**	**1,240**	**1,200**	NA
	11/15/10	**10,000**	**1,910**	**1,050**	**4,700**
	2/28/11	**111**	**185**	**53.6**	**10.40**
	11/3/11	**3,200**	**260**	**330**	**2,840**
	2/28/12	**3,620**	**429**	**436**	**2,570**
	5/29/12	**7,510**	**535**	**667**	**3,740**
	8/15/12	**6,630**	**462**	**815**	**4,390**
	11/20/12	**5,430**	**572**	**1,200**	**3,430**
	2/21/13	**3,240**	**220**	**619**	**3,200**
	5/30/13	**3,720**	**433**	**1,210**	**2,390**
	9/13/13	**4,320**	**686**	**1,460**	**2,990**
	12/12/13	**5,780**	**987**	**1,770**	**3,780**
	3/28/14	**5,470**	**488**	**1,000**	**7,250**
	7/8/14	**1,810**	**281**	**440**	**1,080**
	9/11/14	**2,920**	**595**	**814**	**1,710**
	1/15/15	**2,830**	**466**	**744**	**1,880**
	5/15/15	**2,500**	**1,000**	**1,400**	**1,800**
	8/20/15	**4,110**	**1,760**	**2,230**	**2,140**
	12/3/2015	**5,800**	**2,800**	**3,600**	**2,600**
	6/24/16	NS	NS	NS	NS
	9/07/16	NS	NS	NS	NS
NW-1 (50')	9/23/09	**6,670**	**53.7**	**122**	NA
	11/15/10	**180**	**25.6**	**15.8**	**51.0**
	2/28/11	**8,330**	**5.41**	**2.64**	**3,780**
	11/3/11	**3,400**	**332**	**297**	**3,000**
	2/28/12	**3,280**	**325**	**283**	**2,340**
	5/29/12	**8,910**	**506**	**513**	**4,690**
	8/15/12	**7,450**	**509**	**715**	**4,610**
	11/20/12	**6,420**	**489**	**708**	**3,120**
	2/21/13	**5,000**	**409**	**601**	**3,840**
	5/30/13	**4,770**	**351**	**742**	**2,250**
	9/13/13	**4,950**	**380**	**973**	**2,940**
	12/12/13	**5,780**	**475**	**1,010**	**3,850**
	3/28/14	**5,190**	**459**	**747**	**4,000**
	7/8/14	**2,730**	**358**	**568**	**1,330**
	9/11/14	**4,570**	**366**	**665**	**1,620**
	1/15/15	**5,560**	**366**	**657**	**2,350**
	5/15/15	**3,400**	**590**	**1,100**	**1,800**
	8/20/15	**4,430**	**683**	**1,260**	**1,890**
	12/3/2015	**4,400**	**490**	**1,200**	**1,900**
	6/24/16	NS	NS	NS	NS
	9/07/16	NS	NS	NS	NS
NW-2 (20')	9/23/09	**28.7**	4.39	2.08	NA
	11/15/10	**60.3**	**25.6**	**17.6**	**16.4**
	2/24/11	**16.9**	**35.7**	**8.03**	1.02
	11/3/11	1.98	2.47	0.99	ND
	2/28/12	1.03	ND	ND	ND
	5/29/12	2.70	0.37	0.43	0.45
	8/15/12	**5.30**	0.48	0.76	1.00
	11/19/12	**8.10**	0.52	1.10	1.10
	2/21/13	**8.60**	ND	1.60	ND
	5/29/13	**9.00**	0.80	2.20	0.74
	9/13/13	**11.1**	1.00	2.80	0.99
	12/12/13	**18.9**	2.20	**6.20**	**2.20**
	3/25/14	**94.3**	**46.7**	**47.8**	**14.4**
	7/8/14	**101**	**112**	**92.1**	**16.2**
	9/11/14	**234**	**236**	**223**	**36.0**
	1/16/15	**251**	**290**	**251**	**50.6**
	5/14/15	**86**	**160**	**120**	**15.0**
	8/20/15	**284**	**418**	**316**	**46.7**
	12/3/2015	**60**	**37**	**64**	ND
	6/24/16	**120 *S***	**200 *D***	ND	**21**
	9/07/16	**120**	**210 *D***	**130**	**17**
NW-2 (30')	9/23/09	**42.6**	**2.89**	2.64	NA
	11/15/10	**113**	**219**	**58.9**	**52.1**
	2/24/11	**88.6**	**126**	**30.9**	**4.50**
	11/3/11	1.30	ND	ND	ND
	2/28/12	**5.20**	ND	ND	ND
	5/29/12	**10.5**	0.73	1.60	0.76
	8/15/12	**9.80**	0.62	1.70	1.30
	11/19/12	**11.5**	0.51	1.60	1.20
	2/21/13	**12.7**	ND	1.90	ND
	5/29/13	**14.6**	1.00	3.00	**1.10**
	9/13/13	**15.9**	0.86	3.40	1.40
	12/12/13	**18.7**	1.20	4.60	**2.10**
	3/25/14	**76.9**	**19.1**	**29.5**	**8.30**
	7/8/14	**135**	**128**	**117**	**23.0**
	9/11/14	**204**	**187**	**187**	**32.9**
	1/16/15	**262**	**301**	**261**	**59.7**
	5/14/15	**130**	**220**	**160**	**22.0**
	8/20/15	**244**	**187**	**223**	**24.2**
	12/3/2015	**88**	**17**	**86**	ND
	6/24/16	**170 *S***	**110**	**130**	ND
	9/07/16	**190**	**430 D**	**250 D**	**30**
NYSDEC Groundwater Standards		**5**	**5**	**5**	**2**

Notes: ND = Not Detected

NS = Not sampled
D = Results for Dilution
S = Recovery outside of control limits for this analyte

Bolded values indcate an exceedance of the New York State Department of Environmental Conservation (NYSDEC) Class GA Ambient Water Quality Standard.

EnviroTrac

TABLE 5

EXTERIOR GROUNDWATER MONITORING WELL SAMPLE RESULTS FOR TARGET VOCs

Popular Hand Laundry, VCP 00170, 88 Ingraham Street, Brooklyn, New York

Well ID	Sampling Date	c-1,2-dichloroethene (ug/L)	Tetrachloroethene (ug/L)	Trichloroethene (ug/L)	Vinyl Chloride (ug/L)
NW-2 (40')	9/23/09	**56.1**	**6.49**	**5.50**	NA
	11/15/10	**195**	**263**	**82.2**	**77.8**
	2/24/11	**3,750**	**140**	**76.6**	**987**
	11/3/11	**1,840**	**128**	**205**	**2,710**
	2/28/12	**62.2**	ND	ND	**9.19**
	5/29/12	**173**	ND	0.51	**14.2**
	8/15/12	**185**	ND	0.48	**13.4**
	11/19/12	**131**	ND	ND	**32.9**
	2/21/13	**78.1**	ND	ND	**40.9**
	5/30/13	**93.1**	ND	ND	**9.20**
	9/13/13	**122**	ND	ND	**17.4**
	12/12/13	**141**	ND	ND	**37.1**
	3/25/14	**146**	ND	ND	**9.20**
	7/8/14	**1.7**	ND	ND	**8.70**
	9/11/14	**133**	ND	ND	**10.3**
	1/16/15	**143**	ND	0.34	**15.4**
	5/15/15	**120**	ND	ND	**5.5**
	8/21/15	**143**	ND	ND	ND
	12/3/2015	**160**	ND	ND	ND
	6/24/16	**32** ***S***	**20**	ND	**93**
	9/07/16	**25**	ND	ND	**96**
NW-2 (50')	9/23/09	**48.4**	3.06	2.49	NA
	11/15/10	**7,190**	**115**	**166**	**3,890**
	2/24/11	**659**	**219**	**130**	**90.7**
	11/3/11	**11.0**	ND	ND	ND
	2/28/12	**6.60**	ND	ND	ND
	5/29/12	**12.5**	ND	ND	ND
	8/15/12	**14.1**	ND	0.29	ND
	11/19/12	**17.0**	ND	0.41	ND
	2/21/13	**14.2**	ND	**ND**	ND
	5/30/13	**12.7**	ND	ND	ND
	9/13/13	**9.50**	ND	ND	ND
	12/12/13	**17.0**	ND	ND	ND
	3/25/14	**22.1**	ND	ND	ND
	7/8/14	**7.50**	ND	ND	ND
	9/11/14	**8.30**	ND	ND	ND
	1/16/15	**8.70**	ND	0.26	0.57
	5/15/15	**7.40**	ND	ND	ND
	8/20/15	ND	**14.2**	**8.70**	ND
	12/3/15	**14**	ND	ND	ND
	6/24/16	**24**	ND	ND	ND
	9/07/16	**20**	ND	ND	ND
NYSDEC Groundwater Standards		5	5	5	2

Notes:

ND = Not Detected

NS = Not sampled

D = Results for Dilution

S = Recovery outside of control limits for this analyte

Bolded values indcate an exceedance of the New York State Department of Environmental Conservation (NYSDEC) Class GA Ambient Water Quality Standard.

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Table 6
Soil Gas Sample Results
Popular Hand Laundry
88 Ingraham Street
Brooklyn, New York
NYSDEC Site No. V00170

Sample ID	SG-1 (0'-8')	SG-2 (0'-8')	SG-3 (0'-8')	SG-4 (0'-8')
Sample Date	**10/21/2004**			
Sample Units	**ug/m3**			
Trichloroethene	2,526	18	81	123
cis-1,2-Dichloroethene	2,260	1,189	14	265
Tetrachloroethene	6,104	3,459	5,358	427
Vinyl Chloride	46	28	9	1

Compound	SS1	SS2	SS3	SS4
Sample Date	**6/22/2006**			
Sample Units	**ug/m3**			
1, 1-Dichloroethylene	858	112 J	ND	ND
trans-1, 2-Dichlorothylene	1,460	737	165	ND
cis-1,2-Dichlororethane	28,200	16,900	1,390	ND
1, 1, 1-Trichloroethane	2,010	ND	ND	8
Trichloroethene	45,200	37,100	2,880	44
Tetrachloroethene	75,300	572,000	43,000	1,270
Chloroform	400	874	77 J	39
Carbon Tetrachloride	ND	ND	ND	52

Sample ID	VP-1	VP-2	VP-3	VP-5
Sample Date	**2/10/2016**			
Sample Units	**ug/m3**			
Acetone	24.1 DS	93.8 DS	1,100 DS	176,000 DS*
Benzene	2.81 D	1.6 D	ND	ND
Chloroform	9.18 D	4.59 D	ND	ND
Chloromethane	ND	1.57 D	ND	ND
1,1-Dichloroethane	11 D	ND	27.5 D	ND
1,2-cis-Dichloroethene	55.7 D	ND	132 D	ND
1,2-trans-Dichloroethene	88.3 D	ND	24.6 D	ND
Dichlorodifluoromethane	2.18 D	8.31 D	ND	ND
Ethylbenzene	2.87 D	2.43 D	ND	ND
Methyl ethyl ketone	58.9 D	91.7 D	3,210 D	595,000 D*
Methyl isobutyl ketone	ND	3.93 D	ND	ND
Methylene Chloride	ND	3.57 D	ND	ND
Tetrachloroethene	1,010 D	8.14 D	63.8 D	ND
Toluene	14.4 D	17.5 D	ND	ND
1,1,1-Trichloroethane	ND	4.58 D	ND	ND
Trichloroethene	411 DcS	ND	57 DcS	ND
Trichlorofluoromethane	ND	5.62 D	ND	ND
1,2,4-Trimethylbenzene	ND	3.74 D	ND	ND
m&p-Xylenes	6.34 D	9.38 D	ND	ND
o-Xylenes	ND	3.56 D	ND	ND

Notes:
Only detected analytes are reported.
ug/m3 = micrograms per cubic meter of air
ND = Not Detected
D = Results for Dilution
c, S, J = Value estimated
* = Elevated levels due to use of PVC primer and glue during well installation.
Yellow shaded values indicate that mitigation is required as per the New York State Department of Health (NYSDOH) Matrices.

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Table 7
Indoor and Ambient Air Results
Popular Hand Laundry
88 Ingraham Street
Brooklyn, New York
NYSDEC Site No. V00170

Compound	Air-1	NYSDOH Indoor Air Guidance Value
Sample Date	**10/21/2004**	
Sample Units	**ug/m3**	
1, 1, 1-Trichloroethane	0.7 J	-
Tetrachloroethene	0.9	30
Toluene	0.6 J	-
Methylene Chloride	**880 E**	60

Compound	Indoor 1	Indoor 2	Ambient	NYSDOH Indoor Air Guidance Value
Sample Date	**6/22/2006**			
Sample Units	**ug/m3**			
cis-1,2-Dichlororethane	2	1.4	0.63 J	-
1, 1, 1-Trichloroethane	0.43 J	0.65 J	ND	-
Trichloroethene	**3**	1	0.75 J	2
Tetrachloroethene	29	12	8	30
Chloroform	ND	0.35 J	0.37 J	-
Chloromethane	1.2	1.1	1.1	-
Carbon Tetrachloride	0.57 J	0.6	1	-
Methylene Chloride	4	5	4	60

Sample ID	IA-1	IA-2	IA-3	IA-5	OA-1	NYSDOH Indoor Air Guidance Values
Sample Date	**2/10/2016**					
Sample Unit s	**ug/m3**					
Acetone	660 DS	84 D	52.80	49.20	17.10	-
Benzene	1.98	1.73	1.60	1.57	1.15	-
Chloroform	2.98	1.03	ND	ND	0.98	-
Chloromethane	1.03	1.78	1.88	1.67	1.71	-
Dichlorodifluoromethane	7.12	4.10	4.01	4.10	4.50	-
Ethylbenzene	1.39	3.69	2.00	1.56	ND	-
Isopropanol	ND	66.60	ND	17.90	ND	-
Methyl ethyl ketone	2,240 D	14.00	3.57	3.19	1.86	-
Methyl isobutyl ketone	3.28	10.20	6.88	4.96	ND	-
Methylene Chloride	10.90	28.50	18.30	15.90	26.50	60
Methyl tert butyl ether	0.90	1.51	1.73	1.30	2.13	-
Styrene	ND	1.41	1.15	1.02	ND	-
Tetrachloroethene	10.70	16.10	ND	ND	ND	30
Toluene	11.80	37.40	28.40	26.70	7.57	-
Trichloroethene	**7.52 cS**	ND	ND	ND	ND	2
Trichlorofluoromethane	3.77	2.59	2.64	2.47	2.75	-
1,2,4-Trimethylbenzene	ND	3.24	1.97	1.62	ND	-
1,3,5-Trimethylbenzene	ND	1.43	ND	ND	ND	-
m&p-Xylenes	4.78	13.50	7.08	5.99	2.17	-
o-Xylenes	1.78	5.21	2.13	1.95	ND	-

Notes:
Only detected analytes are reported.
ug/m3 = micrograms per cubic meter of air
ND = Not Detected
c, S, J = Value estimated
E = Concentration exceeds instrument calibration limits. Value is estimated.
Bold values indicate an exceedance of the New York State Department of Health (NYSDOH) Indoor Air Guidance Value.
Yellow shaded values indicate that mitigation is required as per the NYSDOH Matrices.

EnviroTrac

FIGURES

north

THREE STORY
BRICK BUILDING

ONE STORY BRICK
BUILDING

SIDEWALK

INGRAHAM STREET

SIDEWALK

E-VAULT

F.H.

ONE STORY BRICK
BUILDING

TWO STORY
BUILDING

GARAGE
(1-STORY)

ONE STORY FRAME
AND CONCRETE
BUILDING

TWO STORY
BUILDING

PARKING AREA

LEGEND:

PROPERTY BOUNDARY

F.H. FIRE HYDRANT

EnviroTrac
ENVIRONMENTAL SERVICES
5 OLD DOCK ROAD, YAPHANK, NEW YORK 11980
PHONE: (631)924-3001 FAX: (631)924-5001

0 20
SCALE IN FEET

DATE: 8/31/2016

REVISED BY: BS

POPULAR HAND LAUNDRY
88 INGRAHAM STREET
BROOKLYN, NEW YORK

SITE PLAN

FIGURE #
1

north

THREE STORY
BRICK BUILDING

PARKING AREA

ONE STORY
BRICK BUILDING

SIDEWALK

SB-1

SB-2

SB-3

SB-4

F.H.

SB-1A

SB-5/SB-3A

SB-2A

SB-4A

PARKING AREA

INGRAHAM STREET

E-VAULT

GP-4

SIDEWALK

SAMPLE ID:	S-1(6'-7')	NYSDEC
DATE SAMPLED:	1996-1997	UUSCO
COMPOUND	RESULT	
DCE	**9,500**	**250**
VC	**140**	**20**

SAMPLE ID:	GP-2(0'-2')	NYSDEC
DATE SAMPLED:	1996-1997	UUSCO
COMPOUND	RESULT	
PCE	**11,000**	**1,300**

ONE STORY
BRICK BUILDING

GP-2

FORMER DRY CLEANER

STORM WATER PIPE

COMPRESSOR
AND BLOWER

TO SEWER MAIN

LIFT
AREA

WASHER

WASHER

S-1

BASEMENT

S-2

SS-3

G-3

DRYER

DRYER

GP-1

G-2

SVE-1

AS-1

(2-STORY)

SS-4

B-5

B-4

SS-2

TROUGH

WASHER

DRYER

OVERHEAD PRESSING

TROUGH

WASHER

STORM WATER PIPE

DRYER

PRESSING AREA

GARAGE
(1-STORY)

G-1

SS-1

B-6

BOILER
ROOM

GP-3

ABANDONED
3,000-GAL. UST

AIR COMPRESSOR

SAMPLE ID:	G-1(0'-4')	G-1(4'-8')	G-1(8'-12')	NYSDEC
DATE SAMPLED:	12/2005	12/2005	12/2005	UUSCO
COMPOUND	RESULT	RESULT	RESULT	
DCE	**325**	52	84	**250**
PCE	**19,400**	26	74	**1,300**
TCE	296	17	19	**470**
VC	2.87	1.17	1.17	**20**

SAMPLE ID:	B-4(0'-4')	B-4(4'-8')	B-4(8'-12')	NYSDEC
DATE SAMPLED:	12/2005	12/2005	12/2005	UUSCO
COMPOUND	RESULT	RESULT	RESULT	
DCE	32.9	6	4	**250**
PCE	**5,730**	59	46	**1,300**
TCE	249	11	4	**470**
VC	**32.9**	1.12	1.12	**20**

LEGEND:

- PROPERTY BOUNDARY
- F.H. FIRE HYDRANT
- SOIL SAMPLE
- SOIL & GROUNDWATER SAMPLE
- DCE CIS-1,2-DICHLOROETHENE
- PCE TETRACHLOROETHYLENE
- TCE TRICHLOROETHYLENE
- VC VINYL CHLORIDE
- CVOCs CHLORINATED VOLATILE ORGANIC COMPOUNDS
- BOLDED VALUE EXCEEDS NYSDEC UNRESTRICTED USE SOIL CLEANUP OBJECTIVES (UUSCOs)
- ALL RESULTS GIVEN IN µg/kg

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0 15
SCALE IN FEET

DATE: 8/31/2016

REVISED BY: BS

POPULAR HAND LAUNDRY
88 INGRAHAM STREET
BROOKLYN, NEW YORK

HISTORICAL SOIL SAMPLE TARGET CVOC RESULTS ABOVE NYSDEC UUSCOs

FIGURE #
2

north

THREE STORY
BRICK BUILDING

PARKING AREA

ONE STORY
BRICK BUILDING

SIDEWALK

MW-3

F.H.

NW-1

INGRAHAM STREET

SIDEWALK

SVE/AS
REMEDIATION
SHED

E-VAULT

OA-1

NW-2

MW-2

ONE STORY
BRICK BUILDING

VP-2/IA-2

G-2

VP-1/IA-1

AS-3

SV-6/MW-6

SV-5/MW-5

(2-STORY)

AS-4

VP-4

MW-4

GARAGE
(1-STORY)

VP-5/IA-5/IA-5D

VP-3/IA-3

PARKING AREA

LEGEND:

- PROPERTY BOUNDARY
- F.H. FIRE HYDRANT
- MONITORING WELL
- GROUNDWATER SAMPLE
- VAPOR PROBE/INDOOR AIR/ OUTDOOR AIR SAMPLE

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POPULAR HAND LAUNDRY
88 INGRAHAM STREET
BROOKLYN, NEW YORK

RECENT SAMPLE LOCATIONS

FIGURE #
3

north

WELL ID:	MW-3	NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	12/3/2015	
COMPOUND	RESULT	
DCE	**250**	**5**

WELL ID:	SV-6	MW-6	NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	12/3/2015	12/3/2015	
COMPOUND	RESULT	RESULT	
DCE	**19**	**63**	**5**

WELL ID:	G2	NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	12/3/2015	
COMPOUND	RESULT	
DCE	**29**	**5**

WELL ID:	AS-3	NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	12/3/2015	
COMPOUND	RESULT	
DCE	**13**	**5**

WELL ID:	NW-2(20')	NW-2(30')	NW-2(40')	NW-2(50')	NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	9/7/2016	9/7/2016	9/7/2016	9/7/2016	
COMPOUND	RESULT	RESULT	RESULT	RESULT	
DCE	**120**	**190**	**25**	**20**	**5**
PCE	**210 D**	**430 D**	ND	ND	**5**
TCE	**130**	**250 D**	ND	ND	**5**
VC	**17**	**30**	**96**	ND	**2**

WELL ID:	NW-1(20')	NW-1(30')	NW-1(40')	NW-1(50')	NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	12/3/2015	12/3/2015	12/3/2015	12/3/2015	
COMPOUND	RESULT	RESULT	RESULT	RESULT	
DCE	**3,000**	**4,300**	**5,800**	**4,400**	**5**
PCE	**760**	**860**	**2,800**	**490**	**5**
TCE	**2,300**	**1,400**	**3,600**	**1,200**	**5**
VC	**2,500**	**1,600**	**2,600**	**1,900**	**2**

WELL ID:	MW-2	NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	9/7/2016	
COMPOUND	RESULT	
DCE	ND	**5**
PCE	ND	**5**
TCE	ND	**5**
VC	ND	**2**

WELL ID:	AS-4	NYSDEC GROUNDWATER STANDARDS
DATE SAMPLED:	12/3/2015	
COMPOUND	RESULT	
DCE	**86**	**5**

PARKING AREA

SIDEWALK

MW-3

ONE STORY
BRICK BUILDING

INGRAHAM STREET

SIDEWALK

NW-2

E-VAULT

F.H.

NW-1

PARKING AREA

(2-STORY)

SV/MW-6

AS-3

G-2

SV/MW-5

REGIONAL GROUNDWATER FLOW DIRECTION

AS-4

MW-4

MW-2

GARAGE
(1-STORY)

LEGEND:

PROPERTY BOUNDARY	
F.H.	FIRE HYDRANT
	MONITORING WELL
DCE	CIS-1,2-DICHLOROETHENE
PCE	TETRACHLOROETHYLENE
TCE	TRICHLOROETHYLENE
VC	VINYL CHLORIDE
S	RECOVERY OUTSIDE OF CONTROL LIMITS FOR THIS ANALYTE
D	RESULTS FOR DILUTION
ND	NOT DETECTED
CVOCs	CHLORINATED VOLATILE ORGANIC COMPOUNDS
	ALL RESULTS GIVEN IN µg/L

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POPULAR HAND LAUNDRY
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BROOKLYN, NEW YORK

GROUNDWATER SAMPLE RESULTS ABOVE NYSDEC GROUNDWATER STANDARDS

FIGURE # 4

north

SAMPLE ID:	SG-4(0'-8')
DATE SAMPLED:	10/21/2004
COMPOUND	RESULT
DCE	265
PCE	427
TCE	123
VC	0.87

SAMPLE ID:	SS-3
DATE SAMPLED:	6/22/2006
COMPOUND	RESULT
DCE	1,390
PCE	43,000
TCE	2,880

SAMPLE ID:	INDOOR-2
DATE SAMPLED:	6/22/2006
COMPOUND	RESULT
DCE	1.4
PCE	12
TCE	1

SAMPLE ID:	SG-3(0'-8')
DATE SAMPLED:	10/21/2004
COMPOUND	RESULT
DCE	14
PCE	5,358
TCE	81
VC	8.94

SAMPLE ID:	VP-2
DATE SAMPLED:	2/10/2016
COMPOUND	RESULT
DCE	ND
PCE	8.14 D
TCE	ND

SAMPLE ID:	IA-2
DATE SAMPLED:	2/10/2016
COMPOUND	RESULT
DCE	ND
PCE	16.1
TCE	ND

SAMPLE ID:	OA-1
DATE SAMPLED:	2/10/2016
COMPOUND	RESULT
DCE	ND
PCE	ND
TCE	ND

SAMPLE ID:	VP-1
DATE SAMPLED:	2/10/2016
COMPOUND	RESULT
DCE	55.7 D
PCE	1,010 D
TCE	411 DcS

SAMPLE ID:	IA-1
DATE SAMPLED:	2/10/2016
COMPOUND	RESULT
DCE	ND
PCE	10.7
TCE	7.52 cS

SAMPLE ID:	AMBIENT
DATE SAMPLED:	6/22/2006
COMPOUND	RESULT
DCE	0.63 J
PCE	8
TCE	0.75 J

SAMPLE ID:	SS-4
DATE SAMPLED:	6/22/2006
COMPOUND	RESULT
PCE	1,270
TCE	44

SAMPLE ID:	SS-2
DATE SAMPLED:	6/22/2006
COMPOUND	RESULT
DCE	16,900
PCE	572,000
TCE	37,100

SAMPLE ID:	SS-1
DATE SAMPLED:	6/22/2006
COMPOUND	RESULT
DCE	28,200
PCE	75,300
TCE	45,200

SAMPLE ID:	SG-1(0'-8')
DATE SAMPLED:	10/21/2004
COMPOUND	RESULT
DCE	2,260
PCE	6,104
TCE	2,526
VC	46

SAMPLE ID:	SG-2(0'-8')
DATE SAMPLED:	10/21/2004
COMPOUND	RESULT
DCE	1,189
PCE	3,459
TCE	18.27
VC	28

SAMPLE ID:	VP-5
DATE SAMPLED:	2/10/2016
COMPOUND	RESULT
DCE	ND
PCE	ND
TCE	ND

SAMPLE ID:	IA-5
DATE SAMPLED:	2/10/2016
COMPOUND	RESULT
DCE	ND
PCE	ND
TCE	ND

SAMPLE ID:	INDOOR-1
DATE SAMPLED:	6/22/2006
COMPOUND	RESULT
DCE	2
PCE	29
TCE	3

SAMPLE ID:	VP-3
DATE SAMPLED:	2/10/2016
COMPOUND	RESULT
DCE	132 D
PCE	63.8 D
TCE	57 DcS

SAMPLE ID:	IA-3
DATE SAMPLED:	2/10/2016
COMPOUND	RESULT
DCE	ND
PCE	ND
TCE	ND

SIDEWALK

INGRAHAM STREET

SIDEWALK

ONE STORY BRICK BUILDING

E-VAULT

(2-STORY)

GARAGE (1-STORY)

OA-1

SG-4

SS-3

SG-3

VP-2/IA-2

AIR-1

VP-1/IA-1

INDOOR-2

AMBIENT

SS-4

SS-2

VP-4

SG-1

INDOOR-1

SS-1

VP-5/IA-5/IA-5D

SG-2

VP-3/IA-3

LEGEND:

- PROPERTY BOUNDARY
- SUB-SLAB SAMPLE
- VAPOR PROBE/INDOOR AIR/ OUTDOOR AIR SAMPLE
- AMBIENT AIR SAMPLE
- DCE CIS-1,2-DICHLOROETHENE
- PCE TETRACHLOROETHYLENE
- TCE TRICHLOROETHYLENE
- VC VINYL CHLORIDE
- J ESTIMATED VALUE
- c,S ESTIMATED VALUE
- D RESULTS FOR DILUTION
- ND NOT DETECTED
- CVOCs CHLORINATED VOLATILE ORGANIC COMPOUNDS
- ALL RESULTS GIVEN IN µg/m3

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0 15
SCALE IN FEET

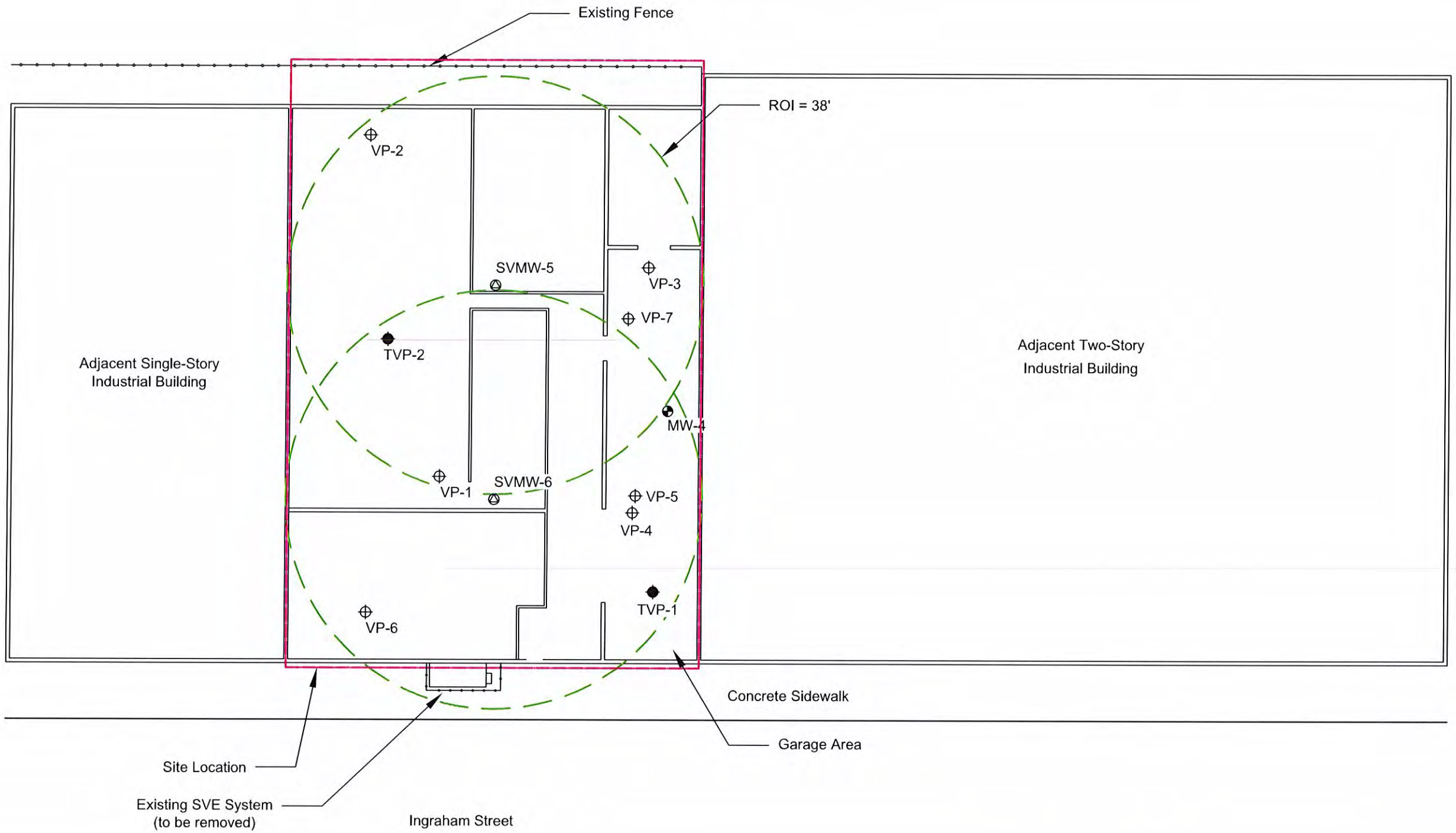
DATE: 9/6/2016

REVISED BY: BS

POPULAR HAND LAUNDRY
88 INGRAHAM STREET
BROOKLYN, NEW YORK

HISTORICAL AND RECENT SOIL VAPOR SAMPLE AND INDOOR/AMBIENT AIR RESULTS

FIGURE # 5



STATE OF NEW YORK
DALE C. KONAS
LICENSED PROFESSIONAL ENGINEER
No. 081035

7/19/17

SCALE: 0 5' 10' 15' 20' SCALE IN FEET

DATE:	FIGURE:	DRAFTED BY:
04/21/17	6	NC/DK

MAP: Detailed Site Plan with SSDS Radius of Influence

SITE: Popular Hand Laundry
88 Ingraham Street
Brooklyn, NY 10452

LEGEND:
- Radius of Influence
- Existing Monitoring Well Location
- Existing Vapor Extraction Location
- Existing Vapor Point Location
- Temporary Vapor Point Location

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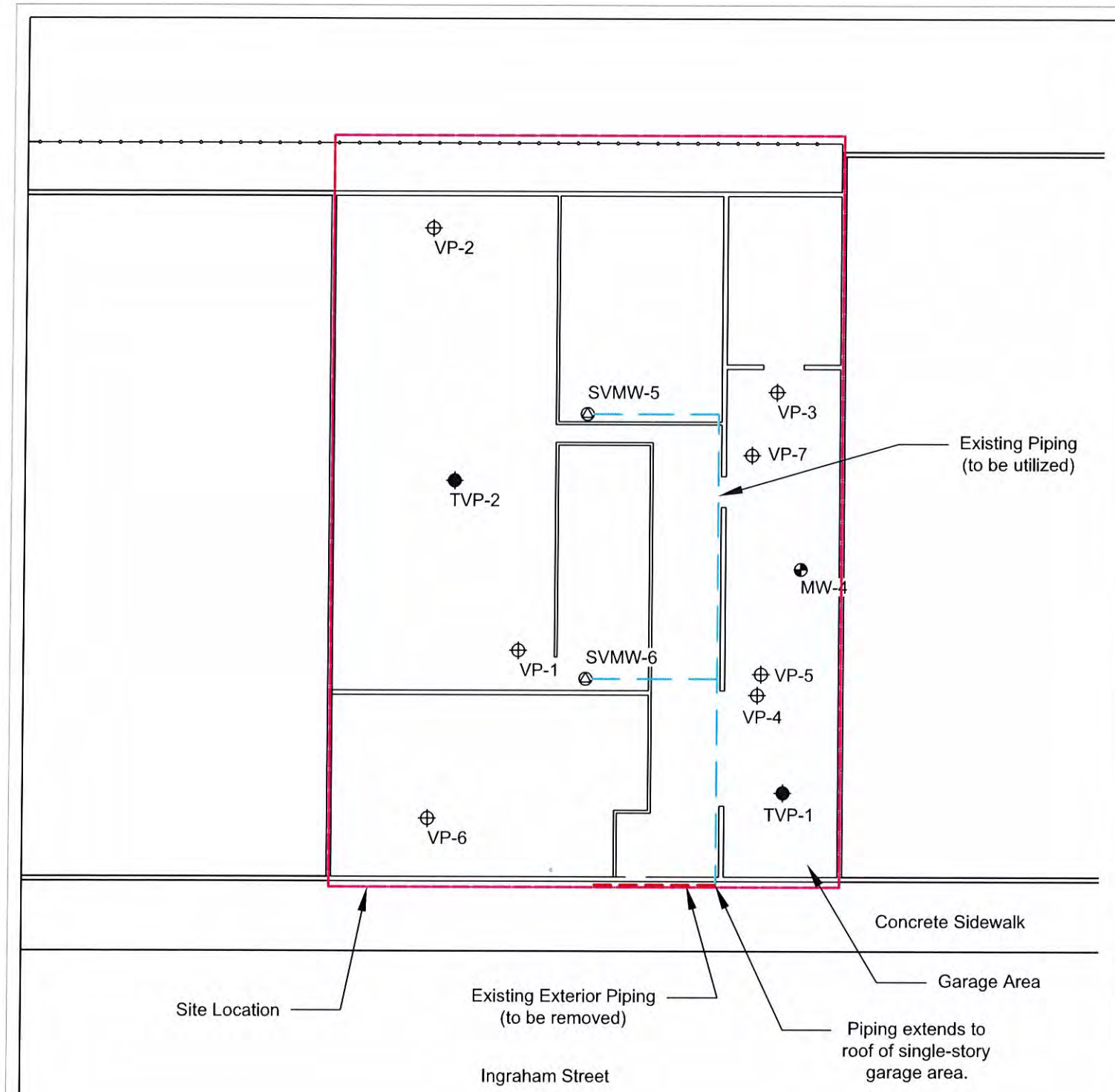
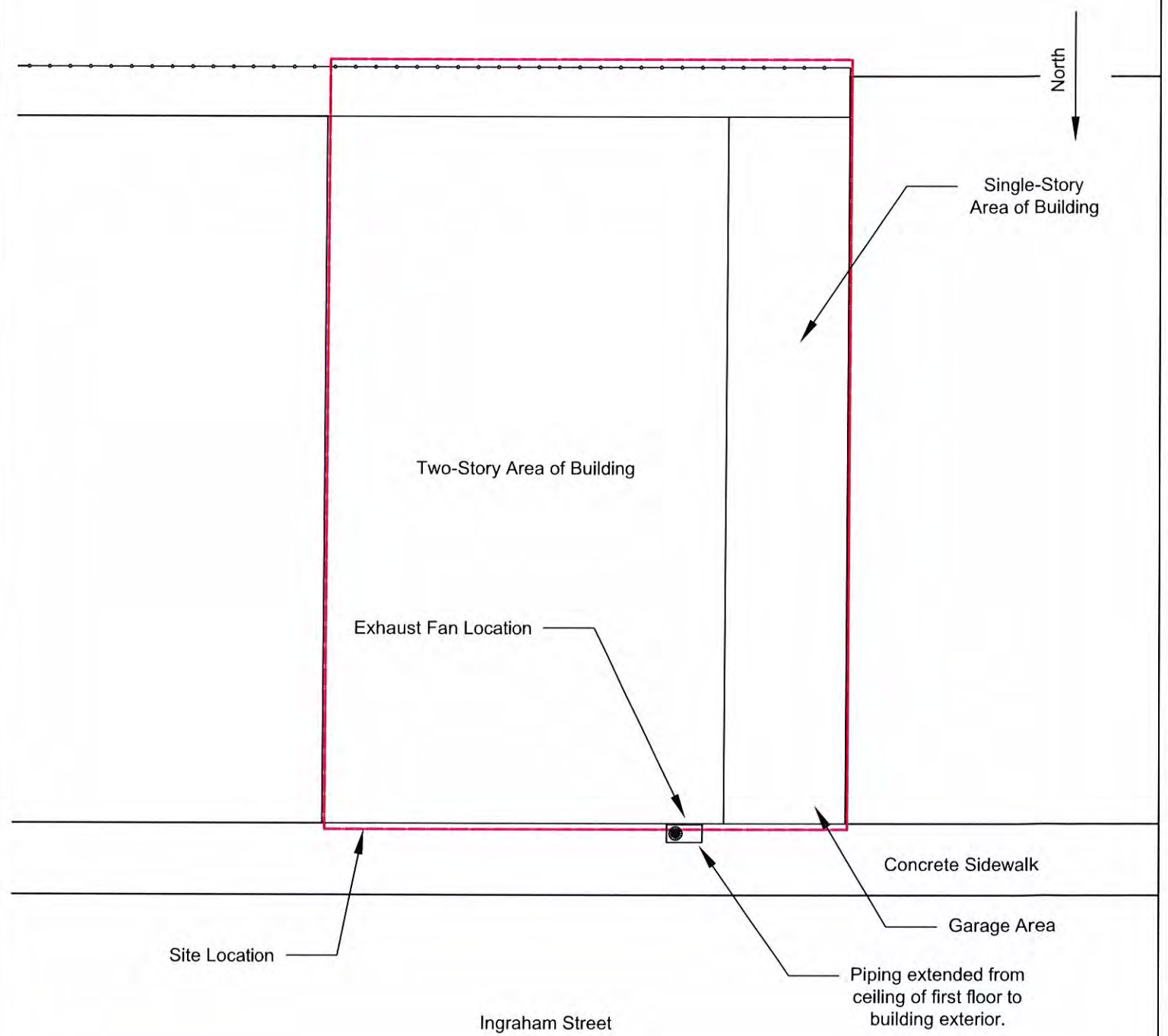


First Floor Piping Plan



Second Floor Piping Plan

STATE OF NEW YORK
DALE C. KONAS
No. 081035
LICENSED PROFESSIONAL ENGINEER
7/19/17

SCALE: 0 5' 10' 15' 20' SCALE IN FEET

LEGEND:
- SSDS Fan Location
- SSDS Piping
- Site Boundary

DATE:	FIGURE:	DRAFTED BY:
04/21/17	7	NC/DK

MAP: As-Built SSDS Piping Layout

SITE: Popular Hand Laundry
88 Ingraham Street
Brooklyn, NY 10452

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ENVIRONMENTAL SERVICES
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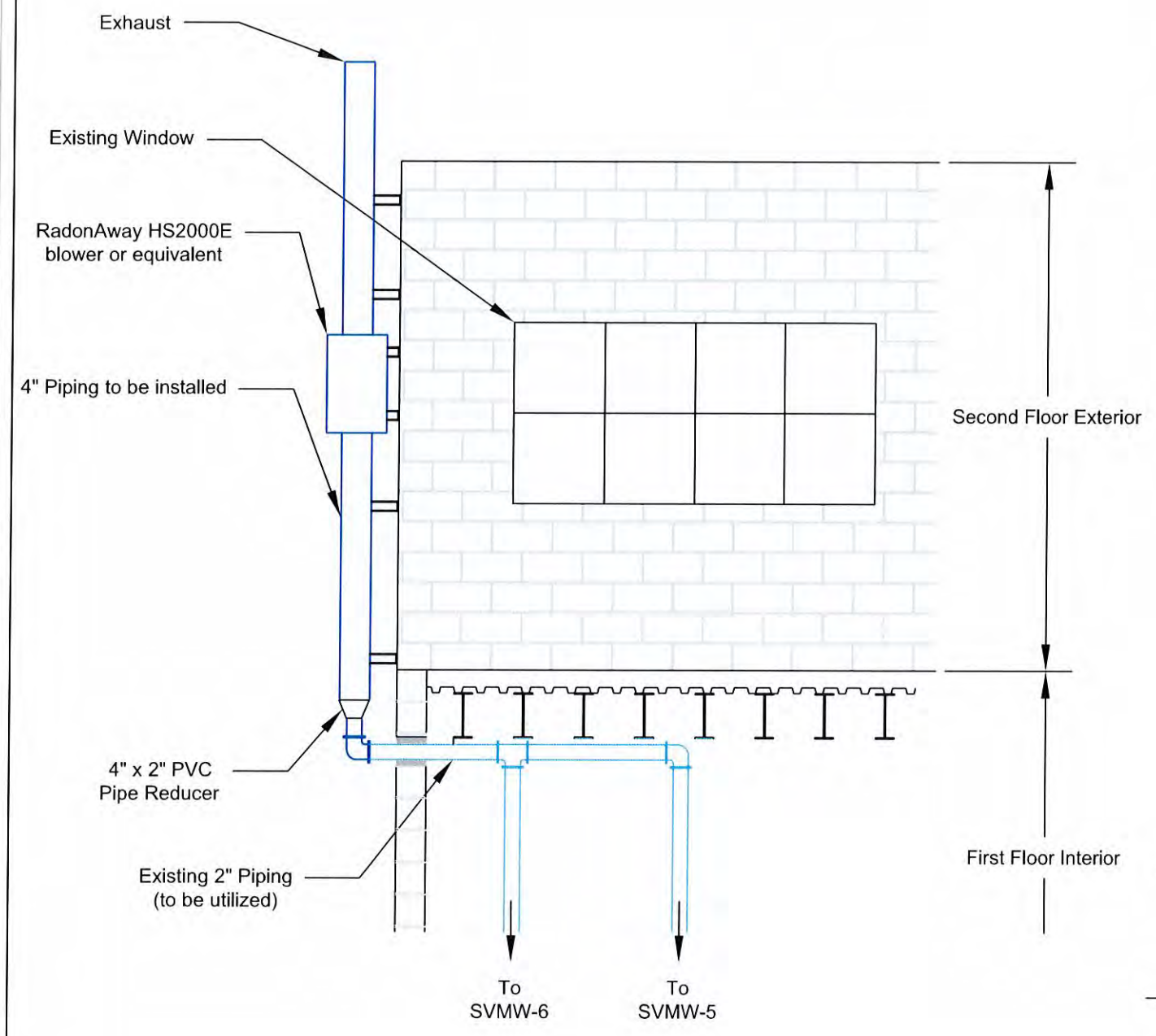
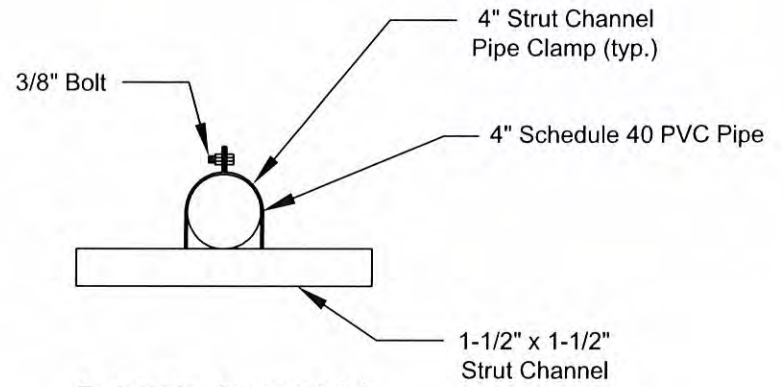
General Notes:

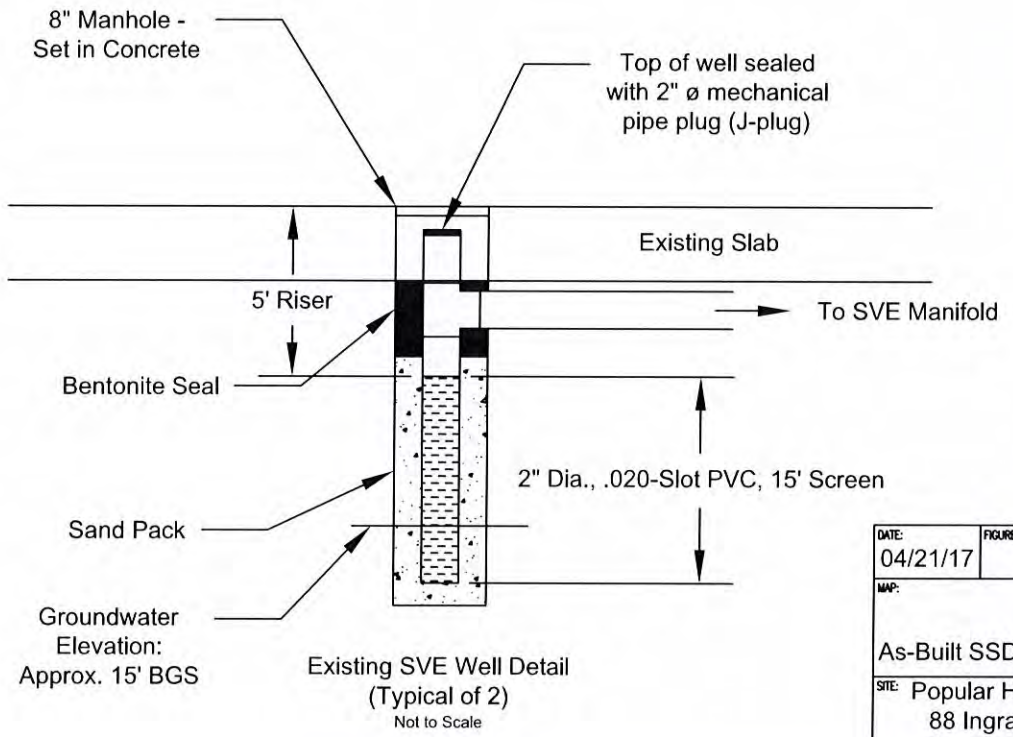
1. To retard soil gas entry, large openings through concrete slabs, wood, and other floor assemblies in contact with the soil, such as spaces around bathtub, shower, or toilet drains, will be filled or closed with materials that provide a permanent airtight seal such as non-shrink mortar, grouts, expanding foam, or similar material designed for such application. Smaller gaps around all pipes, wire, or other objects that penetrate the concrete slab or other floor assembly will be made airtight with an elastomer joint sealant or polyethylene tape, as defined in ASTM C920-87, and applied in accordance with the manufacturer's recommendations. All control joints, isolation joints and any other joints in concrete slabs or between slabs and foundation walls will be sealed. Joints, cracks, or other openings around all penetrations exterior walls below the ground surface will be sealed with an elastometric sealant that provides an airtight seal.
2. Exhaust piping will terminate at least 12 inches above the surface of the roof, in a location at least 10 feet away from any window or other opening into the conditioned spaces of the building or any adjoining or adjacent builing that is less than 2 feet below the exhaust point.
3. The in-line vacuum blower will be installed on the western exterior wall as depicted in "Proposed SSDS Piping Layout", Figure 2. The blower will be a RadonAway HS2000E blower with electrical switch box capable of 72 CFM at 10" WC, or equivalent. The fan is to be installed as per the manufacturer's specifications.
4. All components of the sub slab depressurization system will be in accordance with ASTM E 2121-12 "Standard Practice for Installing Radon Mitigation Systems in Existing Low-rise Residential Buildings".



SSDS Point Detail
(Typical of 2)
Not to Scale



Typical Pipe Support Detail
Not to Scale



Existing SVE Well Detail
(Typical of 2)
Not to Scale

STATE OF NEW YORK
DALE C. KONAS
LICENSED PROFESSIONAL ENGINEER
No. 081035

3/19/17

DATE:	FIGURE:	DRAFTED BY:
04/21/17	8	NC/DK

MAP:

As-Built SSDS Piping Details

SITE: Popular Hand Laundry
88 Ingraham Street
Brooklyn, NY 10542

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Attachment E5 d
Title Pgs, Text, Tables, & Figures, and App J (sewer maps_
Feb 2015 Site Characterization Report
Ingraham Street Sidewalk Plume Site (upgradient site)
65 pages

Shaw Environmental & Infrastructure Engineering of New York, P.C.

13 British American Boulevard
Latham, NY 12110-1405
518.783.1996
Fax 518.783.8397

FINAL
SITE CHARACTERIZATION REPORT, REV. 2

Ingraham Street Sidewalk Plume Trackdown
Ingraham Street
East Williamsburg, Kings County, New York 11206
Site Number 224142
Contract Work Authorization Number: D006132-15

CB&I Project No.: 134685.15

February 2015

Prepared for:

Javier Perez, Environmental Engineer
New York State Department of Environmental Conservation
Division of Environmental Remediation
Remedial Bureau B, Section B
625 Broadway, Albany, NY 12233-7016

Submitted by:

Shaw Environmental & Infrastructure Engineering of New York, P.C.
13 British American Boulevard
Latham, New York, 12110

I, David C. Stoll, certify that I am currently a Qualified Environmental Professional as defined in 6 NYCRR Part 375and that this Report was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and that all activities were performed in full accordance with the DER-approved work plan and any DER-approved modifications.

David C. Stoll
Printed Name of Professional Geologist

David Stoll
Signature of Professional Geologist

Registration Number: 1432 State: PA

Date: 2/3/15

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G Groundwater Field Data Sheets
H Data Usability Summary Reports (DUSR) – Data Validation Services
I Waste Disposal Manifest
J New York City Sewer Maps

Acronyms and Abbreviations

µg/L	Microgram per liter
1,1,1-TCA	1,1,1-trichloroethane
1,1-DCE	1,1,-dichloroethene
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
CERCLIS	Comprehensive Environmental Response, Compensation and Liability Information System
Chemtech	Chemtech Consulting Group,
Cis-1,2-DCE	cis-1,2-dichloroethene
COC	chain-of-custody
D&B	Dvirka and Bartilucci Consulting Engineers
DER	Department of Environmental Remediation
DO	dissolved oxygen
DPT	direct push technology
DUSR	Data Usability Summary Report
DVS	Data Validation Services
ECD	electron capture detector
EDR	Environmental Data Resources
FAP	Field Activities Plan
FID	flame ionization detector
FINDS	Facility Index System/Facility Registry System
Hirani	Hirani Engineering & Land Surveying, P.C.
HIST UST	Historic Underground Storage Tank
HP	horse power
IRT	Innovative Recycling Technologies, Inc.
MEG	Miller Environmental Group
mg/kg	milligram per kilogram
MIP	Membrane Interface Probe
MS/MSD	matrix spike/matrix spike duplicate
MSL	Mean Sea Level
MTBE	methyl t-butyl ether
NAD	North American Datum
NAVD	North American Vertical Datum
NPL	National Priority List
NYSDEC	New York State Department of Environmental Conservation

NYSDOH	New York State Department of Health
NYSGWQS	New York State Groundwater Quality Standards
OM&M	operation, monitoring and maintenance
ORP	oxidation reduction potential
PBS	petroleum bulk storage
PCE	tetrachloroethene
PID	Photoionization Detector
ppb	parts per billion
ppm	parts per million
QAPP	Quality Assurance Project Plan
QA/QC	quality assurance and quality control
RCRA-NonGen	Resource Conservation and Recovery Act (RCRA). Non-Generators
RIs	Remedial Investigations
SC	Site Characterization
SCO	soil cleanup objectives
SVOCs	semi-volatile organic compounds
Shaw	Shaw Environmental & Infrastructure Engineering of New York, P.C.
SVE/AS	soil vapor extraction/air sparge
TCE	trichloroethene
Trans-1,2-DCE	trans-1,2-DCE
Tyree	Tyree Environmental Corporation
USEPA	United States Environmental Protection Agency
UST	underground storage tank
UUSCO	Unrestricted Use Soil Cleanup Objectives
VCA	Voluntary Cleanup Agreement
VCP	Voluntary Cleanup Program
VOCs	volatile organic compounds
WA	Work Authorization
YSI	Yellow Springs Instrument
Zebra	Zebra Environmental, Inc.

1.0 INTRODUCTION

Shaw Environmental & Infrastructure Engineering of New York, P.C. (Shaw), has prepared this Site Characterization (SC) Report summarizing the collection of soil, groundwater and soil vapor samples at the Ingraham Street Site (Site Number 224142) located at Ingraham Street, East Williamsburg, Kings County, New York (Site) (**Figure 1**). The primary purpose of the SC was to determine whether the site meets the definition of a Class 2 hazardous waste site by confirming or denying the presence of soil, soil vapor or groundwater impacts and determining whether or not the site poses a significant threat to public health and/or environment. The work discussed herein was conducted in accordance with Work Authorization (WA) D006132-15 provided to Shaw on October 19, 2010, discussions with the New York State Department of Environmental Conservation (NYSDEC), the November 18, 2013 approved Amendment and recent sampling and research tasks requested by the NYSDEC.

1.1 Site Description and Location

1.1.1 Site Description

The Site, located off Ingraham Street, represents the off-site portion of the Popular Hand Laundry Site. The Site is located adjacent to and downgradient from the Popular Hand Laundry Site (Site No. V00170) which is an industrial area, whose reported historical uses included paper box manufacturing, metal works, drum storage and cleaning, and dry cleaning operations. The aPopular Hand Laundry Site is currently being evaluated under the Voluntary Cleanup Program (VCP). Remedial Investigations (RIs) conducted between 1997 and 2001 and the installation of an air sparge/soil vapor extraction system have been completed at this VCP site as part of a remedial action (conducted in 2001).

Land use to the north and west of the Site is primarily industrial/commercial, while to the east and south, land use consists of industrial/commercial and residential housing.

1.1.2 File Review/Property History Assessment

Shaw conducted an e-regulatory file review/property history assessment for the Site. The purpose of this file review/property history assessment was to characterize historic site usage and identify potential environmental impacts (i.e. spills, poor housekeeping management) that may exist or be originating from the surrounding properties.

To accomplish the goal, Shaw reviewed information from the Environmental Data Resources (EDR) Radius Map Report with GeoCheck, Sanborn® Maps, EDR City Directory Abstracts, aerial photographs, historic topographic maps, as well as files provided by the NYSDEC. All EDR reports have been included as **Appendix A**.

The Ingraham Street Site (designated as Property in the EDR Reports) was identified in the following environmental databases:

Database(s) Listed	Comments
Underground Storage Tank (UST) and Historic Underground Storage Tank (HIST UST)	The Property is listed on the Underground Storage Tank database that contains registered USTs. The data comes from the Department of Environmental Conservation's Petroleum Bulk Storage (PBS) Database.
RCRA-NonGen	The Property is named in EPA's database of sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.
FINDS	The Property appears on the list of Facility Index System/Facility Registry System which contains information about the facility and guides to other sources containing more detail.
MANIFESTS	The Property has shipped hazardous waste and has tracked that waste on a manifest.
VCP	The Property is named as a site with a Voluntary Cleanup Program.
DRYCLEANERS	The Property is named on the listing of registered drycleaners.

According to the EDR report, there are two registered dry cleaning facilities located within approximately 0.25 miles of the Property. Neither of these two dry cleaner facilities has reported spills or incidences that have occurred per the EDR database search.

Sites identified in the NY Spills database were reviewed. There are 26 spills that have occurred within approximately 0.125 miles from the Property. One site, called Browning-Ferris Industry, located at 105-115 Thames Street, had a spill that occurred in 1998. The spill was the result of approximately 50 gallons leaking from a 500 gallon gasoline tank. A report submitted to NYSDEC in December of 1998 revealed high benzene, toluene, ethylbenzene, and xylene (BTEX) results in soils. In March of 2000, NYSDEC was notified that soil and groundwater contamination remained onsite, and a proposal to conduct further investigation was submitted by the site owner. Groundwater and soil sampling occurred at the site. In September of 2010, existing monitoring wells were surveyed and no free phase product was identified, where some

VOCs still existed in groundwater (no methyl t-butyl ether [MTBE]). No soil contamination was identified at this time. The spill was closed in December of 2010.

The EDR report also shows that there have been 58 leaking storage tank incident reports submitted, and closed, between 1986 and 2011 in the vicinity of the Property. All are located approximately 0.5 miles from the Property. The leaks were reported to be caused by tank test failures, tank failures or tank overfills. There are also 44 historical leaking tanks within approximately 0.5 miles from the Property.

In addition, the EDR report states that there is one site, Newtown Creek, which is located within 1-mile of the Property that is listed on the National Priorities List (NPL), the proposed NPL list, and the federal Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) list. This site is said to have a contaminated sediment plume which is the result of numerous industrial activities along Newtown Creek.

2.0 SCOPE OF WORK

2.1 Field Sampling Activities

2.1.1 Phase I

The first round of field activities at the Site began on December 14, 2011 and concluded on December 13, 2012. In accordance with the Work Plan for this Site, approved by the NYSDEC on December 20, 2010, Shaw conducted a sampling campaign to further characterize the extent of apparent impacts at the Site, including the collection of samples from soil and water matrices.

The approved scope of work anticipated the completion of the following tasks:

- Installations of 15 Membrane Interface Probe (MIP) Survey points. These points provided "real-time" data and assisted in determining the locations and completed depth/construction of the monitoring wells. The intent in completing the MIP survey was to:
  - Optimize sampling intervals and locations;
  - Identify "zones" of highest impact and allow "visualization" of the potential contaminant plume;
  - Refine the identification and characterization of potential "source areas" at or near the site; and
  - Characterize geologic conditions and delineate any potential confining layers or similar stratigraphic layers or lenses that could impact groundwater flow at the site.

  Potential sampling locations at the site were limited due to site access, utilities and/or physical limitations (curbs, sidewalks and related infrastructure). Consequently, any sampling completed was on the site or within "Right-of-ways" that were clear of utilities. It was understood that actual sampling locations and completed depths could change based upon the results of the MIP survey.
- Advancement of five borings as monitoring wells, two of which were proposed as multi-level wells. Multi-level monitoring wells were used to sample and monitor groundwater levels at various isolated depths in a single borehole, making it easier to determine vertical flow and contaminant distribution with depth.

  Three of the five monitoring wells were proposed to be installed as 2-inch PVC monitoring wells to a depth of 20 feet bgs. The remaining two monitoring wells were to be multi-level wells to depths of 10, 20, 30, 40 and 50 feet bgs. These monitoring wells were proposed to be installed to assess soil and groundwater quality across the area/site.

  The three 2-inch monitoring wells and 50-foot nested monitoring wells were anticipated to be continuously screened/characterized to their determined depth. One soil sample was to be collected per monitoring well location for laboratory analysis. Samples were to

be collected at the depth exhibiting the highest head space reading on the photoionization detector (PID) or visible staining and/or the soil/groundwater interface as detailed in Shaw's Field Activity Plan (FAP) which was submitted to NYSDEC under separate cover. Additionally, quality control samples were to be collected (1 duplicate, 1 matrix spike/matrix spike duplicate (MS/MSD) and 1 rinse blank). All samples were to be analyzed for VOCs by United State Environmental Protection Agency (USEPA) method 8260B.

- Upon completion of the field work, all MIP locations and newly installed monitoring wells were to be surveyed by a New York State Licensed Surveyor. A detailed topographic base map of the site and immediate vicinity was to be developed. The property lines of the parcel were also proposed to be placed on the base map.

After an on-site meeting with the NYSDEC Project Manager following the results of MIP surveys, the following changes were made to the original Work Plan:

- Installation of one 2-inch monitoring well instead of three, as proposed in the Work Plan;
- Installations of two nested wells to 50-feet bgs;
- Advancement of five soil borings (two borings with 40-foot bgs depths and three borings with 20-foot bgs depths) between the MIP Survey points;

Upon completion of all field sampling activities, the following samples were collected:

- 14 (plus two duplicate and quality assurance/quality control [QA/QC]) subsurface soil samples from soil borings;
- 18 (plus two duplicate and QA/QC) groundwater samples from two nested monitoring wells and one 2-inch monitoring well

Details regarding the monitoring well installation and all sampling methods are discussed in this section; analytical results are discussed in **Section 3**. **Figure 2** presents the locations of each monitoring well and all other points from which samples were collected. A photographic log documenting the well installation and sampling activities is included as **Appendix B**.

2.1.2 Phase 2

Shaw personnel remobilized to the Site on January 7, 2014 to complete additional sampling activities to further delineate the potential source or sources of PCE and TCE that were found near the VCP site, including the installation of subsurface soil borings and monitoring wells along with the collection of samples from soil, air, and water matrices.

The approved executive summary amendment anticipated the completion of the following tasks:

- Installation of five additional soil borings (designated SB-6 through SB-11).
- Installation of two nested monitoring wells (designated MLW-3 and MLW 4) along Johnson Avenue.

- Collection of groundwater samples from both the newly installed monitoring wells and three previously installed monitoring wells (MLW-1, MLW-2 and MW-6).
- Advancement of seven borings to evaluate soil vapor conditions at the site. The borings were to be completed as "permanent" soil vapor points to facilitate the collection of soil vapor samples.
- Review of plans and specifications of the sewer system in this area in an attempt to identify potential preferred vapor phase transport pathways.
- Completion of a site survey to determine coordinates of new soil vapor implants and monitoring wells.

Details regarding the monitoring well installation and all sampling methods are discussed in **Section 2.4**; analytical results are discussed in **Section 3**. **Figure 2** presents the locations of each monitoring well and all other points from which samples were collected. A photographic log documenting the well installation and sampling activities is included as **Appendix B**.

2.2 MIP Survey

A total of 12 MIP Survey points (designated MIP-1 through MIP-12) were advanced at the Site by Zebra Environmental, Inc. of Lynbrook, New York (Zebra) between December 19, and December 21, 2011 at the locations indicated on **Figure 2**. The MIP logging data is included as **Appendix C**.

The MIP probe was advanced through the unconsolidated deposits to a maximum depth of 52 feet bgs. The system incorporated a down-hole, permeable membrane detector attached to gas detectors at the surface. The gas detectors included a flame ionization detector (FID), PID and an electron capture detector (ECD). Each detector is optimized for sensitivity to a certain group or type of contaminant. The ECD is typically used for chlorinated (PCE, TCE) compounds, the PID is used for detection of aromatic compounds (BTEX compounds) and the FID is used for straight chain hydrocarbons such as methane or butane. A more extensive description for the MIP logging data can be found in **Appendix C.**

2.3 Soil

2.3.1 Subsurface Soil Borings

During the first round of field activities, a total of eight soil borings (designated SB-1 through SB-5, MW-6, MLW-1, and MLW-2) were advanced at the Site by Zebra at the locations indicated on **Figure 2**. The soil borings were advanced through the unconsolidated deposits to a maximum depth of 50 feet bgs. The soil borings were logged by a Shaw geologist using the

Unified Soil Classification System (ASTM D 2487-85) and field screened for VOCs using a MiniRae PID. Drill logs are included as part of **Appendix D** and field notes relating to this task are included as part of **Appendix E**. Stratigraphic cross section maps (A-A' and B-B') showing subsurface geology are presented as **Figures 3** and **4**.

Soil samples were collected continuously from the ground surface to the groundwater table using a DPT/GeoProbe® 6610DT rig outfitted with 5-foot Macro-Core samplers and acetate liners to provide vertical characterization of contaminant impacts as well as stratigraphic information for the Site. The borings were advanced to a maximum depth of 50-feet bgs and samples were collected at the 2-foot depth interval exhibiting the highest PID reading. In instances where the soil had a PID reading of zero, samples were collected at the 2-foot interval directly above the water table.

As previously noted, a total of 14 samples were collected from the eight soil boring locations and sent to Chemtech Consulting Group, Inc. (Chemtech) of Mountainside, New Jersey under proper chain-of-custody (COC) for analysis of VOCs using USEPA Method 8260B. All QA/QC samples were collected in accordance with the protocol described in the Quality Assurance Project Plan (QAPP). Laboratory data packages are included as **Appendix F** and the data is summarized in **Table 1**.

Five additional soil borings (designated SB-1A through SB-5A) were advanced at the Site by Zebra at the locations indicated on **Figure 2** between January 7, 2014 and February 18, 2014. The soil borings were advanced through the unconsolidated deposits to a maximum depth of 49 feet bgs where refusal was encountered. This was due to refusal of the 2.25 inch casing rods on tight gravelly silts. As proposed in this work scope amendment, three soil samples per boring were obtained for laboratory analysis. The soil borings were logged by a Shaw geologist using the USCS (ASTM D 2487-85) and field screened for VOCs using a MiniRae PID. Drill logs are included as part of **Appendix D** and field notes relating to this task are included as part of **Appendix E**.

Soil samples were collected continuously from the ground surface to the bottom of the boring using a DPT/GeoProbe® 6620DT rig outfitted with 5-foot Macro-Core samplers and acetate liners to provide vertical characterization of contaminant impacts as well as stratigraphic information for the Site. The borings were advanced to a maximum depth of 49-feet bgs and three samples were collected per boring at the 2-foot depth interval exhibiting the highest PID reading, the 2-foot depth interval above the observed water table and at the bottom of the hole.

A total of 15 samples were collected from the five soil boring locations and sent to Chemtech under proper COC for analysis of VOCs using USEPA Method 8260B. All QA/QC samples were collected in accordance with the protocol described in the QAPP. Laboratory data packages are included as **Appendix F** and the data is summarized in **Table 1**.

2.4 Groundwater

2.4.1 Monitoring Well Installation

Three monitoring wells were installed on Site between December 2011 and February 2012. Two were completed as nested monitoring wells (approximately 50 feet bgs; designated MLW-1 and MLW-2) and the third was completed as a shallow monitoring well (approximately 25 feet bgs; designated MW-6). Locations for the monitoring wells (**Figure 2**) were determined after discussions with the NYSDEC Project Manager. The monitoring wells were located based on local groundwater flow of the Site and general utility and right-of-way evaluations.

The nested monitoring wells were installed using a DPT/Geoprobe® GP-6610 DT rig equipped with a 3.5-inch casing rod and well drive point to advance a 2-inch diameter multi-level well with five channels to depths of 10, 20, 30, 40 and 50-feet bgs. The shallow monitoring well was installed using 3.5-inch casing rod and well drive point to advance a 2.0 -inch diameter "pre-packed" 0.020-inch Schedule 40 PVC slotted screen and casing to the appropriate depth. The shallow monitoring well was constructed with 10-feet of slotted screen and the nested monitoring wells were installed using 2-feet of manmade slotted screens at various intervals from 8-feet to 10-feet bgs, 18-feet to 20-feet bgs, 28-feet to 30-feet bgs, 38-feet to 40-feet bgs, and 48-feet to 50-feet bgs. The annular space between the well casing and surrounding soil was filled with #2 well sand to a depth approximately 3 to 4-feet above the screen intervals followed by 3 to 6-feet of bentonite directly above the sand pack. The remaining annular space was filled with grout to approximately 1-foot beneath the surface where the monitoring wells were finished with flush mounted road boxes and concrete anchor pads. Additional details regarding the monitoring well installation can be found in the drill logs included as **Appendix D**. After the installation was complete, the three monitoring wells were developed using the GeoPump until clear water was obtained.

Two additional nested monitoring wells were installed on Site between January 7 and January 20, 2014. The two nested monitoring wells, designated MLW-3 and MLW-4, were installed to depths of 45 feet bgs and 40 feet bgs, respectively. The locations for the monitoring wells were determined after discussions with the NYSDEC Project Manager based on local groundwater

flow/potential contaminant transport from the Site as well as the presence of buried utilities and inaccessible areas that may adversely affect ingress and egress to local businesses during the installation of the monitoring wells. The auger failed to reach the desired depth and encountered refusal at 37 feet bgs during the initial installation of MLW-4. The drilling subcontractor (Zebra) changed the method of monitoring well installation to direct push via 3.75 and/or 3.25 inch casing rods and drive points after receiving approval from the NYSDEC Project Manager. The direct push method obtained maximum depths of 40 and 45 feet bgs. The initially proposed construction of four (4) channel nested monitoring well network was modifed to a three (3) channel nested cluster because the drill rig could not reach the desired 50 foot depth.

MLW-3 had final installation intervals of 15-feet bgs, 30-feet bgs and 45-feet bgs. The 15 and 30 foot intervals were installed in the same drive casing constructed with 010 slot PVC screen. The 15 foot interval consists of a 10 foot screen (5-15 feet bgs) while the 30 foot interval contains a 5 foot lengths of screen (25- 30 feet bgs). Sand pack consisting of #1 sand, was placed in the annular space around the well casing and surrounding soil to approximately 2 feet above the screened 25 - 30 foot interval (sand pack to 23 feet bgs) followed by time release bentonite pellets to 20 feet bgs. The boring was then filled with #1 sand to 15 feet bgs. At this depth the 15 foot well was installed consisting of a 10 foot 010 slotted 1 inch PVC screen. The sand pack consisted of #1 sand to 3 feet bgs. Bentonite time release pellets were placed above the sand pack. The remaining annular space was filled with concrete. The monitoring wells were finished with a flush mounted road box in one concrete anchor pad.

MLW-3's 45-foot interval was installed in an immediately adjacent 3.75 inch casing rod and well drive point. The 5 foot screened interval consists of 1 inch 010 slotted PVC. The #1 sand pack extends from 38 feet to 45 feet bgs, followed by a two foot seal of time release bentonite pellets. The remaining annular space was filled with #1 sand to five feet bgs followed by bentonite to 1 foot bgs. The remaining annular space was filled with concrete and finished with a flush mounted road box and finish in the same concrete anchor pad as the previously described locations.

MLW-4 installed via three separate advancements of direct push 3.25 inch casing rods to the final installation intervals of 15-feet bgs, 30-feet bgs, and 40-feet bgs. Subsurface refusal of the direct push methodology did not allow for the desired depth of the nested monitoring well but the depth was encountered after switching to a narrower diameter casing rod following an unsuccessful attempt via 3.75 inch casing rods. MLW-4's 15 foot interval consists of a 10 foot screen (5-15 feet bgs), the 30 and 40 foot intervals consist of 5 foot length screens (25-30 feet

bgs and 35-40 feet bgs); all screens are 010 slotted 1 inch PVC. The 5 to 15 foot interval was constructed with a #1 sand pack to 3 feet bgs followed by time release bentonite pellets to 1 foot below grade. The 25 to 30 foot interval consists of #1 sand pack to 23 feet bgs followed by a 2 foot bentonite pellet time release seal. The annular space above consists of #1 sand to 5 feet bgs followed by bentonite to 1 foot bgs. The 35 to 40 foot interval is constructed with a #1 sand pack to 33 feet bgs followed by a 2 foot bentonite pellet time release seal. The annular space above consists of #1 sand to 5 feet followed by bentonite to 1 foot bgs. All the remaining annular space from the MLW-4 intervals were filled with concrete and finished with individual flush mounted road boxes in one concrete anchor pad.

Additional details regarding the monitoring well installation can be found in the drill logs included as **Appendix D**. .The newly installed MLW monitoring wells were developed via a peristaltic pump fitted with a stainless steel Watterra check valve until clear water was observed. Drill cuttings generated during the failed auguring method were drummed, characterized and disposed of by Innovative Recycling Technologies, Inc. (IRT). Development water was containerized and disposed of by IRT Waste manifests are included as **Appendix I**.

2.4.2 Monitoring Well Sampling

Phase 1

Shaw personnel collected the first round of groundwater samples on March 15, 2012 from the three monitoring wells (MLW-1, MLW-2 and MW-6) installed in December 2011 and February 2012. The four channels of the nested monitoring wells MLW-1 and MLW-2 (20, 30, 40, & 50-feet bgs) and the shallow monitoring well, MW-6, were sampled. Prior to sampling, each of the monitoring wells were gauged for depth-to-water and depth-to-bottom. After gauging was completed low flow sampling techniques were used. Water quality parameters (temperature, specific conductivity, dissolved oxygen (DO), pH, oxidation-reduction potential (ORP), and turbidity) were collected using a Yellow Springs Instruments (YSI) multi-parameter water quality probe and recorded at five minute intervals. Groundwater purging was considered complete once any of the parameters had stabilized. Monitoring well channel MLW-1 (18-20 feet) did not have sufficient water to use the low-flow sampling technique. With the NYSDEC Project Manager's permission, Shaw collected a "grab" groundwater sampling from this location. The field sampling data sheets are included as **Appendix G**. A total of nine samples plus an appropriate number of QA/QC (1 duplicate, 1 MS, 1 MSD) samples were collected and secured for shipment to Chemtech under proper COC for analysis of VOCs via USEPA Method 8260B.

On May 10, 2012 Shaw personnel returned to the Site to collect a second round of groundwater samples from MLW-1 and MLW-2 (20, 30, 40, and 50 feet bgs) and MW-6 using the same protocol as stated above. Again, monitoring well location MLW-1 (18-20 feet) did not have sufficient water to use the low-flow sampling technique and a "grab" groundwater sample was collected from this interval. The field sampling data sheets are included as **Appendix G**. A total of nine samples plus one duplicate, one MS/MSD, and one Trip Blank sample were collected and secured for shipment under proper COC to Chemtech for analysis of VOCs using USEPA Method 8260B.

Phase 2

Shaw personnel returned to the site between February 17, 2014 and February 19, 2014 to collect groundwater samples from MLW-2 (20, 30, 40 and 50 feet bgs), MLW-3 (5-15, 20-30, and 40-45 feet bgs), MLW-4, and MW-6 using the same protocol as stated above. The field sampling data sheets are included as **Appendix G**. A total of nine samples plus one duplicate, one MS/MSD, and one Trip Blank sample were collected and secured for shipment under proper COC to Chemtech for analysis of VOCs using USEPA Method 8260B.

An additional round of groundwater samples was collected on May 14, 2014 from monitoring wells MLW-1 (20, 30, and 50 feet bgs), and MLW-4 (5-15, 25-30, and 35-40 feet bgs) using the same protocol as stated above. The field sampling data sheets are included as **Appendix G**. A total of six samples plus one duplicate, one MS/MSD, and one Trip Blank sample were collected and secured for shipment under proper COC to Chemtech for analysis of VOCs using USEPA Method 8260B.

All field notes are included as **Appendix E**. Analytical data from this event is included as **Appendix F** and summarized in **Table 2**. The analytical data results from the March and May 2012 sampling events are discussed further in **Section 3** of this report.

2.5 Soil Vapor

2.5.1 Soil Vapor Point Installation

During the second round of field activities, seven borings were advanced to evaluate soil vapor conditions along Ingraham Street and Johnson Avenue. Zebra advanced the boring via direct push, utilizing a DPT/Geoprobe® GP-6620 DT rig. Once the desired depth was reached, a six-inch steel mesh implant fitted with 0.25-inch laboratory grade teflon tubing was placed in the borehole. The borehole was backfilled with #1 sand to a minimum of six inches above the

screened interval and bentonite was placed above the #1 sand to 0.5 feet bgs. The tubing was secured and finished at grade in a concrete apron with a roadbox. The bentonite was allowed to cure for 24 hours prior to sampling. The four soil vapor locations along Ingraham Street (SV-1, 5, 6 and7) were installed to a depth of 8.5 feet bgs. Following advancement of the boring along the south side of Johnson Avenue, which is now defined as SV-2, water was observed in the open boring at 8.5 foot requiring that the depth of installation for the three soil vapor points (SV-2, 3 and 4) was changed to 5 feet bgs. Zebra installed seven "permanent" soil vapor points to depths ranging from 5 to 8.5 feet bgs along Ingraham Street and Johnson Avenue.

Additional details regarding the soil vapor point installation can be found in the field notes, included as **Appendix E**.

2.5.2 Soil Vapor Sampling

Six soil vapor samples, one duplicate sample and one ambient air sample were collected on February 20, 2014 from the newly installed soil vapor points. A sample was not collected from soil vapor implant SV-3 because it contained water. Prior to sampling, the soil vapor points were tested for infiltrating atmospheric gas using a helium tracer gas and detector following procedure outlined in Shaw's Field Activities Plan (FAP, provided under separate cover) and in accordance with the NYSDOH VI Guidance. Upon completion of the tracer gas test, the tubing was purged of approximately two to three probe volumes at a flow rate of less than 0.2 liters per minute. PID readings were collected and recorded during the purging process.

All eight samples were collected in "batch certified" one liter summa canisters fitted with 2-hour flow regulators in accordance with the procedures described in Shaw's FAP. Sampling continued until there was approximately five inches of mercury (Hg) remaining in the canister. After collection, the samples were sent to Pace Analytical in Minneapolis, MN (Pace) for analysis of VOCs via USEPA method TO-15.

Laboratory data packages for these samples are included in **Appendix F**; the data is summarized in **Table 6** and presented on **Figure 13**. Field data sheets for the air sampling are included in **Appendix E**.

2.6 Site Survey

On March 15, 2012 Hirani Engineering & Land Surveying, P.C. (Hirani) of Jericho, New York completed a survey of the Site. The survey included the surrounding properties, MIP point locations, soil borings as well as new and existing monitoring wells. Hirani provided Shaw with

coordinates in NYS Plane North American Datum (NAD) 1983 and groundwater monitoring well elevations in North American Vertical Datum (NAVD) 1988. Hirani personnel returned to the Site on May 20, 2014 to survey the new monitoring wells and soil vapor implant points. Shaw used the information provided by Hirani to create the basemap for **Figures 2** through **13**. There is an elevation difference of 10.13 ft mean sea level (MSL) between MLW-1 (23.47 ft) and MLW-4 (12.34 ft) and it appears the slope is to the northwest. A table with the survey information is included as **Table 5**.

2.7 Data Quality Control/Quality Assurance and Management

All samples from this investigation were collected in a manner that was consistent with the protocol described in Shaw's QAPP. Field Duplicates, MS/MSD, and Rinse Blank samples were all collected with each different sample matrix at a frequency of one per every twenty samples. Additionally, all analytical results from these samples were evaluated for data usability by a third party data validator, Data Validation Services (DVS) of North Creek, NY. DVS' deliverable to Shaw included a data usability summary report (DUSR) and revised Form I data packages that include data qualifiers the validator determined to be necessary. DUSRs and all subsequent deliverables have been included in **Appendix H**.

2.8 Investigation Derived Waste Management

The hauling and disposal of waste drums on March 15, 2012, May 10, 2012, January 14, 2014, January 24, 2014, and February 19, 2014 were completed by Innovative Recycling Technologies Inc., Lindenhurst, New York. The hazardous waste was disposed of at one of two locations: Chemtron Corporation in Avon, Ohio or Republic Environmental Systems (PA), LLC in Hatfield, Pennsylvania. The waste disposal manifests are included as **Appendix I**.

2.9 Sewer Survey

Shaw personnel conducted research on the Ingraham sewer lines as well as the sewer lines perpendicular to Ingraham Street between Porter Avenue and Knickerbocker Avenue to determine if the sewers are or have been contributing to the impacts observed in the area or were serving as potential conduits or preferential pathways for vapor phase transport. Shaw personnel obtained maps (**Appendix J**) from the New York City Department of Environmental Protection (NYCDEP). The maps provided the installation/removal/renovation dates, pipe construction, contents and location of all City-owned pipes in this area. No historic information on previous sewer conditions, size, material, depth, bedding material, replacement was available.

3.0 ANALYTICAL RESULTS

3.1 MIP Survey Results

As previously discussed, the MIP work was completed between December 19 and December 21, 2012; 422 feet were logged by Zebra at 12 locations during this time. The 12 points were advanced at depths of between 22 and 52 feet bgs. The MIP report prepared and interpreted by Zebra personnel can be found in **Appendix C**. A summary of the report findings is presented below.

MIP Point SH01

This location was advanced to 31 feet bgs. The log spikes likely indicated a mixture of sands from 0-20 feet bgs, silts from 20-23 feet bgs and silty clay from 23-31 bgs. Results of the ECD log and PID log had corresponding spikes indicating the presence of chlorinated solvent breakdown products from 3-12 feet bgs. A pronounced spike occurred from 19-27 feet bgs indicating higher levels of chlorinated compounds at those depths. According to small FID spikes, there may be a mixture of organic compounds at this location.

MIP Point SH02

This location was advanced to 35 feet bgs. The log spikes showed a mixture of sands from 0-7 feet bgs and silts from 7-35 feet bgs. Results of the ECD log and PID log indicated spikes which pointed to the presence of chlorinated solvent breakdown products from 15-34 feet bgs. A pronounced spike occurred at from 19-27 feet bgs implying higher levels of chlorinated compounds at those depths. No FID spikes were recorded.

MIP Point SH03

This location was advanced to 38 feet bgs. It appeared that sands were present from 0-7 feet bgs and silts from 7-38 feet bgs with chlorinated solvent breakdown products from 7-35 feet bgs with the highest presence of chlorinated solvents lcoated in the 20-26 ft bgs interval. According to small FID spikes there may have been a mixture of organic compounds at this location.

MIP Point SH04

This location was advanced to 31 feet bgs. The log spikes indicated a mixture of sands from 0-6 feet bgs and silts from 6-31 feet bgs. Results of the ECD log and PID log had corresponding spikes which suggested the presence of chlorinated solvent breakdown products from 11-30 feet bgs with the largest spike in the 28-29 foot interval. No FID spikes were recorded.

MIP Point SH05

This location was advanced to 22 feet bgs. The log spikes likely indicated a mixture of sands from 0-5 feet bgs and silts from 5-22 feet bgs. It appeared that chlorinated solvents may have been present between 9 and 21 feet bgs with the largest concentration in the 20 to 22 foot interval. No FID spikes were recorded.

MIP Point SH06

This location was advanced to 41 feet bgs. Sands appeared to be present between 0-9 feet bgs and silts from 9-41 feet bgs. Logs indicated the presence of chlorinated solvents between 8 and 33 feet bgs. No FID spikes were recorded.

MIP Point SH07

This location was advanced to 27 feet bgs. The log spikes indicated a mixture of sands from 0-9 feet bgs, silty clay between 9 and 11 feet bgs and silts from 11 to 27 feet bgs. The logs showed that low levels of chlorinated solvents may have been present between 8 and 26 feet bgs. No FID spikes were recorded.

MIP Point SH08

This location was advanced to 23 feet bgs. The log spikes implied a mixture of sands from 0-6 feet bgs, silty clay between 6 and 8 feet bgs and silts from 8 to 23 feet bgs. The logs suggested that low levels of chlorinated solvents may have been present between 8 and 22 feet bgs. No FID spikes were recorded.

MIP Point SH09

This location was advanced to 31 feet bgs. The log spikes likely indicated a mixture of sands and fill between 0-6 feet bgs, silt with clay at 6-10 feet bgs and silts with sands at 10 to 31 feet bgs. Logs showed the likely presence of chlorinated solvents and breakdown products between 7 and 20 feet bgs with the highest concentrations in the 20 to 27 foot bgs interval. No FID spikes were recorded.

MIP Point SH010

This location was advanced to 46 feet bgs. It appeared that a mixture of sand, silts and clays were located between 0 and 14 feet bgs and silts with sands from 14 to 46 feet bgs. There was an indication that high levels of chlorinated solvents and breakdown products were likely present between 6 and 45 feet bgs; the highest concentration likely in the 24 to 30 foot interval. No FID spikes were recorded.

MIP Point SH011

This location was advanced to 45 feet bgs. Mixtures of sand, silts and clays were likely located between 0 and 14 feet bgs and silts with sands from 14 to 45 feet bgs. Logs showed that high levels of chlorinated solvents and breakdown products were likely present between 6 and 44 feet bgs with the highest concentration likely in the 21 to 28 foot interval. No FID spikes were recorded.

MIP Point SH012

This location was advanced to 52 feet bgs. Mixtures of sand, silts and clays appeared to be located between 0 and 14 feet bgs and silts with sands from 14 to 52 feet bgs. Logs indicated that high levels of chlorinated solvents and breakdown products were likely present between 6 and 50 feet bgs with the highest concentration likely in the 32 to 38 foot interval. No FID spikes were recorded.

3.2 Soil Sampling

3.2.1 Subsurface Soil Boring Samples

A total of 29 subsurface soil samples were collected from eight soil boring locations on the Site between December 2011 and February 2014. Each sample interval was screened with a PID and logged by a Shaw geologist. The soil types encountered at the Site were generally fine to coarse sands with some gravel, pebbles, and little silt generally consistent with the observed MIP results and interpretations. In addition small sections of clayey silt/silty clay were also found at some locations. The soil borings were advanced to depths between 20 feet and 50 feet; the depths to water ranged in these borings were encountered between15 feet bgs and 23 feet bgs. A more extensive description for each boring can be found in the soil boring logs included as **Appendix D**. Field notes are included as **Appendix E**.

The analytical results are summarized and compared to NYSDEC's Department of Environmental Remediation (DER) Recommended Soil Cleanup Objectives (SCOs) for unrestricted use (UUSCO) and restricted commercial use as presented in 6NYCRR Part 375 (December 2006) in **Table 1** for VOCs, and the complete analytical data package is included as **Appendix F** and summarized in the following paragraphs. All detections for VOCs are shown graphically on **Figures 5 and 6**.

No analytes were detected above UUSCOs or restricted commercial SCOs in December 2011. Although there were several analytes detected in soil samples collected during the February 2012

sampling event, only TCE and PCE were detected above the UUSCOs. Both detections above the UUSCOs were detected in soil sample SB-5 (34 ft – 35 ft). TCE was detected at 5 mg/kg and PCE was detected at 850 mg/kg. Only the PCE detected exceeded the restricted commercial SCO. Acetone, methylene chloride, cis-1,2-DCE, TCE and PCE were also detected in samples during the February 2012 sampling event but at concentrations lower than the UUSCO. Soil sample results are presented on **Table 1**.

Four compounds, vinyl chloride, cis-1,2-DCE, TCE and PCE were detected above UUSCOs during the January and February 2014 sampling event. Detection ranges above the UUSCOs (minimum to maximum) for these compounds are summarized in the following bullets.

- Vinyl chloride; 0.0357 mg/kg in SB-2A (13 ft – 15 ft) to 0.15 mg/kg in SB-4A (26 ft -28 ft);
- Cis-1,2- DCE; 0.26 mg/kg in SB-3A (30 ft – 32 ft) to 1.7 mg/kg SB-4A (26 ft – 28 ft).
- PCE; 1.8 mg/kg in SB-3A (23 ft – 25 ft) to 3.4 mg/kg in SB-2A (41 ft – 43ft).
- TCE; 0.54 mg/kg in SB-4A (26 ft -28 ft).

Vinyl chloride, cis-1,2-DCE, TCE, PCE, acetone, methylene chloride, 1,2,4-trimethylbenzene, 1,1,2,2-tetracloroethane and 1,1-dichloroethenethat were also detected in samples during the January 2014 sampling event but at concentrations lower than the UUSCO. Soil sample results are presented on **Table 1**. No compounds were detected above the restricted commercial SCOs during the January 2014 and February sampling event. Detections are shown on **Figures 5 and 6**.

3.3 Groundwater Sampling

As previously discussed, groundwater samples were collected from three wells (installed in December 2011 and February 2012) during the March and May 2012 sampling events and five wells during the February and May 2014 sampling events. The analytical results in µg/L (micrograms per liter or parts per billion [ppb]) are summarized and compared to NYSGWQS as defined in the Technical & Operational Guidance Series (TOGS) 1.1.1 on **Table 2** and are shown graphically on **Figures 7, 8, and 9**. The complete analytical data package is included in **Appendix F**. Shaw was unable to gauge the depth-to-water in MLW-1 and MLW-2 during the sampling events because the interface probe was too large to advance within the multi-channel wells. Groundwater quality parameters are in **Tables 3 and 4**.

3.3.1 March 2012 Groundwater Sampling

Fifteen (15) separate compounds were reported among the 10 groundwater samples (including one duplicate sample) collected during the March 2012 sampling event. Eight of these 15 compounds had at least one detection that exceeded the applicable NYSGWQS; the detections that exceeded the NYSGWS are presented below:

- 1,1-dichloroethane (1,1-DCA); 11 µg/L(MLW-2 (38-40)) to 72 µg/L (MLW-1 (18-20));
- 1,1-dichloroethene (1,1-DCE); 15 µg/L (MLW-6);
- 1,1,1-trichloroethane (1,1,1-TCA); 8.8 µg/L (MLW-1(18-20));
- cis-1,2-DCE; 13 µg/L (MLW-1(18-20)), 99 µg/L (MLW-1 (18-20))and 8,100 µg/L (MW-6);
- MTBE; 15 µg/L (MLW-2 (18-20)), 1,200 µg/L (MLW-2 (38-40))and 1,800 µg/L (MLW-2(28-30));
- PCE; 8.8 µg/L (MLW-1 (18-20)) and 970 µg/L (MW-6)
- TCE; 7.6 µg/L (MLW-1 (28-30)), 24 µg/L (MLW-1 (18-20)) and 2,400 µg/L (MW-6); and,
- Vinyl Chloride; 590 µg/L (MW-6).

Additionally, there were no detections for 11 compounds whose reporting limit was greater than the applicable NYSGWQS.

3.3.2 May 2012 Groundwater Sampling

During the May 2012 sampling event, there were 13 compounds detected and 11 of those had at least one detection above the applicable NYSGWQS. The detections that exceeded the NYSGWS are presented below:

- 1,1-DCA; 9.4 µg/L (MLW-2 (38-40)), 9.7 µg/L (MLW-2 (38-40) DUP) and 41 µg/L (MLW-1(18-20));
- 1,1-DCE; 16 µg/L (MW-6);
- 1,1,1-TCE; 7 µg/L (MLW-1(18-20));
- Chloroform; 29 µg/L (MLW-1 (38-40))
- cis-1,2-DCE; 5.6 µg/L (MLW-2(38-40 DUP), 17 µg/L (MLW-2(28-30), 160 µg/L (MLW-2(18-20) and 13,000 µg/L (MW-6);
- trans-1,2-DCE; 63 µg/L (MW-6);
- MTBE; 1,100 µg/L (MLW-2(38-40) DUP), 1300 µg/L (MLW-2 (38-40)) and 2,000 µg/L (MLW-2 (28-30);
- PCE; 6.4 µg/L (MLW-1 (18-20)), 14 µg/L (MLW-2(18-20) and 620 µg/L (MW-6); and,

- TCE; 7 µg/L (MLW-2(38-40), 9.2 µg/L (MLW-1(18-20), 50 µg/L (MLW-2(18-20) and 2,400 µg/L (MW-6);
- Vinyl Chloride; 8.4 µg/L (MLW-2 (18-20)) and 770 µg/L (MW-6).

Additionally, there were no detections for 11 compounds whose reporting limit was greater than the applicable NYSGWQS.

3.3.3 February 2014 Groundwater Sampling

During the February 2014 sampling event, there were 14 detections of VOCs. Eight of the 14 VOCs detected had at least one NYSGWQS exceedance. The exceedances are presented below:

- 1,1-DCA; 8.6 µg/L (MLW-2);
- 1,1-DCE; 15.3 µg/L (MW-6);
- cis-1,2-DCE; 1,200 µg/L (MLW-4), 1,700 µg/L (MLW-4 DUP), 7,800 µg/L (MW-6);
- MTBE; 14.1 µg/L (DUP-1), 150 µg/L (MLW-3 (20-30)) and 310 µg/L MLW-2(4));
- trans-1,2-DCE; 75.7 µg/L (MW-6);
- PCE; 180 µg/L (MW-6);
- TCE; 520 µg/L (MW-6); and,
- Vinyl Chloride; 310 µg/L (MLW-4), 440 µg/L (DUP-1), 550 µg/L (MW-6).

Additionally, there were no detections for five compounds whose reporting limit was greater than the applicable NYSGWQS.

3.3.4 May 2014 Groundwater Sampling

During the February 2014 sampling event, there were 13 detections of VOCs. Six of the 13 VOCs detected had at least one NYSGWQS exceedance. The NYSGWQS exceedances are as follows:

- 1,1-DCA; 8.9 µg/L (MLW-4 (35-40)) and 10.7 µg/L (MLW-1-CH2);
- cis-1,2-DCE; 41.9 µg/L (MLW-1-CH2), 360 µg/L (DUP), 380 µg/L (MLW-4(25-30)), 1,100 µg/L (MLW-4(5-15)) and 1800 µg/L (MLW-4(35-40));
- PCE; 9.4 µg/L (MLW-1-CH2);
- TCE; 8.1 µg/L (MLW-1-CH2); and,
- Vinyl Chloride; 350 µg/L (MLW-4(5-15)), 460 µg/L (MLW-4 (35-40), 480 µg/L (MLW-4 (25-30), 540 µg/L (MLW-4(35-40)).

Additionally, there were no detections for five compounds whose reporting limit was greater than the applicable NYSGWQS.

3.4 Soil Vapor Sampling

Six soil vapor samples, one duplicate (of SV-5) sample and one ambient outdoor air sample were collected on February 20, 2014. A comparison of minimum and maximum range for compounds detected in the soil vapor samples (not ambient outdoor air) listed in the NYSDOH Vapor Intrusion Guidance is summarized below.

- Carbon tetrachloride; 2 detections; 0.31 µg/m^3 (SV-2) to 0.44 J µg/m^3 (SV-4).
- 1,1,1-TCE; 3 detection; 0.71 J µg/m^3 (SV-5) to 6 J µg/m^3 (SV-1)
- cis-1,2-DCE; 5 detections; 1.7 J µg/m^3 (SV-5) to 250 µg/m^3 (SV-7)
- PCE; 7 detections; 1.21 µg/m^3 (SV-4) to 3,865 µg/m^3 (SV-1)
- TCE; 7 detections; 0.43 µg/m^3 (SV-2) to 806 µg/m^3 (SV-1)
- Vinyl Chloride; 2 detections; 0.33 µg/m^3 (SV-2) to 19.7 µg/m^3 (SV-4).

In general, the highest cis-1,2-DCE, TCE and PCE detections observed were on Ingraham street. Soil vapor sample results are presented on **Table 6**.

3.5 DUSR Summary

In general, the results are considered "usable either as reported or with minor qualification as estimated in value". However, the 1,4-dioxane results for the groundwater and aqueous QA/QC samples are considered "not usable due to poor instrument performance inherent with that compound."

The blind field duplicates showed acceptable correlations as did the MS/MSDs for MW-6 (aqueous) and MW-1(22). The MS for MW-6(19-20) showed acceptable recoveries however, the MSD did not. No qualification of the data was made. The matrix spikes in sample MLW-1 (38-40) during the May sampling event did not show acceptable recoveries and duplicate correlations for 2-butanone, 4-methyl-2-pentanone, and m,p-xylene. The results for these compounds have been estimated and should be considered low biases.

The vinyl chloride results for MLW-1 (18-20) and MLW-1 (28-30) were qualified as estimated because the initial and/or continuing calibration standard results was not within validation guidelines. Additionally, the acetone, 1,2,4-trichloroprobenzene and the 1,2,3-tichlorobenzene results for the May 2012 sampling event were also estimated for the same reason.

Finally, as noted in the DUSR report, the dilution analyses of MLW-2(28-30), MLW-2(38-40) and MW-6 during the May 2012 sampling event were immediately run after the undiluted analyses of these samples. This did not follow proper analytical protocols. Since the potential for carryover contribution was high for MTBE in MLW-2 (28-30) and MLW-2 (38-4) as well as for chlorinated compound sin MW-6, those results were qualified as estimated and may have a high bias.

More detail is provided in the DUSR reports which are included in as **Appendix H**.

3.6 Groundwater Elevations

Depths to water were not obtainable for the multi-channel wells during the March or May groundwater sampling events. Shaw remobilized to the Site with a smaller interface probe on September 26, 2012 and December 13, 2012 to collect groundwater elevation data. MLW-1 was not gauged during the September event because Shaw did not have property access. Groundwater Contour Maps depicting the September and December 2012 gauging results are presented as **Figures 10** and **11**. Groundwater elevations are presented in **Tables 3 and 4**.

The September 2012 Groundwater Contour Map (**Figure 10**) shows that groundwater generally flows north towards MLW-2. There is a groundwater elevation high spot at MW-6 (9.43 feet bgs). The difference in groundwater is 4.07 feet across the Site.

The December 2012 Groundwater Contour Map (**Figure 11**) shows a lesser (2.17 ft) groundwater elevation change between the monitoring wells. No monitoring well had a significant difference in groundwater elevation in comparison to the other monitoring wells. Groundwater elevations were averaged across the intervals (where applicable) for contouring purposes. MW-3 and NW-2 had the highest groundwater elevation (7.76 feet bgs) and MLW-2 had the lowest groundwater elevation (5.59 feet bgs). Groundwater appears to be flowing to the northwest which is generally consistent with the September 2012 gauging event.

The February 2014 Groundwater Contour Map (**Figure 12**) shows that groundwater is flowing northwest to west.

Since there were only two monitoring wells sampled in May 2014 a groundwater contour map could not be created. Depth to water in monitoring well MLW-1's channels ranged between 16.20 feet bgs to 16.35 feet bgs during this sampling event. Depth to water measurements, were between 7.25 feet bgs and 7.75 feet bgs in MLW-4's channels during the same event.

3.7 Sewer Survey

According to the Sewer Mapping Figure (**Appendix J**), there is a relief combined sewer line that connects Ingraham Street to Johnson Avenue. The line was installed circa 1985; however, the shape, material and diameter are not known.

The as-built drawing (**Appendix J**) shows a cross-section/plan view of the west to east sewer line on Ingraham Street which shows elevations and a clear slope from Porter Avenue to Knickerbocker Avneue. The plan view also reference the perpendicular spur (circa 1985 line described above) which connects the Ingraham Street sewer line to Johnson Avenue sewer line near 63 Ingraham Street. According to this figure, the spur was remaintenanced circa 1985 and was plug in 2006 if not before 2006.

4.0 INVESTIGATION FINDINGS

Soil and groundwater data generated during the course this SC indicate the following findings:

1. The general topography slopes to the north/northwest. The depth to groundwater at the Site ranges between 6.35 and 16.55 feet bgs. There is a 10.13 ft (MSL) elevation difference between MLW-1 and MLW-4.
2. Existing soil and geologic borings indicate that the Site is underlain by a mixture of inter-bedded sands, clays and silts typical of this area.
3. A MIP survey conducted at the Site indicates that chlorinated VOCs and breakdown products are present in the area. According to the MIP survey, chlorinated VOCs and the associated breakdown products were generally observed between 8 and 31 feet bgs with the highest concentrations being observed between 23 and 28 feet bgs. Moreover, chlorinated VOC concentrations in MIP-7 and MIP-8 (located on Ingraham Street, adjacent to the Popular Hand Laundry Site) had the lowest perceived chlorinated VOCs and breakdown products. The highest chlorinated VOCs and breakdown products observed during the MIP survey were in MIP-10, MIP-11 and MIP-12 located in the Ingraham Sidewalk across the street from the Popular Hand Laundry.
4. The majority of the chlorinated VOC soil impacts were observed in SB-5 (34-35 ft). This boring is the furthest west location on the northern side of Ingraham Street. Cis-1,2-DCE, TCE and PCE were all detected at concentrations greater than the unrestricted SCO.
5. Although there were chlorinated VOCs detected above NYSGWQS in several of the groundwater samples collected from the monitoring wells, the highest concentrations were observed in MW-6. In general the detections observed were the highest during the May 2012 sampling event. Groundwater concentrations in MLW-1, located upgradient of the Popular Hand Laundry Site, show chlorinated VOCs greater than the NYSGWQS during these sampling events. Furthermore, most of the chlorinated VOC detections appear to decrease (in MLW-1) between the March 2012 and May 2014 sampling events.
6. PCE and TCE concentrations in groundwater fluctuates between non-detect and exceeding applicable NYSGWQS between the four groundwater sampling events. .
7. PCE breakdown products (cis-1,2-DCE, 1,1-DCA, and vinyl chloride) decreased in MLW-1 between the March 2012 and May 2014 sampling events. There was an increase for cis-1,2-DCE and vinyl chloride in MW-6 and MLW-2 between the March 2012 and May 2012 events and a decrease in these concentrations between May 2012 and May 2014 sampling events. 1,1-DCA concentrations did not change significantly between the March 2012 and May 2014 sampling event in either MW-6 or MLW-2.
8. It appears that the sewer spur discussed in Section 2.8 is located approximately 11 feet bgs. The highest soil quality impacts observed during this assessment occurred at approximately 41 feet bgs. Although results from the MIP survey indicated that chlorinated solvents may be presents between 3 and 50-feet bgs, the survey indicated potential for the highest chlorinated

solvents were likely to be located between 19 and 38 feet bgs. Soil sample results from the 2011, 2012 and 2014 sampling events confirm this. PCE was detected in soil vapor at a concentration of 2,509 µg/m^3 in SV-6 which is approximately100 feet north of the spur (lateral). SV-5 (50 feet from spur) had a PCE soil vapor concentration of 2,102 µg/m^3.

9. PCE and TCE were detected in all soil vapor samples. The two highest PCE detections (3,865 µg/m^3 and 2,712 µg/m^3) and the two highest TCE detections (806 µg/m^3 and 524 µg/m^3) were observed in the furthest west (SV-1) and furthest east (SV-7) locations along the north side of Ingraham Street. Soil vapor detections on Johnson Avenue were less than 5 µg/m^3 for PCE and less than 1 µg/m^3 for TCE.

Tables

Table 1
Summary of Soil VOC Analytical Results
Method 8260
Ingraham Street Sidewalk Plume Trackdown
East Williamsburg, New York
December 2011, February 2012, and January 2014

		Site ID	MLW-1	MLW-1	MLW-1	MLW-1	FIELD DUP-A	MLW-2	MW-6	MW-6
		Field Sample ID	MLW-1 (22)	MLW-1 MS (22)	MLW-1 MSD (22)	MLW-1 (25-30)	MLW-1 (25-30)	MLW-2 (15-16)	SB-6 (14-15)	SB-6 (19-20)
		Sample Date	12/15/2011	12/15/2011	12/15/2011	12/14/2011	12/15/2011	2/15/2012	2/17/2012	2/17/2012
		Sample Depth (ft bgs)	22	22	22	25-30	25-30	15-16	14-15	19-20
ANALYTE (mg/kg)	RSCO - (Unrestricted)	RSCO - (Restricted Commercial)	Primary	Matrix Spike		Matrix Spike Duplicate		Primary	Primary	Primary	Primary	Primary
				% Rec.	QC Limit	% Rec.	QC Limit					
Dichlorodifluoromethane	NGV	NGV	0.0056 U	*86*	*44-157*	*91*	*44-157*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
Chloromethane	NGV	NGV	0.0056 U	*88*	*51-144*	*93*	*51-144*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
Vinyl Chloride	0.02[f]	13	0.0056 U	*89*	*56-145*	*96*	*56-145*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
Bromomethane	NGV	NGV	0.0056 U	*89*	*47-151*	*95*	*47-151*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
Chloroethane	NGV	NGV	0.0056 U	*91*	*55-158*	*96*	*55-158*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
Trichlorofluoromethane	NGV	NGV	0.0056 U	*95*	*63-145*	*93*	*63-145*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
1,1,2-Trichlorotrifluoroethane	NGV	NGV	0.0056 U	*96*	*63-141*	*91*	*63-141*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
1,1-Dichloroethene	0.33[f]	500[b]	0.0056 U	*96*	*64-140*	*98*	*64-180*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
Acetone	0.05	500[b]	0.028 U	*93*	*41-145*	*85*	*41-145*	0.029 U	0.028 U	0.029	0.029 U	**0.016 J**
Carbon Disulfide	NGV	NGV	0.0056 U	*95*	*56-139*	*95*	*56-139*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
Methyl tert-butyl Ether	0.93[f]	500[b]	0.0056 U	*107*	*64-132*	*107*	*64-132*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
Methyl Acetate	NGV	NGV	0.0056 U	*111*	*21-221*	*105*	*21-221*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
Methylene Chloride	0.05	500[b]	0.0056 U	*102*	*59-133*	*100*	*59-133*	0.0059 U	0.0056 U	**0.0032 J**	0.0058 U	**0.0031 J**
trans-1,2-Dichloroethene	0.19[f]	500[b]	0.0056 U	*105*	*64-135*	*105*	*64-135*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
1,1-Dichloroethane	0.27[f]	240	0.0056 U	*105*	*66-135*	*107*	*66-135*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
Cyclohexane	NGV	NGV	0.0056 U	*100*	*59-140*	*100*	*59-140*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
2-Butanone	0.12	500[b]	0.028 U	*96*	*54-137*	*89*	*54-137*	0.029 U	0.028 U	0.028 U	0.029 U	0.028 U
Carbon Tetrachloride	0.76[f]	22	0.0056 U	*111*	*66-137*	*107*	*66-137*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
cis-1,2-Dichloroethene	0.25[f]	500[b]	0.0056 U	*109*	*66-137*	*109*	*65-132*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	**0.0025 J**
Bromochloromethane	NGV	NGV	NA	*NA*		*NA*		NA	NA	NA	NA	NA
Chloroform	0.37	350	0.0056 U	*107*	*68-132*	*107*	*68-132*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
1,1,1-Trichloroethane	0.68[f]	500[b]	0.0056 U	*109*	*69-138*	*109*	*69-138*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
Methylcyclohexane	NGV	NGV	0.0056 U	*109*	*54-134*	*104*	*54-134*	**0.0095**	0.0056 U	0.0057 U	0.0058 U	0.0056 U
Benzene	0.06	44	0.0056 U	*109*	*68-130*	*107*	*68-1130*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
1,2-Dichloroethane	0.02[c]	30	0.0056 U	*107*	*68-130*	*104*	*68-130*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
Trichloroethene	0.47	200	0.0056 U	*107*	*54-149*	*104*	*54-149*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	**0.0066**
1,2-Dichloropropane	NGV	NGV	0.0056 U	*111*	*65-136*	*107*	*65-136*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
Bromodichloromethane	NGV	NGV	0.0056 U	*111*	*68-132*	*107*	*68-132*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
4-Methyl-2-Pentanone	NGV	NGV	0.028 U	*117*	*59-137*	*107*	*59-137*	0.029 U	0.028 U	0.028 U	0.029 U	0.028 U
Toluene	0.7	500[b]	0.0056 U	*111*	*65-133*	*107*	*65-133*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
trans-1,3-Dichloropropene	NGV	NGV	0.0056 U	*113*	*64-129*	*109*	*64-129*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
cis-1,3-Dichloropropene	NGV	NGV	0.0056 U	*113*	*65-129*	*109*	*65-129*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
1,1,2-Trichloroethane	NGV	NGV	0.0056 U	*113*	*66-131*	*105*	*66-131*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
2-Hexanone	NGV	NGV	0.028 U	*100*	*58-133*	*89*	*58-133*	0.029 U	0.028 U	0.028 U	0.029 U	0.028 U
Dibromochloromethane	NGV	NGV	0.0056 U	*113*	*67-131*	*107*	*67-131*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
1,2-Dibromoethane	NGV	NGV	0.0056 U	*109*	*65-130*	*104*	*65-130*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
Tetrachloroethene	1.3	150	0.0056 U	*105*	*37-161*	*105*	*37-161*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	**0.0055 J**
Chlorobenzene	1.1	500[b]	0.0056 U	*107*	*66-128*	*105*	*66-129*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
Ethyl Benzene	1[f]	390	0.0056 U	*107*	*65-133*	*105*	*65-133*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
m/p-Xylenes	0.26	500[b]	0.011 U	*107*	*62-134*	*98*	*62-134*	0.012 U	0.011 U	0.011 U	0.012 U	0.011 U
o-Xylene	0.26	500[b]	0.0056 U	*102*	*65-133*	*100*	*65-133*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
Styrene	NGV	NGV	0.0056 U	*100*	*66-127*	*98*	*66-127*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
Bromoform	NGV	NGV	0.0056 U	*98*	*68-131*	*96*	*68-131*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
Isopropylbenzene	NGV	NGV	0.0056 U	*105*	*64-139*	*105*	*64-139*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
1,1,2,2-Tetrachloroethane	NGV	NGV	0.0056 U	*107*	*48-150*	*104*	*48-150*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
1,3-Dichlorobenzene	2.4[f]	280	0.0056 U	*102*	*60-129*	*100*	*60-129*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
1,4-Dichlorobenzene	1.8	130	0.0056 U	*102*	*59-128*	*100*	*59-128*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
1,2-Dichlorobenzene	1.1[f]	500[b]	0.0056 U	*105*	*63-127*	*102*	*63-127*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
1,2-Dibromo-3-Chloropropane	NGV	NGV	0.0056 U	*114*	*65-137*	*109*	*65-137*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
1,2,4-Trichlorobenzene	NGV	NGV	0.0056 U	*102*	*38-131*	*102*	*38-131*	0.0059 U	0.0056 U	0.0057 U	0.0058 U	0.0056 U
1,2,3-Trichlorobenzene	NGV	NGV	NA	*NA*		*NA*		NA	NA	NA	NA	NA
1,4-Dioxane	0.1[b]	130	NA	*NA*		*NA*		NA	NA	NA	NA	NA

Notes:
All results are in milligrams per kilogram (mg/kg) or parts per million (ppm) except for the trip blanks (TB) and field blanks (FB) which are in micrograms per liter (ug/L) or parts per billion (ppb);
Analytical results are compared to NYSDEC Soil Clean-Up Objectives for Unrestricted and Restricted Commercial uses, obtained from 6 NYCRR Part 375, December 14, 2006;
NGV - No Guidance Value provided by 6 NYCRR Part 375;
RSCO - Recommended Soil Cleanup Objective (SCO);
b - The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3;
c - For constituents where the calculated SCO was lower than the rural soil background concentration, as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 1 SCO value for this use of the site;
f - Protection of ecological resources SCOs were not developed for contaminants identified in Table 375-6.8(b) with "NS". Where such contaminants appear in Table 375-6.8(a), the applicant may be required by the Department to calculate a protection of ecological resources SCO according to the TSD;
ft bgs - Feet below ground surface;
Bold - Indicates analyte detected by laboratory;
Shaded - Indicates the reported value exceeds the UNRESTRICTED RSCO value;
U - The compound was analyzed for but not detected. The value provided is the laboratory reporting limit;
J - The numerical value provided is an estimated quantity;
Q - Indicates LCS control criteria did not meet requirements;
B - Analyte found in associated Method Blank;
E - Value exceeds calibration range;
R - The data are unusable. The analyte may or may not be present;
* - values outside of QC limits;
D - Compound was analyzed at secondary dilution;
NA - not analyzed.

Table 1
Summary of Soil VOC Analytical Results
Method 8260
Ingraham Street Sidewalk Plume Trackdown
East Williamsburg, New York
December 2011, February 2012, and January 2014

		Site ID	MW-6		MW-6		SB-1	SB-1	SB-2	SB-3	SB-3	SB-4
		Field Sample ID	MW-6 MS		MW-6 MSD		SB-1 (14-15)	SB-1 (24-25)	SB-2 (14-15)	SB-3 (12-13)	SB-3 (19-20)	SB-4 (12-13)
		Sample Date	2/17/2012		2/17/2012		2/16/2012	2/16/2012	2/16/2012	2/16/2012	2/16/2012	2/16/2012
		Sample Depth (ft bgs)	19-20		19-20		14-15	24-25	14-15	12-13	19-20	12-13
ANALYTE (mg/kg)	RSCO - (Unrestricted)	RSCO - (Restricted Commercial)	Matrix Spike		Matrix Spike Duplicate		Primary	Primary	Primary	Primary	Primary	Primary
			% Rec.	QC Limit	% Rec.	QC Limit						
Dichlorodifluoromethane	NGV	NGV	*93*	*44-157*	*93*	*44-157*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
Chloromethane	NGV	NGV	*102*	*51-144*	*102*	*51-144*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
Vinyl Chloride	0.02[f]	13	*98*	*56-145*	*100*	*56-145*	0.0059 U	0.0056 U	0.0062	0.006 U	0.0057 U	0.0058 U
Bromomethane	NGV	NGV	*102*	*47-151*	*89*	*47-151*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
Chloroethane	NGV	NGV	*102*	*55-158*	*98*	*55-158*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
Trichlorofluoromethane	NGV	NGV	*93*	*63-145*	*93*	*63-145*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
1,1,2-Trichlorotrifluoroethane	NGV	NGV	*95*	*63-141*	*98*	*63-141*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
1,1-Dichloroethene	0.33[f]	500[b]	*98*	*64-140*	*100*	*64-140*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
Acetone	0.05	500[b]	*96*	*41-145*	*89*	*41-145*	0.031	0.029	0.240	0.078	0.039	0.029 U
Carbon Disulfide	NGV	NGV	*98*	*56-139*	*100*	*56-139*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
Methyl tert-butyl Ether	0.93[f]	500[b]	*95*	*64-132*	*91*	*64-132*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
Methyl Acetate	NGV	NGV	*109*	*21-221*	*102*	*21-221*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
Methylene Chloride	0.05	500[b]	*88*	*59-133*	*89*	*59-133*	0.0029 J	0.0028 J	0.0036 J	0.006 U	0.0057 U	0.0058 U
trans-1,2-Dichloroethene	0.19[f]	500[b]	*98*	*64-135*	*102*	*64-135*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
1,1-Dichloroethane	0.27[f]	240	*95*	*66-135*	*96*	*66-135*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
Cyclohexane	NGV	NGV	*112*	*59-140*	*111*	*59-140*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
2-Butanone	0.12	500[b]	*113*	*54-137*	*99*	*54-137*	0.029 U	0.028 U	0.061	0.013 J	0.028 U	0.029 U
Carbon Tetrachloride	0.76[f]	22	*93*	*66-137*	*95*	*66-137*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
cis-1,2-Dichloroethene	0.25[f]	500[b]	*124*	*66-137*	*171**	*66-137*	0.0026 J	0.0042 J	0.013	0.012	0.0057 U	0.0058 U
Bromochloromethane	NGV	NGV	*NA*		*NA*		NA	NA	NA	NA	NA	NA
Chloroform	0.37	350	*98*	*68-132*	*98*	*68-132*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
1,1,1-Trichloroethane	0.68[f]	500[b]	*98*	*69-138*	*96*	*69-138*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
Methylcyclohexane	NGV	NGV	*104*	*54-134*	*107*	*54-134*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
Benzene	0.06	44	*105*	*68-130*	*111*	*68-130*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
1,2-Dichloroethane	0.02[c]	30	*93*	*68-130*	*95*	*68-130*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
Trichloroethene	0.47	200	*108*	*54-149*	*160**	*54-149*	2.8 J	0.010	0.0027 J	0.033	0.0057 U	0.0058 U
1,2-Dichloropropane	NGV	NGV	*109*	*65-136*	*114*	*65-136*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
Bromodichloromethane	NGV	NGV	*96*	*68-132*	*96*	*68-132*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
4-Methyl-2-Pentanone	NGV	NGV	*120*	*59-137*	*109*	*59-137*	0.029 U	0.028 U	0.030 U	0.030 U	0.028 U	0.029 U
Toluene	0.7	500[b]	*104*	*65-133*	*107*	*65-133*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
trans-1,3-Dichloropropene	NGV	NGV	*95*	*64-129*	*96*	*64-129*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
cis-1,3-Dichloropropene	NGV	NGV	*102*	*65-129*	*105*	*65-129*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
1,1,2-Trichloroethane	NGV	NGV	*104*	*66-131*	*98*	*66-131*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
2-Hexanone	NGV	NGV	*113*	*58-133*	*102*	*58-133*	0.029 U	0.028 U	0.030 U	0.030 U	0.028 U	0.029 U
Dibromochloromethane	NGV	NGV	*95*	*67-131*	*93*	*67-131*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
1,2-Dibromoethane	NGV	NGV	*100*	*65-130*	*98*	*65-130*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
Tetrachloroethene	1.3	150	*124*	*37-161*	*201**	*37-161*	0.0059 U	0.017	0.0088	0.190	0.0057 U	0.0059
Chlorobenzene	1.1	500[b]	*102*	*66-128*	*104*	*66-128*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
Ethyl Benzene	1[f]	390	*107*	*65-133*	*107*	*65-133*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
m/p-Xylenes	0.26	500[b]	*105*	*62-134*	*105*	*62-134*	0.012 U	0.011 U	0.012 U	0.012 U	0.011 U	0.012 U
o-Xylene	0.26	500[b]	*104*	*65-133*	*105*	*65-133*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
Styrene	NGV	NGV	*105*	*66-127*	*105*	*66-127*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
Bromoform	NGV	NGV	*100*	*68-131*	*95*	*68-131*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
Isopropylbenzene	NGV	NGV	*109*	*64-139*	*112*	*64-139*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
1,1,2,2-Tetrachloroethane	NGV	NGV	*126*	*48-150*	*107*	*48-150*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
1,3-Dichlorobenzene	2.4[f]	280	*105*	*60-129*	*105*	*60-129*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
1,4-Dichlorobenzene	1.8	130	*104*	*59-128*	*104*	*59-128*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
1,2-Dichlorobenzene	1.1[f]	500[b]	*102*	*63-127*	*104*	*63-127*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
1,2-Dibromo-3-Chloropropane	NGV	NGV	*126*	*65-137*	*95*	*65-137*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
1,2,4-Trichlorobenzene	NGV	NGV	*100*	*38-131*	*98*	*38-131*	0.0059 U	0.0056 U	0.0061 U	0.006 U	0.0057 U	0.0058 U
1,2,3-Trichlorobenzene	NGV	NGV	*NA*		*NA*		NA	NA	NA	NA	NA	NA
1,4-Dioxane	0.1[b]	130	*NA*		*NA*		NA	NA	NA	NA	NA	NA

Notes:
All results are in milligrams per kilogram (mg/kg) or parts per million (ppm) except for the trip blanks (TB) and field blanks (FB) which are in micrograms per liter (ug/L) or parts per billion (ppb);
Analytical results are compared to NYSDEC Soil Clean-Up Objectives for Unrestricted and Restricted Commercial uses, obtained from 6 NYCRR Part 375, December 14, 2006;
NGV - No Guidance Value provided by 6 NYCRR Part 375;
RSCO - Recommended Soil Cleanup Objective (SCO);
b - The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3;
c - For constituents where the calculated SCO was lower than the rural soil background concentration, as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 1 SCO value for this use of the site;
f - Protection of ecological resources SCOs were not developed for contaminants identified in Table 375-6.8(b) with "NS". Where such contaminants appear in Table 375-6.8(a), the applicant may be required by the Department to calculate a protection of ecological resources SCO according to the TSD;
ft bgs - Feet below ground surface;
Bold - Indicates analyte detected by laboratory;
Shaded - Indicates the reported value exceeds the UNRESTRICTED RSCO value;
U - The compound was analyzed for but not detected. The value provided is the laboratory reporting limit;
J - The numerical value provided is an estimated quantity;
Q - Indicates LCS control criteria did not meet requirements;
B - Analyte found in associated Method Blank;
E - Value exceeds calibration range;
R - The data are unusable. The analyte may or may not be present;
* - values outside of QC limits;
D - Compound was analyzed at secondary dilution;
NA - not analyzed.

Table 1
Summary of Soil VOC Analytical Results
Method 8260
Ingraham Street Sidewalk Plume Trackdown
East Williamsburg, New York
December 2011, February 2012, and January 2014

		Site ID	SB-4	SB-5	DUP	SB-5	SB-1A	SB-1A	SB-1A	SB-2A
		Field Sample ID	SB-4 (19-20)	SB-5 (13-14)	SB-5 (13-14)	SB-5 (34-35)	SB-1A (15-17)	SB-1A (30-32)	SB-1A (46-48)	SB-2A (13-15)
		Sample Date	2/16/2012	2/17/2012	2/17/2012	2/17/2012	1/17/2014	1/17/2014	1/17/2014	1/21/2014
		Sample Depth (ft bgs)	19-20	13-14	13-14	34-35	15-17	30-32	46-48	13-15
ANALYTE (mg/kg)	RSCO - (Unrestricted)	RSCO - (Restricted Commercial)	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Dichlorodifluoromethane	NGV	NGV	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
Chloromethane	NGV	NGV	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
Vinyl Chloride	0.02[f]	13	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.140	0.0045 J	0.0117	0.0357
Bromomethane	NGV	NGV	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
Chloroethane	NGV	NGV	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 UQ
Trichlorofluoromethane	NGV	NGV	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
1,1,2-Trichlorotrifluoroethane	NGV	NGV	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
1,1-Dichloroethene	0.33[f]	500[b]	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
Acetone	0.05	500[b]	0.028 U	0.028 U	0.029 U	2.900 U	0.0115 J	0.005 J	0.0286 U	0.030 JU
Carbon Disulfide	NGV	NGV	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.0015 J
Methyl tert-butyl Ether	0.93[f]	500[b]	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
Methyl Acetate	NGV	NGV	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
Methylene Chloride	0.05	500[b]	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 JBU	0.006 BU	0.007 BU	0.0022 J
trans-1,2-Dichloroethene	0.19[f]	500[b]	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
1,1-Dichloroethane	0.27[f]	240	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
Cyclohexane	NGV	NGV	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
2-Butanone	0.12	500[b]	0.028 U	0.028 U	0.029 U	2.900 U	0.0297 U	0.0278 U	0.0286 U	0.0041 J
Carbon Tetrachloride	0.76[f]	22	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
cis-1,2-Dichloroethene	0.25[f]	500[b]	0.0057 U	0.0057 U	0.0094	1.800	0.230 EJ	0.140	0.0382	0.0049 J
Bromochloromethane	NGV	NGV	NA	NA	NA	NA	0.0059 U	0.0056 U	0.0057 U	0.006 U
Chloroform	0.37	350	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
1,1,1-Trichloroethane	0.68[f]	500[b]	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
Methylcyclohexane	NGV	NGV	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
Benzene	0.06	44	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
1,2-Dichloroethane	0.02[c]	30	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
Trichloroethene	0.47	200	0.0057 U	0.0057 U	0.0057 U	5.000	0.190 EJ	0.130	0.0381	0.0044 J
1,2-Dichloropropane	NGV	NGV	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
Bromodichloromethane	NGV	NGV	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
4-Methyl-2-Pentanone	NGV	NGV	0.028 U	0.028 U	0.029 U	2.900 U	0.0297 U	0.0278 U	0.0286 U	0.0299 U
Toluene	0.7	500[b]	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
trans-1,3-Dichloropropene	NGV	NGV	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
cis-1,3-Dichloropropene	NGV	NGV	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
1,1,2-Trichloroethane	NGV	NGV	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
2-Hexanone	NGV	NGV	0.028 U	0.028 U	0.029 U	2.900 U	0.0297 U	0.0278 U	0.0286 U	0.0299 U
Dibromochloromethane	NGV	NGV	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
1,2-Dibromoethane	NGV	NGV	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
Tetrachloroethene	1.3	150	0.0057 U	0.0031 J	0.006	850.000	0.0457	2.000 EJ	0.180 EJ	0.0189
Chlorobenzene	1.1	500[b]	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 UQ	0.0056 UQ	0.0057 UQ	0.006 U
Ethyl Benzene	1[f]	390	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 UQ	0.0056 UQ	0.0057 UQ	0.006 U
m/p-Xylenes	0.26	500[b]	0.011 U	0.011 U	0.011 U	1.200 U	0.0119 U	0.0111 U	0.0114 U	0.0119 U
o-Xylene	0.26	500[b]	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
Styrene	NGV	NGV	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
Bromoform	NGV	NGV	0.0057 U	0.0057 U	0.0057 U	0.580 UQ	0.0059 U	0.0056 U	0.0057 U	0.006 U
Isopropylbenzene	NGV	NGV	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
1,1,2,2-Tetrachloroethane	NGV	NGV	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
1,3-Dichlorobenzene	2.4[f]	280	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 UQ	0.0056 UQ	0.0057 UQ	0.006 U
1,4-Dichlorobenzene	1.8	130	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 UQ	0.0056 UQ	0.0057 UQ	0.006 U
1,2-Dichlorobenzene	1.1[f]	500[b]	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 UQ	0.0056 UQ	0.0057 UQ	0.006 U
1,2-Dibromo-3-Chloropropane	NGV	NGV	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0057 U	0.006 U
1,2,4-Trichlorobenzene	NGV	NGV	0.0057 U	0.0057 U	0.0057 U	0.580 U	0.0059 U	0.0056 U	0.0026 J	0.0047 J
1,2,3-Trichlorobenzene	NGV	NGV	NA	NA	NA	NA	0.0059 U	0.0056 U	0.0057 U	0.006 U
1,4-Dioxane	0.1[b]	130	NA	NA	NA	NA	R	R	R	R

Notes:
All results are in milligrams per kilogram (mg/kg) or parts per million (ppm) except for the trip blanks (TB) and field blanks (FB) which are in micrograms per liter (ug/L) or parts per billion (ppb);
Analytical results are compared to NYSDEC Soil Clean-Up Objectives for Unrestricted and Restricted Commercial uses, obtained from 6 NYCRR Part 375, December 14, 2006;
NGV - No Guidance Value provided by 6 NYCRR Part 375;
RSCO - Recommended Soil Cleanup Objective (SCO);
b - The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3;
c - For constituents where the calculated SCO was lower than the rural soil background concentration, as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 1 SCO value for this use of the site;
f - Protection of ecological resources SCOs were not developed for contaminants identified in Table 375-6.8(b) with "NS". Where such contaminants appear in Table 375-6.8(a), the applicant may be required by the Department to calculate a protection of ecological resources SCO according to the TSD;
ft bgs - Feet below ground surface;
Bold - Indicates analyte detected by laboratory;
Shaded - Indicates the reported value exceeds the UNRESTRICTED RSCO value;
U - The compound was analyzed for but not detected. The value provided is the laboratory reporting limit;
J - The numerical value provided is an estimated quantity;
Q - Indicates LCS control criteria did not meet requirements;
B - Analyte found in associated Method Blank;
E - Value exceeds calibration range;
R - The data are unusable. The analyte may or may not be present;
* - values outside of QC limits;
D - Compound was analyzed at secondary dilution;
NA - not analyzed.

Table 1
Summary of Soil VOC Analytical Results
Method 8260
Ingraham Street Sidewalk Plume Trackdown
East Williamsburg, New York
December 2011, February 2012, and January 2014

		Site ID	SB-2A	SB-2A	SB-3A	SB-3A	SB-3A	SB-4A	SB-4A	SB-4A
		Field Sample ID	SB-2A (41-43)	SB-2A (47-49)	SB-3A (13-15)	SB-3A (23-25)	SB-3A (30-32)	SB-4A (13-15)	SB-4A (26-28)	SB-4A (32-34)
		Sample Date	1/21/2014	1/21/2014	1/23/2014	1/23/2014	1/23/2014	1/23/2014	1/23/2014	1/23/2014
		Sample Depth (ft bgs)	41-43	47-49	13-15	23-25	30-32	13-15	26-28	32-34
ANALYTE (mg/kg)	RSCO - (Unrestricted)	RSCO - (Restricted Commercial)	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Dichlorodifluoromethane	NGV	NGV	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
Chloromethane	NGV	NGV	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
Vinyl Chloride	0.02[f]	13	0.0015 J	0.0056 U	0.0058 U	0.0107 J	0.0115	0.0056 U	0.150	0.0017 J
Bromomethane	NGV	NGV	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 UJ	0.0057 U	0.0055 UJ
Chloroethane	NGV	NGV	0.0056 UQ	0.0056 UQ	0.0058 UQ	0.0057 UQJ	0.0056 UQ	0.0056 U	0.0057 U	0.0055 U
Trichlorofluoromethane	NGV	NGV	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
1,1,2-Trichlorotrifluoroethane	NGV	NGV	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
1,1-Dichloroethene	0.33[f]	500[b]	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0032 J	0.0055 U
Acetone	0.05	500[b]	0.028 JU	0.028 JU	0.029 JU	0.0284 UJ	0.028 JU	0.0281 U	0.028 JU	0.028 U
Carbon Disulfide	NGV	NGV	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 UQ	0.0055 U
Methyl tert-butyl Ether	0.93[f]	500[b]	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 UQ	0.0055 U
Methyl Acetate	NGV	NGV	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
Methylene Chloride	0.05	500[b]	0.0056 U	0.0037 J	0.002 J	0.0061 J	0.0052 J	0.0056 UJ	0.0057 UQJ	0.0055 UJ
trans-1,2-Dichloroethene	0.19[f]	500[b]	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0011 J	0.0056 U	0.0077 Q	0.0055 U
1,1-Dichloroethane	0.27[f]	240	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 UQ	0.0055 U
Cyclohexane	NGV	NGV	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
2-Butanone	0.12	500[b]	0.0281 U	0.0282 U	0.0291 U	0.0284 UJ	0.0281 U	0.0281 U	0.0284 U	0.0277 U
Carbon Tetrachloride	0.76[f]	22	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
cis-1,2-Dichloroethene	0.25[f]	500[b]	0.120	0.0035 J	0.0058 U	0.450 D	0.260 D	0.0028 J	1.700 EQJ	0.0061
Bromochloromethane	NGV	NGV	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 UQ	0.0055 U
Chloroform	0.37	350	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 UQ	0.0055 U
1,1,1-Trichloroethane	0.68[f]	500[b]	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
Methylcyclohexane	NGV	NGV	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
Benzene	0.06	44	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
1,2-Dichloroethane	0.02[c]	30	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
Trichloroethene	0.47	200	0.110	0.0211	0.0023 J	0.460 D	0.100	0.0027 J	0.540 EJ	0.002 J
1,2-Dichloropropane	NGV	NGV	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
Bromodichloromethane	NGV	NGV	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
4-Methyl-2-Pentanone	NGV	NGV	0.0281 U	0.0282 U	0.0291 U	0.0284 UJ	0.0281 U	0.0281 U	0.0284 U	0.0277 U
Toluene	0.7	500[b]	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
trans-1,3-Dichloropropene	NGV	NGV	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
cis-1,3-Dichloropropene	NGV	NGV	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
1,1,2-Trichloroethane	NGV	NGV	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
2-Hexanone	NGV	NGV	0.0281 U	0.0282 U	0.0291 U	0.0284 UJ	0.0281 U	0.0281 U	0.0284 U	0.0277 U
Dibromochloromethane	NGV	NGV	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
1,2-Dibromoethane	NGV	NGV	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
Tetrachloroethene	1.3	150	3.400 D	0.900 D	0.0526	1.800 D	0.150	0.0247	0.910 EJ	0.0042 J
Chlorobenzene	1.1	500[b]	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
Ethyl Benzene	1[f]	390	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
m/p-Xylenes	0.26	500[b]	0.0112 U	0.0113 U	0.0116 U	0.0114 UJ	0.0112 U	0.0112 U	0.0114 U	0.0111 U
o-Xylene	0.26	500[b]	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
Styrene	NGV	NGV	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
Bromoform	NGV	NGV	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
Isopropylbenzene	NGV	NGV	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 U	0.0055 U
1,1,2,2-Tetrachloroethane	NGV	NGV	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 UJ	0.0011 J
1,3-Dichlorobenzene	2.4[f]	280	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 UJ	0.0055 U
1,4-Dichlorobenzene	1.8	130	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 UJ	0.0055 U
1,2-Dichlorobenzene	1.1[f]	500[b]	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 UJ	0.0055 U
1,2-Dibromo-3-Chloropropane	NGV	NGV	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 U	0.0057 UJ	0.0055 U
1,2,4-Trichlorobenzene	NGV	NGV	0.0071	0.0064	0.0058 U	0.0057 UJ	0.0056 U	0.0026 J	0.0057 UJ	0.0056
1,2,3-Trichlorobenzene	NGV	NGV	0.0056 U	0.0056 U	0.0058 U	0.0057 UJ	0.0056 U	0.0056 UJ	0.0057 UJ	0.0055 UJ
1,4-Dioxane	0.1[b]	130	R	R	R	R	R	R	R	R

Notes:
All results are in milligrams per kilogram (mg/kg) or parts per million (ppm) except for the trip blanks (TB) and field blanks (FB) which are in micrograms per liter (ug/L) or parts per billion (ppb);
Analytical results are compared to NYSDEC Soil Clean-Up Objectives for Unrestricted and Restricted Commercial uses, obtained from 6 NYCRR Part 375, December 14, 2006;
NGV - No Guidance Value provided by 6 NYCRR Part 375;
RSCO - Recommended Soil Cleanup Objective (SCO);
b - The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3;
c - For constituents where the calculated SCO was lower than the rural soil background concentration, as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 1 SCO value for this use of the site;
f - Protection of ecological resources SCOs were not developed for contaminants identified in Table 375-6.8(b) with "NS". Where such contaminants appear in Table 375-6.8(a), the applicant may be required by the Department to calculate a protection of ecological resources SCO according to the TSD;
ft bgs - Feet below ground surface;
Bold - Indicates analyte detected by laboratory;
Shaded - Indicates the reported value exceeds the UNRESTRICTED RSCO value;
U - The compound was analyzed for but not detected. The value provided is the laboratory reporting limit;
J - The numerical value provided is an estimated quantity;
Q - Indicates LCS control criteria did not meet requirements;
B - Analyte found in associated Method Blank;
E - Value exceeds calibration range;
R - The data are unusable. The analyte may or may not be present;
* - values outside of QC limits;
D - Compound was analyzed at secondary dilution;
NA - not analyzed.

Table 1
Summary of Soil VOC Analytical Results
Method 8260
Ingraham Street Sidewalk Plume Trackdown
East Williamsburg, New York
December 2011, February 2012, and January 2014

		Site ID	SB-5A	SB-5A	SB-5A	FB	Field Blank	Field Blank	Field Blank	Field Blank
		Field Sample ID	SB-5 (12-14)	SB-5 (24-26)	SB-5 (38-40)	FIELDBLANK	FB-01-SLEEVE	FB-02-SLEEVE	FB-03-SLEEVE	FB-04-SLEEVE
		Sample Date	2/18/2014	2/18/2014	2/18/2014	2/15/2012	1/17/2014	1/21/2014	1/23/2014	1/24/2014
		Sample Depth (ft bgs)	12-14	24-26	38-40	---	---	---	---	---
ANALYTE (mg/kg)	RSCO - (Unrestricted)	RSCO - (Restricted Commercial)	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Dichlorodifluoromethane	NGV	NGV	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
Chloromethane	NGV	NGV	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
Vinyl Chloride	0.02[f]	13	0.0018 J	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
Bromomethane	NGV	NGV	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
Chloroethane	NGV	NGV	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
Trichlorofluoromethane	NGV	NGV	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
1,1,2-Trichlorotrifluoroethane	NGV	NGV	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
1,1-Dichloroethene	0.33[f]	500[b]	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
Acetone	0.05	500[b]	0.0082 J	0.0084 J	0.0276 U	25 U	25 U	3.9 J	3.6 J	6.2
Carbon Disulfide	NGV	NGV	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
Methyl tert-butyl Ether	0.93[f]	500[b]	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
Methyl Acetate	NGV	NGV	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
Methylene Chloride	0.05	500[b]	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	0.74 J
trans-1,2-Dichloroethene	0.19[f]	500[b]	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
1,1-Dichloroethane	0.27[f]	240	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
Cyclohexane	NGV	NGV	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 UJ
2-Butanone	0.12	500[b]	0.0283 U	0.0282 U	0.0276 U	25 U	25 U	5 U	5 U	5 U
Carbon Tetrachloride	0.76[f]	22	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	0.25[f]	500[b]	0.0161	0.0206	0.0055 U	5 U	5 U	1 U	1 U	1 U
Bromochloromethane	NGV	NGV	0.0057 U	0.0056 U	0.0055 U	NA	5 U	1 U	1 U	1 U
Chloroform	0.37	350	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
1,1,1-Trichloroethane	0.68[f]	500[b]	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
Methylcyclohexane	NGV	NGV	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
Benzene	0.06	44	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
1,2-Dichloroethane	0.02[c]	30	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
Trichloroethene	0.47	200	0.004 J	0.0056 U	0.0014 J	5 U	5 U	1 U	1 U	1 U
1,2-Dichloropropane	NGV	NGV	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
Bromodichloromethane	NGV	NGV	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
4-Methyl-2-Pentanone	NGV	NGV	0.0283 U	0.0282 U	0.0276 U	25 U	25 U	5 U	5 U	5 U
Toluene	0.7	500[b]	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	0.37 J
trans-1,3-Dichloropropene	NGV	NGV	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	NGV	NGV	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
1,1,2-Trichloroethane	NGV	NGV	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
2-Hexanone	NGV	NGV	0.0283 U	0.0282 U	0.0276 U	25 U	25 U	5 U	5 U	5 U
Dibromochloromethane	NGV	NGV	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
1,2-Dibromoethane	NGV	NGV	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
Tetrachloroethene	1.3	150	0.0221	0.0056 U	0.0238	5 U	5 U	1 U	1 U	1 U
Chlorobenzene	1.1	500[b]	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
Ethyl Benzene	1[f]	390	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
m/p-Xylenes	0.26	500[b]	0.0113 U	0.0113 U	0.011 U	10 U	10 U	2 U	2 U	2 U
o-Xylene	0.26	500[b]	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
Styrene	NGV	NGV	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
Bromoform	NGV	NGV	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
Isopropylbenzene	NGV	NGV	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	NGV	NGV	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
1,3-Dichlorobenzene	2.4[f]	280	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
1,4-Dichlorobenzene	1.8	130	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
1,2-Dichlorobenzene	1.1[f]	500[b]	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
1,2-Dibromo-3-Chloropropane	NGV	NGV	0.0057 U	0.0056 U	0.0055 U	5 U	5 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	NGV	NGV	0.0057 U	0.0078	0.0063	5 U	5 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	NGV	NGV	0.0057 UJ	0.0056 UJ	0.0055 UJ	NA	5 U	1 U	1 U	1 U
1,4-Dioxane	0.1[b]	130	R	R	R	NA	R	R	R	R

Notes:
All results are in milligrams per kilogram (mg/kg) or parts per million (ppm) except for the trip blanks (TB) and field blanks (FB) which are in micrograms per liter (ug/L) or parts per billion (ppb);
Analytical results are compared to NYSDEC Soil Clean-Up Objectives for Unrestricted and Restricted Commercial uses, obtained from 6 NYCRR Part 375, December 14, 2006;
NGV - No Guidance Value provided by 6 NYCRR Part 375;
RSCO - Recommended Soil Cleanup Objective (SCO);
b - The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3;
c - For constituents where the calculated SCO was lower than the rural soil background concentration, as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 1 SCO value for this use of the site;
f - Protection of ecological resources SCOs were not developed for contaminants identified in Table 375-6.8(b) with "NS". Where such contaminants appear in Table 375-6.8(a), the applicant may be required by the Department to calculate a protection of ecological resources SCO according to the TSD;
ft bgs - Feet below ground surface;
Bold - Indicates analyte detected by laboratory;
Shaded - Indicates the reported value exceeds the UNRESTRICTED RSCO value;
U - The compound was analyzed for but not detected. The value provided is the laboratory reporting limit;
J - The numerical value provided is an estimated quantity;
Q - Indicates LCS control criteria did not meet requirements;
B - Analyte found in associated Method Blank;
E - Value exceeds calibration range;
R - The data are unusable. The analyte may or may not be present;
* - values outside of QC limits;
D - Compound was analyzed at secondary dilution;
NA - not analyzed.

Table 1
Summary of Soil VOC Analytical Results
Method 8260
Ingraham Street Sidewalk Plume Trackdown
East Williamsburg, New York
December 2011, February 2012, and January 2014

		Site ID	TB	TRIPBLANK	TRIPBLANK	TRIPBLANK
		Field Sample ID	TRIPBLANK	TRIPBLANK	TRIPBLANK	TRIPBLANKS
		Sample Date	2/15/2012	1/17/2014	1/21/2014	1/24/2014
		Sample Depth (ft bgs)	---	---	---	---
ANALYTE (mg/kg)	RSCO - (Unrestricted)	RSCO - (Restricted Commercial)	Primary	Primary	Primary	Primary
Dichlorodifluoromethane	NGV	NGV	5 U	5 U	1 U	1 U
Chloromethane	NGV	NGV	5 U	5 U	1 U	1 U
Vinyl Chloride	0.02[f]	13	5 U	5 U	1 U	1 U
Bromomethane	NGV	NGV	5 U	5 U	1 U	1 U
Chloroethane	NGV	NGV	5 U	5 U	1 U	1 U
Trichlorofluoromethane	NGV	NGV	5 U	5 U	1 U	1 U
1,1,2-Trichlorotrifluoroethane	NGV	NGV	5 U	5 U	1 U	1 U
1,1-Dichloroethene	0.33[f]	500[b]	5 U	5 U	1 U	1 U
Acetone	0.05	500[b]	25 U	25 U	5 U	5 U
Carbon Disulfide	NGV	NGV	5 U	5 U	1 U	1 U
Methyl tert-butyl Ether	0.93[f]	500[b]	5 U	5 U	1 U	1 U
Methyl Acetate	NGV	NGV	5 U	5 U	1 U	1 U
Methylene Chloride	0.05	500[b]	5 U	5 U	1 U	1 U
trans-1,2-Dichloroethene	0.19[f]	500[b]	5 U	5 U	1 U	1 U
1,1-Dichloroethane	0.27[f]	240	5 U	5 U	1 U	1 U
Cyclohexane	NGV	NGV	5 U	5 U	1 U	1 UJ
2-Butanone	0.12	500[b]	25 U	25 U	5 U	5 U
Carbon Tetrachloride	0.76[f]	22	5 U	5 U	1 U	1 U
cis-1,2-Dichloroethene	0.25[f]	500[b]	5 U	5 U	1 U	1 U
Bromochloromethane	NGV	NGV	NA	5 U	1 U	1 U
Chloroform	0.37	350	5 U	5 U	1 U	1 U
1,1,1-Trichloroethane	0.68[f]	500[b]	5 U	5 U	1 U	1 U
Methylcyclohexane	NGV	NGV	5 U	5 U	1 U	1 U
Benzene	0.06	44	5 U	5 U	1 U	1 U
1,2-Dichloroethane	0.02[c]	30	5 U	5 U	1 U	1 U
Trichloroethene	0.47	200	5 U	5 U	1 U	1 U
1,2-Dichloropropane	NGV	NGV	5 U	5 U	1 U	1 U
Bromodichloromethane	NGV	NGV	5 U	5 U	1 U	1 U
4-Methyl-2-Pentanone	NGV	NGV	25 U	25 U	5 U	5 U
Toluene	0.7	500[b]	5 U	5 U	1 U	1 U
trans-1,3-Dichloropropene	NGV	NGV	5 U	5 U	1 U	1 U
cis-1,3-Dichloropropene	NGV	NGV	5 U	5 U	1 U	1 U
1,1,2-Trichloroethane	NGV	NGV	5 U	5 U	1 U	1 U
2-Hexanone	NGV	NGV	25 U	25 U	5 U	5 U
Dibromochloromethane	NGV	NGV	5 U	5 U	1 U	1 U
1,2-Dibromoethane	NGV	NGV	5 U	5 U	1 U	1 U
Tetrachloroethene	1.3	150	5 U	5 U	1 U	1 U
Chlorobenzene	1.1	500[b]	5 U	5 U	1 U	1 U
Ethyl Benzene	1[f]	390	5 U	5 U	1 U	1 U
m/p-Xylenes	0.26	500[b]	10 U	10 U	2 U	2 U
o-Xylene	0.26	500[b]	5 U	5 U	1 U	1 U
Styrene	NGV	NGV	5 U	5 U	1 U	1 U
Bromoform	NGV	NGV	5 U	5 U	1 U	1 U
Isopropylbenzene	NGV	NGV	5 U	5 U	1 U	1 U
1,1,2,2-Tetrachloroethane	NGV	NGV	5 U	5 U	1 U	1 U
1,3-Dichlorobenzene	2.4[f]	280	5 U	5 U	1 U	1 U
1,4-Dichlorobenzene	1.8	130	5 U	5 U	1 U	1 U
1,2-Dichlorobenzene	1.1[f]	500[b]	5 U	5 U	1 U	1 U
1,2-Dibromo-3-Chloropropane	NGV	NGV	5 U	5 U	1 U	1 U
1,2,4-Trichlorobenzene	NGV	NGV	5 U	5 U	1 U	1 U
1,2,3-Trichlorobenzene	NGV	NGV	NA	5 U	1 U	1 U
1,4-Dioxane	0.1[b]	130	NA	R	R	R

Notes:
All results are in milligrams per kilogram (mg/kg) or parts per million (ppm) except for the trip blanks (TB) and field blanks (FB) which are in micrograms per liter (ug/L) or parts per billion (ppb);
Analytical results are compared to NYSDEC Soil Clean-Up Objectives for Unrestricted and Restricted Commercial uses, obtained from 6 NYCRR Part 375, December 14, 2006;
NGV - No Guidance Value provided by 6 NYCRR Part 375;
RSCO - Recommended Soil Cleanup Objective (SCO);
b - The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3;
c - For constituents where the calculated SCO was lower than the rural soil background concentration, as determined by the Department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 1 SCO value for this use of the site;
f - Protection of ecological resources SCOs were not developed for contaminants identified in Table 375-6.8(b) with "NS". Where such contaminants appear in Table 375-6.8(a), the applicant may be required by the Department to calculate a protection of ecological resources SCO according to the TSD;
ft bgs - Feet below ground surface;
Bold - Indicates analyte detected by laboratory;
Shaded - Indicates the reported value exceeds the UNRESTRICTED RSCO value;
U - The compound was analyzed for but not detected. The value provided is the laboratory reporting limit;
J - The numerical value provided is an estimated quantity;
Q - Indicates LCS control criteria did not meet requirements;
B - Analyte found in associated Method Blank;
E - Value exceeds calibration range;
R - The data are unusable. The analyte may or may not be present;
* - values outside of QC limits;
D - Compound was analyzed at secondary dilution;
NA - not analyzed.

Table 2
Summary of Groundwater VOC Analytical Results
Method 8260
Ingraham Street Sidewalk Plume Trackdown
East Williamsburg, New York
March and May 2012, February and May 2014

	Site ID	MLW-1	MLW-1	MLW-1	MLW-1	MLW-1	MLW-1	MLW-1	MLW-1
	Field Sample ID	MLW-1 (18-20)	MLW-1 (18-20)	MLW-1-CH2	MLW-1 (28-30)	MLW-1 (28-30)	MLW-1-CH3	MLW-1 (38-40)	MLW-1 (38-40)
	Sample Date	3/15/2012	5/10/2012	5/14/2014	3/15/2012	5/10/2012	5/14/2014	3/15/2012	5/10/2012
ANALYTE (µg/L)	NYSDEC Standard or Guidance Value	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Dichlorodifluoromethane	5**	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
Chloromethane	5**	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
Vinyl Chloride	2	0.9 J	5 U	1 U	0.5 J	5 U	0.27 J	5 U	5 U
Bromomethane	5**	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
Chloroethane	5**	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
Trichlorofluoromethane	5**	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
1,1,2-Trichlorotrifluoroethane	5**	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
1,1-Dichloroethene	5**	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
Acetone	50	4.6 J	25 UJ	5 U	25 U	25 UJ	5 U	25 U	25 UJ
Carbon Disulfide	60	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
Methyl tert-butyl Ether	10	0.56 J	7.2	1 U	5 U	0.59 J	1 U	5 U	5 U
Methyl Acetate	NVG	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
Methylene Chloride	5**	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
trans-1,2-Dichloroethene	5**	1.1 J	0.9 J	1.2	5 U	5 U	1 U	5 U	5 U
1,1-Dichloroethane	5**	72	41	10.7	1.2 J	2.8 J	1 U	5 U	5 U
Cyclohexane	NVG	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
2-Butanone	50	25 U	25 UJQ	5 U	25 U	25 UJQ	5 U	25 U	25 UJQ
Carbon Tetrachloride	5	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
cis-1,2-Dichloroethene	5**	99	63	41.9	13	2.8 J	3	3.6 J	5 U
Bromochloromethane	5**	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
Chloroform	7	5 U	5 U	1 U	3.2 J	5 U	0.75 J	5.1	29
1,1,1-Trichloroethane	5**	8.8	7	2.4	5 U	5 U	1 U	5 U	5 U
Methylcyclohexane	NVG	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
Benzene	1	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
1,2-Dichloroethane	0.6	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
Trichloroethene	5**	24	9.2	8.1	7.6	1.1 J	0.85 J	3.6 J	0.68 J
1,2-Dichloropropane	1	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
Bromodichloromethane	50	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
4-Methyl-2-Pentanone	NVG	25 U	25 UJQ	5 U	25 U	25 UJQ	5 U	25 U	25 UJQ
Toluene	5**	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
t-1,3-Dichloropropene	0.4***	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
cis-1,3-Dichloropropene	0.4***	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
1,1,2-Trichloroethane	1	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
2-Hexanone	50	25 U	25 UJQ	5 U	25 U	25 UJQ	5 U	25 U	25 UJQ
Dibromochloromethane	50	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
1,2-Dibromoethane	0.0006	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
Tetrachloroethene	5**	8.8	6.4	9.4	2.5 J	5 U	1.8	1.9 J	1.4 J
Chlorobenzene	5**	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
Ethyl Benzene	5**	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
m/p-Xylenes	5**	10 U	10 UJQ	2 U	10 U	10 UJQ	2 U	10 U	10 UJQ
o-Xylene	5**	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
Styrene	5**	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
Bromoform	50	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
Isopropylbenzene	5**	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
1,1,2,2-Tetrachloroethane	5**	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
1,3-Dichlorobenzene	3	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
1,4-Dichlorobenzene	3	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
1,2-Dichlorobenzene	3	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
1,2-Dibromo-3-Chloropropane	0.04	5 U	5 U	1 U	5 U	5 U	1 U	5 U	5 U
1,2,4-Trichlorobenzene	5**	5 U	5 UJ	1 U	5 U	5 UJ	1 U	5 U	5 UJ
1,2,3-Trichlorobenzene	5**	5 U	5 UJ	1 U	5 U	5 UJ	1 U	5 U	5 UJ
1,4-Dioxane	NVG	R	R	R	R	R	R	R	R

Notes:
All concentrations reported in micrograms per liter (µg/L, equivalent to parts per billion);
(1) New York State Groundwater Quality Standards (NYSGWQS) obtained from NYSDEC Division of Water Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values;
NVG - No standard value listed by NYSGWQS;
BOLD values indicate that the analyte was detected;
Shaded values indicate that the analyte exceeds the NYSGWQS;
* - % Recovery outside QC Limits;
** - The principal organic contaminant standard for groundwater of 5 µg/L applies to this substance;
*** - Applies to the sum of cis- and trans-1,3-Dichloropropene;
U - Indicates that the analyte was not detected at the reporting limit shown;
J - The numerical value provided is an estimated quantity;
R - The data are unusable. The analyte may or may not be present;
Q - Indicates the LCS did not meet the control limits requirements;
NJ - The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value;
D - Compound was analyzed at secondary dilution.

Table 2
Summary of Groundwater VOC Analytical Results
Method 8260
Ingraham Street Sidewalk Plume Trackdown
East Williamsburg, New York
March and May 2012, February and May 2014

	Site ID	MLW-1		MLW-1		MLW-1	MLW-1	MLW-1	MLW-2	MLW-2	MLW-2
	Field Sample ID	MLW-1 MS		MLW-1 MSD		MLW-1 (48-50)	MLW-1 (48-50)	MLW-1-CH5	MLW-2 (18-20)	MLW-2 (18-20)	MLW-2 (20)
	Sample Date	5/10/2012		5/10/2012		3/15/2012	5/10/2012	5/14/2014	3/15/2012	5/10/2012	2/19/2014
ANALYTE (µg/L)	NYSDEC Standard or Guidance Value	Matrix Spike		Matrix Spike Duplicate		Primary	Primary	Primary	Primary	Primary	Primary
		% Rec.	QC Limit	% Rec.	QC Limit						
Dichlorodifluoromethane	5**	*98*	*47-161*	*102*	*47-161*	5 U	5 U	1 U	5 U	5 U	1 U
Chloromethane	5**	*94*	*53-157*	*96*	*53-157*	5 U	5 U	1 U	5 U	5 U	1 U
Vinyl Chloride	2	*98*	*57-149*	*98*	*57-149*	5 U	5 U	1 U	1.8 J	8.4	1.8
Bromomethane	5**	*86*	*45-165*	*90*	*45-165*	5 U	5 U	1 U	5 U	5 U	1 U
Chloroethane	5**	*90*	*47-166*	*90*	*47-166*	5 U	5 U	1 U	5 U	5 U	1 U
Trichlorofluoromethane	5**	*98*	*51-165*	*96*	*51-165*	5 U	5 U	1 U	5 U	5 U	1 U
1,1,2-Trichlorotrifluoroethane	5**	*94*	*61-145*	*98*	*61-145*	5 U	5 U	1 U	5 U	5 U	1 U
1,1-Dichloroethene	5**	*92*	*55-148*	*90*	*55-148*	5 U	5 U	1 U	5 U	5 U	1 U
Acetone	50	*28*	*11-159*	*29*	*11-159*	25 U	25 UJ	5 U	25 U	25 UJ	5 U
Carbon Disulfide	60	*62*	*13-149*	*58*	*13-149*	5 U	5 U	1 U	5 U	5 U	1 U
Methyl tert-butyl Ether	10	*98*	*60-145*	*102*	*60-145*	5 U	5 U	1 U	15	4.3 J	3
Methyl Acetate	NVG	*82*	*27-167*	*84*	*27-167*	5 U	5 U	1 U	5 U	5 U	1 U
Methylene Chloride	5**	*92*	*56-146*	*92*	*56-146*	5 U	5 U	1 U	5 U	5 U	1 U
trans-1,2-Dichloroethene	5**	*92*	*60-141*	*94*	*60-141*	5 U	5 U	1 U	5 U	1.4 J	1 U
1,1-Dichloroethane	5**	*94*	*61-144*	*90*	*61-144*	5 U	5 U	1 U	1.1 J	5 U	0.88 J
Cyclohexane	NVG	*100*	*57-142*	*100*	*57-142*	5 U	5 U	1 U	5 U	5 U	1 UJ
2-Butanone	50	*35**	*42-145*	*36**	*42-145*	25 U	25 UJQ	5 U	25 U	25 UJQ	5 U
Carbon Tetrachloride	5	*104*	*60-140*	*106*	*60-140*	5 U	5 U	1 U	5 U	5 U	1 U
cis-1,2-Dichloroethene	5**	*96*	*48-156*	*96*	*48-156*	1.6 J	0.4 J	1.9	4.6 J	160	6.6
Bromochloromethane	5**	*96*	*59-146*	*94*	*59-146*	5 U	5 U	1 U	5 U	5 U	1 U
Chloroform	7	*88*	*63-140*	*92*	*63-140*	5 U	5 U	1 U	5 U	5 U	1 U
1,1,1-Trichloroethane	5**	*94*	*65-140*	*96*	*65-140*	5 U	5 U	1 U	5 U	5 U	1 U
Methylcyclohexane	NVG	*102*	*62-128*	*104*	*62-128*	5 U	5 U	1 U	5 U	5 U	1 U
Benzene	1	*96*	*62-134*	*98*	*62-134*	5 U	5 U	1 U	5 U	5 U	1 U
1,2-Dichloroethane	0.6	*94*	*67-136*	*98*	*67-136*	5 U	5 U	1 U	5 U	5 U	1 U
Trichloroethene	5**	*101*	*64-131*	*99*	*64-131*	2.2 J	0.55 J	1.2	5 U	50	0.25 J
1,2-Dichloropropane	1	*98*	*69-130*	*98*	*69-130*	5 U	5 U	1 U	5 U	5 U	1 U
Bromodichloromethane	50	*96*	*66-132*	*98*	*66-132*	5 U	5 U	1 U	5 U	5 U	1 U
4-Methyl-2-Pentanone	NVG	*44**	*57-148*	*44**	*57-148*	25 U	25 UJQ	5 U	25 U	25 UJQ	5 U
Toluene	5**	*104*	*68-129*	*104*	*68-129*	5 U	5 U	1 U	0.88 J	0.79 J	1 U
t-1,3-Dichloropropene	0.4***	*106*	*54-136*	*108*	*54-136*	5 U	5 U	1 U	5 U	5 U	1 U
cis-1,3-Dichloropropene	0.4***	*104*	*56-133*	*106*	*56-133*	5 U	5 U	1 U	5 U	5 U	1 U
1,1,2-Trichloroethane	1	*100*	*68-134*	*100*	*68-134*	5 U	5 U	1 U	5 U	5 U	1 U
2-Hexanone	50	*37**	*46-158*	*39**	*46-158*	25 U	25 UJQ	5 U	25 U	25 UJQ	5 U
Dibromochloromethane	50	*102*	*59-136*	*100*	*59-136*	5 U	5 U	1 U	5 U	5 U	1 U
1,2-Dibromoethane	0.0006	*104*	*65-138*	*106*	*65-138*	5 U	5 U	1 U	5 U	5 U	1 U
Tetrachloroethene	5**	*99*	*29-137*	*93*	*29-137*	1.5 J	1.3 J	2.1	5 U	14	1 U
Chlorobenzene	5**	*98*	*68-126*	*92*	*68-126*	5 U	5 U	1 U	5 U	0.58 J	0.67 J
Ethyl Benzene	5**	*104*	*61-131*	*100*	*61-131*	5 U	5 U	1 U	5 U	5 U	1 U
m/p-Xylenes	5**	*53**	*64-125*	*51**	*64-125*	10 U	10 UJQ	2 U	10 U	10 UJQ	2 U
o-Xylene	5**	*108*	*65-126*	*102*	*65-126*	5 U	5 U	1 U	5 U	5 U	1 U
Styrene	5**	*104*	*40-140*	*98*	*40-140*	5 U	5 U	1 U	5 U	5 U	1 U
Bromoform	50	*88*	*42-134*	*86*	*42-134*	5 U	5 U	1 U	5 U	5 U	1 U
Isopropylbenzene	5**	*98*	*58-132*	*98*	*58-132*	5 U	5 U	1 U	5 U	5 U	1 U
1,1,2,2-Tetrachloroethane	5**	*96*	*61-136*	*98*	*61-136*	5 U	5 U	1 U	5 U	5 U	1 U
1,3-Dichlorobenzene	3	*96*	*63-125*	*96*	*63-125*	5 U	5 U	1 U	5 U	5 U	1 U
1,4-Dichlorobenzene	3	*98*	*64-124*	*90*	*64-124*	5 U	5 U	1 U	5 U	5 U	1 U
1,2-Dichlorobenzene	3	*108*	*64-126*	*100*	*64-126*	5 U	5 U	1 U	5 U	5 U	1 U
1,2-Dibromo-3-Chloropropane	0.04	*96*	*57-139*	*106*	*57-139*	5 U	5 U	1 U	5 U	5 U	1 U
1,2,4-Trichlorobenzene	5**	*96*	*57-130*	*94*	*57-130*	5 U	5 UJ	1 U	5 U	5 UJ	1 U
1,2,3-Trichlorobenzene	5**	*92*	*57-131*	*98*	*57-131*	5 U	5 UJ	1 U	5 U	5 UJ	1 U
1,4-Dioxane	NVG	*130*	*50-150*	*170**	*50-150*	R	R	R	R	R	R

Notes:

All concentrations reported in micrograms per liter (µg/L, equivalent to parts per billion);

(1) New York State Groundwater Quality Standards (NYSGWQS) obtained from NYSDEC Division of Water Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values;

NVG - No standard value listed by NYSGWQS;

BOLD values indicate that the analyte was detected;

Shaded values indicate that the analyte exceeds the NYSGWQS;

* - % Recovery outside QC Limits;

** - The principal organic contaminant standard for groundwater of 5 µg/L applies to this substance;

*** - Applies to the sum of cis- and trans-1,3-Dichloropropene;

U - Indicates that the analyte was not detected at the reporting limit shown;

J - The numerical value provided is an estimated quantity;

R - The data are unusable. The analyte may or may not be present;

Q - Indicates the LCS did not meet the control limits requirements;

NJ - The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value;

D - Compound was analyzed at secondary dilution.

Table 2
Summary of Groundwater VOC Analytical Results
Method 8260
Ingraham Street Sidewalk Plume Trackdown
East Williamsburg, New York
March and May 2012, February and May 2014

	Site ID	MLW-2	MLW-2	MLW-2	MLW-2	MLW-2	DUP	MLW-2	MLW-2
	Field Sample ID	MLW-2 (28-30)	MLW-2 (28-30)	MLW-2 (30)	MLW-2 (38-40)	MLW-2 (38-40)	MLW-2 (38-40)	MLW-2 (4)	MLW-2 (48-50)
	Sample Date	3/15/2012	5/10/2012	2/19/2014	3/15/2012	5/10/2012	5/10/2012	2/19/2014	3/15/2012
ANALYTE (µg/L)	NYSDEC Standard or Guidance Value	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Dichlorodifluoromethane	5**	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
Chloromethane	5**	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
Vinyl Chloride	2	0.56 J	1.2 J	0.98 J	5 U	5 U	0.51 J	1 U	5 U
Bromomethane	5**	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
Chloroethane	5**	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
Trichlorofluoromethane	5**	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
1,1,2-Trichlorotrifluoroethane	5**	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
1,1-Dichloroethene	5**	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
Acetone	50	25 U	25 UJ	5 U	25 U	25 UJ	25 UJ	7.2	25 U
Carbon Disulfide	60	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
Methyl tert-butyl Ether	10	1800	2000 J	6.1	1200	1300 J	1100	310 D	5.7
Methyl Acetate	NVG	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
Methylene Chloride	5**	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
trans-1,2-Dichloroethene	5**	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
1,1-Dichloroethane	5**	5 J	4.6 J	4.9	11	9.4	9.7	8.6	0.66 J
Cyclohexane	NVG	5 U	5 U	1 UJ	5 U	5 U	5 U	1 UJ	5 U
2-Butanone	50	25 U	25 UJQ	5 U	25 U	25 UJQ	25 UJQ	5 U	25 U
Carbon Tetrachloride	5	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
cis-1,2-Dichloroethene	5**	0.5 J	17	0.71 J	5 U	4.3 J	5.6	0.38 J	5 U
Bromochloromethane	5**	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
Chloroform	7	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
1,1,1-Trichloroethane	5**	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
Methylcyclohexane	NVG	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
Benzene	1	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
1,2-Dichloroethane	0.6	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
Trichloroethene	5**	5 U	7	0.24 J	5 U	2.6 J	2.9 J	1 U	5 U
1,2-Dichloropropane	1	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
Bromodichloromethane	50	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
4-Methyl-2-Pentanone	NVG	25 U	25 UJQ	5 U	25 U	25 UJQ	25 UJQ	5 U	25 U
Toluene	5**	0.46 J	5 U	1 U	5 U	5 U	5 U	1 U	5 U
t-1,3-Dichloropropene	0.4***	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
cis-1,3-Dichloropropene	0.4***	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
1,1,2-Trichloroethane	1	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
2-Hexanone	50	25 U	25 UJQ	5 U	25 U	25 UJQ	25 UJQ	5 U	25 U
Dibromochloromethane	50	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
1,2-Dibromoethane	0.0006	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
Tetrachloroethene	5**	5 U	2.2 J	1 U	5 U	1.1 J	1.4 J	1 U	5 U
Chlorobenzene	5**	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
Ethyl Benzene	5**	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
m/p-Xylenes	5**	10 U	10 UJQ	2 U	10 U	10 UJQ	10 UJQ	2 U	10 U
o-Xylene	5**	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
Styrene	5**	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
Bromoform	50	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
Isopropylbenzene	5**	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
1,1,2,2-Tetrachloroethane	5**	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
1,3-Dichlorobenzene	3	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
1,4-Dichlorobenzene	3	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
1,2-Dichlorobenzene	3	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
1,2-Dibromo-3-Chloropropane	0.04	5 U	5 U	1 U	5 U	5 U	5 U	1 U	5 U
1,2,4-Trichlorobenzene	5**	5 U	5 UJ	1 U	5 U	5 UJ	5 UJ	1 U	5 U
1,2,3-Trichlorobenzene	5**	5 U	5 UJ	1 U	5 U	5 UJ	5 UJ	1 U	5 U
1,4-Dioxane	NVG	R	R	R	100 U	R	R	R	R

Notes:
All concentrations reported in micrograms per liter (µg/L, equivalent to parts per billion);
(1) New York State Groundwater Quality Standards (NYSGWQS) obtained from NYSDEC Division of Water Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values;
NVG - No standard value listed by NYSGWQS;
BOLD values indicate that the analyte was detected;
Shaded values indicate that the analyte exceeds the NYSGWQS;
* - % Recovery outside QC Limits;
** - The principal organic contaminant standard for groundwater of 5 µg/L applies to this substance;
*** - Applies to the sum of cis- and trans-1,3-Dichloropropene;
U - Indicates that the analyte was not detected at the reporting limit shown;
J - The numerical value provided is an estimated quantity;
R - The data are unusable. The analyte may or may not be present;
Q - Indicates the LCS did not meet the control limits requirements;
NJ - The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value;
D - Compound was analyzed at secondary dilution.

Table 2
Summary of Groundwater VOC Analytical Results
Method 8260
Ingraham Street Sidewalk Plume Trackdown
East Williamsburg, New York
March and May 2012, February and May 2014

	Site ID	DUP	MLW-2	MLW-2	MLW-3	MLW-3	MLW-3	MLW-4	MLW-4
	Field Sample ID	MLW-2 (48-50)	MLW-2 (48-50)	MLW-2 (5)	MLW-3 (5-15)	MLW-3 (20-30)	MLW-3 (40-45)	MLW-4 (5-15)	MLW-4
	Sample Date	3/15/2012	5/10/2012	2/19/2014	2/17/2014	2/18/2014	2/17/2014	5/14/2014	2/17/2014
ANALYTE (µg/L)	NYSDEC Standard or Guidance Value	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Dichlorodifluoromethane	5**	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloromethane	5**	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Vinyl Chloride	2	5 U	5 U	1 U	1 U	1 U	1 U	350 D	310 D
Bromomethane	5**	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroethane	5**	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichlorofluoromethane	5**	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichlorotrifluoroethane	5**	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethene	5**	5 U	5 U	1 U	1 U	1 U	1 U	1	0.82 J
Acetone	50	25 U	25 UJ	5 U	5 U	6.9	5 U	5 U	3.6 J
Carbon Disulfide	60	5 U	5 U	1 U	1 U	1 U	1 U	1 U	0.97 J
Methyl tert-butyl Ether	10	5.7	3.9 J	3.2	0.73 J	4.5	150	10.9	7.3 J
Methyl Acetate	NVG	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylene Chloride	5**	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
trans-1,2-Dichloroethene	5**	5 U	5 U	1 U	1 U	1 U	1 U	1.8 NJ	1.9
1,1-Dichloroethane	5**	0.68 J	5 U	1 U	1 U	1 U	6.4	4.3	2.3 J
Cyclohexane	NVG	5 U	5 U	1 UJ	1 UJ	1 UJ	1 UJ	1 U	1 UJ
2-Butanone	50	25 U	25 UJQ	5 U	5 U	5 U	5 U	5 U	5 U
Carbon Tetrachloride	5	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,2-Dichloroethene	5**	5 U	5 U	0.31 J	0.41 NJ	1 U	1 U	1100 D	1200 D
Bromochloromethane	5**	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Chloroform	7	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,1-Trichloroethane	5**	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylcyclohexane	NVG	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	1	5 U	5 U	1 U	1 U	1 U	1 U	1 U	0.41 J
1,2-Dichloroethane	0.6	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	5**	5 U	5 U	1 U	1 U	1 U	1 U	0.33 J	0.28 J
1,2-Dichloropropane	1	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromodichloromethane	50	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
4-Methyl-2-Pentanone	NVG	25 U	25 UJQ	5 U	5 U	5 U	5 U	5 U	5 U
Toluene	5**	5 U	5 U	1 U	1 U	1 U	1 U	1 U	0.45 J
t-1,3-Dichloropropene	0.4***	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
cis-1,3-Dichloropropene	0.4***	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
2-Hexanone	50	25 U	25 UJQ	5 U	5 U	5 U	5 U	5 U	5 U
Dibromochloromethane	50	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromoethane	0.0006	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Tetrachloroethene	5**	5 U	5 U	1 U	1 U	1 U	1 U	1.7	1 U
Chlorobenzene	5**	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Ethyl Benzene	5**	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
m/p-Xylenes	5**	10 U	10 UJQ	2 U	2 U	2 U	2 U	2 U	2 U
o-Xylene	5**	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Styrene	5**	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Bromoform	50	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	5**	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	5**	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3-Dichlorobenzene	3	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dichlorobenzene	3	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dichlorobenzene	3	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2-Dibromo-3-Chloropropane	0.04	5 U	5 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trichlorobenzene	5**	5 U	5 UJ	1 U	1 U	1 U	1 U	1 U	1 U
1,2,3-Trichlorobenzene	5**	5 U	5 UJ	1 U	1 U	1 U	1 U	1 U	1 U
1,4-Dioxane	NVG	R	R	R	R	100 U	R	R	R

Notes:

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(1) New York State Groundwater Quality Standards (NYSGWQS) obtained from NYSDEC Division of Water Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values;

NVG - No standard value listed by NYSGWQS;

BOLD values indicate that the analyte was detected;

Shaded values indicate that the analyte exceeds the NYSGWQS;

* - % Recovery outside QC Limits;

** - The principal organic contaminant standard for groundwater of 5 µg/L applies to this substance;

*** - Applies to the sum of cis- and trans-1,3-Dichloropropene;

U - Indicates that the analyte was not detected at the reporting limit shown;

J - The numerical value provided is an estimated quantity;

R - The data are unusable. The analyte may or may not be present;

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Summary of Groundwater VOC Analytical Results
Method 8260
Ingraham Street Sidewalk Plume Trackdown
East Williamsburg, New York
March and May 2012, February and May 2014

	Site ID	DUP-1	MLW-4	MLW-4	DUP	MW-6	MW-6		MW-6		MW-6	MW-6
	Field Sample ID	MLW-4	MLW-4 (25-30)	MLW-4 (35-40)	MLW-4 (35-40)	MW-6	MW-6 MS		MW-6 MSD		MW-6	MW-6
	Sample Date	2/17/2014	5/14/2014	5/14/2014	5/14/2014	3/15/2012	3/15/2012		3/15/2012		5/10/2012	2/18/2014
ANALYTE (µg/L)	NYSDEC Standard or Guidance Value	Primary	Primary	Primary	Primary	Primary	Matrix Spike		Matrix Spike Duplicate		Primary	Primary
							% Rec.	QC Limit	% Rec.	QC Limit		
Dichlorodifluoromethane	5**	1 U	1 U	1 U	1 U	5 U	*100*	*30-155*	*100*	*30-155*	5 U	1 U
Chloromethane	5**	1 U	1 U	1 U	1 U	5 U	*86*	*40-125*	*98*	*40-125*	5 U	1 U
Vinyl Chloride	2	440 D	480 D	540 D	460 D	590	*60*	*50-145*	*-120**	*50-145*	770 J	550 D
Bromomethane	5**	1 U	1 U	1 U	1 U	5 U	*82*	*30-145*	*92*	*30-145*	5 U	1 U
Chloroethane	5**	1 U	1 U	1 U	1 U	1.5 J	*87*	*60-135*	*91*	*60-135*	5 U	4.4
Trichlorofluoromethane	5**	1 U	1 U	1 U	1 U	5 U	*106*	*60-145*	*108*	*60-145*	5 U	1 U
1,1,2-Trichlorotrifluoroethane	5**	1 U	1 U	1 U	1 U	5 U	*92*	*52-142*	*92*	*52-142*	5 U	1 U
1,1-Dichloroethene	5**	1.6	1 U	1.6	0.32 J	15	*92*	*70-130*	*94*	*70-130*	16	15.3
Acetone	50	5 U	5 U	5 U	5 U	25 U	*76*	*40-140*	*76*	*40-140*	25 UJ	5 U
Carbon Disulfide	60	1 U	1 U	1 U	1 U	0.79 J	*90*	*35-160*	*94*	*35-160*	5 U	1 U
Methyl tert-butyl Ether	10	14.1 J	12.8	19.3	12.1	5 U	*96*	*65-125*	*98*	*65-125*	5 U	1 U
Methyl Acetate	NVG	1 U	1 U	1 U	1 U	5 U	*94*	*51-158*	*96*	*51-158*	5 U	1 U
Methylene Chloride	5**	1 U	1 U	1 U	1 U	5 U	*96*	*55-140*	*98*	*55-140*	5 U	1 U
trans-1,2-Dichloroethene	5**	2 U	1 U	3.7 NJ	1 U	41	*92*	*60-140*	*84*	*60-140*	63	75.7
1,1-Dichloroethane	5**	4.4 J	3.3	8.9	3.2	5 U	*100*	*70-135*	*104*	*70-135*	5 U	1 U
Cyclohexane	NVG	1 UJ	1 U	1 U	1 U	5 U	*94*	*56-141*	*100*	*56-141*	5 U	1 UJ
2-Butanone	50	5 U	5 U	5 U	5 U	25 U	*32*	*30-150*	*28**	*30-150*	25 UJQ	5 U
Carbon Tetrachloride	5	1 U	1 U	1 U	1 U	5 U	*116*	*65-140*	*118*	*65-140*	5 U	1 U
cis-1,2-Dichloroethene	5**	1700 D	380 D	1800 D	360 D	8100	*200**	*70-125*	*-800**	*70-125*	13000 J	7800 D
Bromochloromethane	5**	1 U	1 U	1 U	1 U	5 U	*98*	*65-130*	*100*	*65-130*	5 U	1 U
Chloroform	7	1 U	1 U	1 U	1 U	5 U	*100*	*65-135*	*104*	*65-135*	5 U	1 U
1,1,1-Trichloroethane	5**	1 U	1 U	1 U	1 U	5 U	*102*	*65-130*	*106*	*65-130*	5 U	1 U
Methylcyclohexane	NVG	1 U	1 U	1 U	1 U	5 U	*90*	*56-137*	*92*	*56-137*	5 U	1 U
Benzene	1	1 U	1 U	1 U	1 U	5 U	*96*	*80-120*	*100*	*80-120*	0.64 J	1 U
1,2-Dichloroethane	0.6	1 U	1 U	1 U	1 U	5 U	*114*	*70-130*	*110*	*70-130*	5 U	1 U
Trichloroethene	5**	0.38 J	1 U	0.42 J	1 U	2400	*0**	*70-125*	*-360**	*70-125*	2400 J	520 D
1,2-Dichloropropane	1	1 U	1 U	1 U	1 U	5 U	*98*	*75-125*	*100*	*75-125*	5 U	1 U
Bromodichloromethane	50	1 U	1 U	1 U	1 U	5 U	*110*	*75-120*	*110*	*75-120*	5 U	1 U
4-Methyl-2-Pentanone	NVG	5 U	5 U	5 U	5 U	25 U	*116*	*60-135*	*116*	*60-135*	25 UJQ	5 U
Toluene	5**	0.26 J	1 U	1 U	1 U	1.7 J	*99*	*75-120*	*101*	*75-120*	0.96 J	0.9 J
t-1,3-Dichloropropene	0.4***	1 U	1 U	1 U	1 U	5 U	*106*	*55-140*	106	*55-140*	5 U	1 U
cis-1,3-Dichloropropene	0.4***	1 U	1 U	1 U	1 U	5 U	*100*	*70-130*	*104*	*70-130*	5 U	1 U
1,1,2-Trichloroethane	1	1 U	1 U	1 U	1 U	5 U	*96*	*75-125*	*98*	*75-125*	5 U	1 U
2-Hexanone	50	5 U	5 U	5 U	5 U	25 U	*116*	*55-130*	*112*	*55-130*	25 UJQ	5 U
Dibromochloromethane	50	1 U	1 U	1 U	1 U	5 U	*114*	*60-135*	*116*	*60-135*	5 U	1 U
1,2-Dibromoethane	0.0006	1 U	1 U	1 U	1 U	5 U	*100*	*80-120*	*102*	*80-120*	5 U	1 U
Tetrachloroethene	5**	1 U	0.92 J	1.4	1	970	*80*	*45-150*	*-280**	*45-150*	620 J	180
Chlorobenzene	5**	1 U	1 U	1 U	1 U	5 U	*94*	*80-120*	*98*	*80-120*	5 U	1 U
Ethyl Benzene	5**	1 U	1 U	1 U	1 U	5 U	*104*	*75-125*	*110*	*75-125*	5 U	1 U
m/p-Xylenes	5**	2 U	2 U	2 U	2 U	10 U	*95*	*75-130*	*100*	*75-130*	10 UJQ	2 U
o-Xylene	5**	1 U	1 U	1 U	1 U	0.59 J	*95*	*80-120*	*99*	*80-120*	5 U	1 U
Styrene	5**	1 U	1 U	1 U	1 U	5 U	*100*	*65-135*	*106*	*65-135*	5 U	1 U
Bromoform	50	1 U	1 U	1 U	1 U	5 U	*110*	*70-130*	*118*	*70-130*	5 U	1 U
Isopropylbenzene	5**	1 U	1 U	1 U	1 U	5 U	*96*	*75-125*	*102*	*75-125*	5 U	1 U
1,1,2,2-Tetrachloroethane	5**	1 U	1 U	1 U	1 U	5 U	*92*	*65-130*	*96*	*65-130*	5 U	1 U
1,3-Dichlorobenzene	3	1 U	1 U	1 U	1 U	5 U	*92*	*75-125*	*96*	*75-125*	5 U	1 U
1,4-Dichlorobenzene	3	1 U	1 U	1 U	1 U	5 U	*92*	*75-125*	*94*	*75-125*	5 U	1 U
1,2-Dichlorobenzene	3	1 U	1 U	1 U	1 U	5 U	*94*	*70-120*	*98*	*70-120*	5 U	1 U
1,2-Dibromo-3-Chloropropane	0.04	1 U	1 U	1 U	1 U	5 U	*108*	*50-130*	*108*	*50-130*	5 U	1 U
1,2,4-Trichlorobenzene	5**	1 U	1 U	1 U	1 U	5 U	*96*	*65-135*	*98*	*65-135*	5 UJ	1 U
1,2,3-Trichlorobenzene	5**	1 U	1 U	1 U	1 U	5 U	*106*	*55-140*	*110*	*55-140*	5 UJ	1 U
1,4-Dioxane	NVG	R	R	R	R	R	*92*	*50-150*	*87*	*50-150*	R	R

Notes:

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(1) New York State Groundwater Quality Standards (NYSGWQS) obtained from NYSDEC Division of Water Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values;

NVG - No standard value listed by NYSGWQS;

BOLD values indicate that the analyte was detected;

Shaded values indicate that the analyte exceeds the NYSGWQS;

* - % Recovery outside QC Limits;

** - The principal organic contaminant standard for groundwater of 5 µg/L applies to this substance;

*** - Applies to the sum of cis- and trans-1,3-Dichloropropene;

U - Indicates that the analyte was not detected at the reporting limit shown;

J - The numerical value provided is an estimated quantity;

R - The data are unusable. The analyte may or may not be present;

Q - Indicates the LCS did not meet the control limits requirements;

NJ - The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value;

D - Compound was analyzed at secondary dilution.

Table 2
Summary of Groundwater VOC Analytical Results
Method 8260
Ingraham Street Sidewalk Plume Trackdown
East Williamsburg, New York
March and May 2012, February and May 2014

	Site ID	FB(FIELDBLANK)	FIELDBLANK	FB-01	TRIPBLANK	TRIPBLANK	TRIPBLANK	TRIPBLANK
	Field Sample ID	Field Blank	Field Blank	Field Blank	Trip Blank	Trip Blank	Trip Blank	Trip Blank
	Sample Date	3/15/2012	5/10/2012	5/14/2014	3/15/2012	5/10/2012	2/19/2014	5/14/2014
ANALYTE (µg/L)	NYSDEC Standard or Guidance Value	Primary	Primary	Primary	Primary	Primary	Primary	Primary
Dichlorodifluoromethane	5**	5 U	5 U	1 U	5 U	5 U	1 U	1 U
Chloromethane	5**	5 U	5 U	1 U	5 U	5 U	1 U	1 U
Vinyl Chloride	2	5 U	5 U	1 U	5 U	5 U	1 U	1 U
Bromomethane	5**	5 U	5 U	1 U	5 U	5 U	1 U	1 U
Chloroethane	5**	5 U	5 U	1 U	5 U	5 U	1 U	1 U
Trichlorofluoromethane	5**	5 U	5 U	1 U	5 U	5 U	1 U	1 U
1,1,2-Trichlorotrifluoroethane	5**	5 U	5 U	1 U	5 U	5 U	1 U	1 U
1,1-Dichloroethene	5**	5 U	5 U	1 U	5 U	5 U	1 U	1 U
Acetone	50	25 U	25 U	5 U	25 U	25 UJ	5 U	5 U
Carbon Disulfide	60	5 U	5 U	1 U	5 U	5 U	1 U	1 U
Methyl tert-butyl Ether	10	5 U	5 U	1 U	5 U	5 U	1 U	1 U
Methyl Acetate	NVG	5 U	5 U	1 U	5 U	5 U	1 U	1 U
Methylene Chloride	5**	5 U	5 U	1 U	5 U	5 U	1 U	1 U
trans-1,2-Dichloroethene	5**	5 U	5 U	1 U	5 U	5 U	1 U	1 U
1,1-Dichloroethane	5**	5 U	5 U	1 U	5 U	5 U	1 U	1 U
Cyclohexane	NVG	5 U	5 U	1 U	5 U	5 U	1 UJ	1 U
2-Butanone	50	25 U	25 UJQ	5 U	25 U	25 UJQ	5 U	5 U
Carbon Tetrachloride	5	5 U	5 U	1 U	5 U	5 U	1 U	1 U
cis-1,2-Dichloroethene	5**	5 U	5 U	1 U	5 U	5 U	1 U	1 U
Bromochloromethane	5**	5 U	5 U	1 U	5 U	5 U	1 U	1 U
Chloroform	7	5 U	5 U	1 U	5 U	5 U	1 U	1 U
1,1,1-Trichloroethane	5**	5 U	5 U	1 U	5 U	5 U	1 U	1 U
Methylcyclohexane	NVG	5 U	5 U	1 U	5 U	5 U	1 U	1 U
Benzene	1	5 U	5 U	1 U	5 U	5 U	1 U	1 U
1,2-Dichloroethane	0.6	5 U	5 U	1 U	5 U	5 U	1 U	1 U
Trichloroethene	5**	5 U	5 U	1 U	5 U	5 U	1 U	1 U
1,2-Dichloropropane	1	5 U	5 U	1 U	5 U	5 U	1 U	1 U
Bromodichloromethane	50	5 U	5 U	1 U	5 U	5 U	1 U	1 U
4-Methyl-2-Pentanone	NVG	25 U	25 UJQ	5 U	25 U	25 UJQ	5 U	5 U
Toluene	5**	5 U	5 U	1 U	5 U	5 U	1 U	1 U
t-1,3-Dichloropropene	0.4***	5 U	5 U	1 U	5 U	5 U	1 U	1 U
cis-1,3-Dichloropropene	0.4***	5 U	5 U	1 U	5 U	5 U	1 U	1 U
1,1,2-Trichloroethane	1	5 U	5 U	1 U	5 U	5 U	1 U	1 U
2-Hexanone	50	25 U	25 UJQ	5 U	25 U	25 UJQ	5 U	5 U
Dibromochloromethane	50	5 U	5 U	1 U	5 U	5 U	1 U	1 U
1,2-Dibromoethane	0.0006	5 U	5 U	1 U	5 U	5 U	1 U	1 U
Tetrachloroethene	5**	5 U	5 U	1 U	5 U	5 U	1 U	1 U
Chlorobenzene	5**	5 U	5 U	1 U	5 U	5 U	1 U	1 U
Ethyl Benzene	5**	5 U	5 U	1 U	5 U	5 U	1 U	1 U
m/p-Xylenes	5**	10 U	10 UJQ	2 U	10 U	10 UJQ	2 U	2 U
o-Xylene	5**	5 U	5 U	1 U	5 U	5 U	1 U	1 U
Styrene	5**	5 U	5 U	1 U	5 U	5 U	1 U	1 U
Bromoform	50	5 U	5 U	1 U	5 U	5 U	1 U	1 U
Isopropylbenzene	5**	5 U	5 U	1 U	5 U	5 U	1 U	1 U
1,1,2,2-Tetrachloroethane	5**	5 U	5 U	1 U	5 U	5 U	1 U	1 U
1,3-Dichlorobenzene	3	5 U	5 U	1 U	5 U	5 U	1 U	1 U
1,4-Dichlorobenzene	3	5 U	5 U	1 U	5 U	5 U	1 U	1 U
1,2-Dichlorobenzene	3	5 U	5 U	1 U	5 U	5 U	1 U	1 U
1,2-Dibromo-3-Chloropropane	0.04	5 U	5 U	1 U	5 U	5 U	1 U	1 U
1,2,4-Trichlorobenzene	5**	5 U	5 UJ	1 U	5 U	5 UJ	1 U	1 U
1,2,3-Trichlorobenzene	5**	5 U	5 UJ	1 U	5 U	5 UJ	1 U	1 U
1,4-Dioxane	NVG	R	R	R	R	R	R	R

Notes:
All concentrations reported in micrograms per liter (µg/L, equivalent to parts per billion);
(1) New York State Groundwater Quality Standards (NYSGWQS) obtained from NYSDEC Division of Water Technical and Operational Guidance Series (1.1.1) Ambient Water Quality Standards and Guidance Values;
NVG - No standard value listed by NYSGWQS;
BOLD values indicate that the analyte was detected;
Shaded values indicate that the analyte exceeds the NYSGWQS;
* - % Recovery outside QC Limits;
** - The principal organic contaminant standard for groundwater of 5 µg/L applies to this substance;
*** - Applies to the sum of cis- and trans-1,3-Dichloropropene;
U - Indicates that the analyte was not detected at the reporting limit shown;
J - The numerical value provided is an estimated quantity;
R - The data are unusable. The analyte may or may not be present;
Q - Indicates the LCS did not meet the control limits requirements;
NJ - The detection is tentative in identification and estimated in value. Although there is presumptive evidence of the analyte, the result should be used with caution as a potential false positive and/or elevated quantitative value;
D - Compound was analyzed at secondary dilution.

Table 3
Groundwater Sampling Field Data
Ingraham Street Sidewalk Plume Trackdown
East Williamsburg, New York
March and May 2012

Well ID	Date	Top of Well Casing Elevation (feet MSL)	Depth to Water (feet BTOC)	Depth to Bottom (feet BTOC)	Groundwater Elevation (feet MSL)	Temperature (^{0}C)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	pH (SU)	Oxidation-Reduction Potential (ORP) (mV)	Turbidity (NTU)	Comment
MLW-1 Ch.2	03/15/2012	22.47	NAM	20	NAM	NM	NM	NM	NM	NM	NM	
	05/10/2012			20								Murky water
MLW-1 Ch.3	03/15/2012	22.47	NAM	30	NAM	16.08	0.328	0.37	7.43	-55	3.6	clear water
	05/10/2012			30		16.54	0.532	0.42	6.91	-71	-3.9	clear water
MLW-1 Ch.4	03/15/2012	22.47	NAM	40	NAM	16.04	0.0152	0.33	7.49	38.3	2.8	clear water
	05/10/2012			40		16.32	0.147	0.81	7.0	49	-2.2	clear water
MLW-1 Ch.5	03/15/2012	22.47	NAM	50	NAM	15.70	0.138	0.3	7.64	50.4	5.0	clear water
	05/10/2012			50		17.47	0.127	0.24	7.18	22	-3.8	clear water
MLW-2 Ch.2	03/15/2012	12.64	NAM	20	NAM	13.50	1.161	4.449	7.21	-34	7.8	clear water
	05/10/2012			20		17.12	1.223	1.99	6.88	-64	20.1	clear water
MLW-2 Ch.3	03/15/2012	12.64	NAM	30	NAM	15.46	1.425	0.28	7.11	-75	47.6	clear water
	05/10/2012			30		16.99	1.249	0.47	6.56	-65	26.5	clear water
MLW-2 Ch.4	03/15/2012	12.64	NAM	40	NAM	15.39	7.12	0.27	6.96	-53	35.2	clear water
	05/10/2012			40		16.88	1.321	0.41	6.5	-45	1.86	clear water
MLW-2 Ch.5	03/15/2012	12.64	NAM	50	NAM	14.26	2.77	3.21	6.96	-56	24.2	clear water
	05/10/2012			50		17.28	1.935	0.6	6.39	-45	7.2	clear water
MW-6	03/15/2012	20.15	13.60	26.27	6.55	16.46	1.6	0.32	7.35	1.7	89.7	clear water
	05/10/2012		11.60	26.27	8.55	17.00	1.88	0.58	6.73	-17	4.4	clear water

NOTES:
1. All wells are 2.0-inch diameter;
2. All parameters were collected via Low Flow through a YSI 6820 Multi-Parameter water quality probe except MLW-1 (20')
3. All results represent final purge water parameters collected immediately prior to sampling;
4. 'feet MSL' - Feet above Mean Sea Level;
5. 'feet BTOC' - Feet Below Top Of Casing. The top of the well casing was used as a reference point to calculate groundwater elevations;
6. ^{0}C - Degrees Celsius;
7. mS/cm - Microsiemens per centimeter;
8. mg/L - Milligrams per Liter. This unit is equivalent to parts per million (ppm);
9. SU - Standard pH Units;
10. mV - Milivolts;
11. NTU - Nephelometric Turbidity Units.
12. NAM - Not Able to Measure;
13. NM - Not measured.

Table 4
Groundwater Sampling Field Data
Ingraham Street Sidewalk Plume Trackdown
East Williamsburg, New York
February and May 2014

Well ID	Date	Top of Well Casing Elevation (feet MSL)	Depth to Water (feet BTOC)	Depth to Bottom (feet BTOC)	Groundwater Elevation (feet MSL)	Temperature (^{0}C)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	pH (SU)	Oxidation-Reduction Potential (ORP) (mV)	Turbidity (NTU)	Comment
MLW-2 (4')	02/19/2014	12.64	NM	NM	NM	12.33	1.955	22.5	6.75	-36.5	33.1	clear sample
MLW-2 (5')	02/19/2014	12.64	7.25	NM	5.39	15.16	2.569	5.4	6.36	-51.1	2.2	clear sample
MLW-2 (20')	02/19/2014	12.64	7.25	49.9	5.39	11.78	2.806	58.7	6.98	-70.7	36.5	silty/cloudy sample with black color and odor
MLW-2 (30')	02/19/2014	12.64	7.25	NM	5.39	13.71	2.911	13.2	6.48	-50.9	16.6	clear sample
MLW-3 (5'-15')	02/17/2014	13.32	NM	NM	NM	11.40	1.411	16.4	6.56	-19.5	17.5	clear sample
MLW-3 (20'-30')	02/18/2014	13.32	9.18	30.25	4.14	12.75	1.191	5.5	7.25	-139.2	16.9	clear but silty sample
MLW-3 (40'-45')	02/17/2014	13.32	8.33	45.21	4.99	11.39	1.412	15.0	6.54	-20.2	7.7	clear sample
MLW-4	02/17/2014	12.34	7.61	39.40	4.73	10.11	3.840	11.2	6.80	-38.2	96.8	clear sample with odor
MW-6	02/18/2014	20.15	13.79	26.21	6.36	13.74	1.313	39.6	6.61	-18.2	38.2	clear sample with gray color
MLW-1 (20')	05/14/2014	22.47	16.20	19.36	6.27	NM	NM	NM	NM	NM	NM	cloudy brownish sample with slight odor
MLW-1 (30')	05/14/2014	22.47	16.35	29.43	6.12	17.47	0.443	0.70	7.43	-60	17.1	clear sample with slight odor
MLW-1 (50')	05/14/2014	22.47	16.40	49.59	6.07	17.43	0.630	1.99	7.20	-18	NM	clear sample
MLW-4 (15')	05/14/2014	12.34	7.45	15.00	4.89	15.70	1.59	0.67	6.98	-81	4.0	clear sample
MLW-4 (30')	05/14/2014	12.34	7.75	30.00	4.59	19.21	1.35	0.82	7.47	-94	27.5	clear sample
MLW-4 (40')	05/14/2014	12.34	7.25	39.32	5.09	19.02	1.47	0.43	6.90	-51	41.4	clear sample

NOTES:

1. All parameters were collected via Low Flow through a YSI Multi-Parameter water quality probe;
2. All results represent final purge water parameters collected immediately prior to sampling;
3. 'feet MSL' - Feet above Mean Sea Level;
4. 'feet BTOC' - Feet Below Top Of Casing. The top of the well casing was used as a reference point to calculate groundwater elevations;
5. ^{0}C - Degrees Celsius;
6. mS/cm - Microsiemens per centimeter;
7. mg/L - Milligrams per Liter. This unit is equivalent to parts per million (ppm);
8. SU - Standard pH Units;
9. mV - Milivolts;
10. NTU - Nephelometric Turbidity Units;
11. NM - Not measured.

Table 5
Survey Data
Ingraham Street Sidewalk Plume Trackdown
East Williamsburg, New York
March 2012 and May 2014

Location ID	North	East	Elevation
MIP1	196999.73	1003504.13	19.58
MIP10	197025.03	1003624.62	20.02
MIP11	197022.21	1003614.44	20.08
MIP12	197013.98	1003571.05	20.10
MIP2	196982.86	1003426.66	19.06
MIP3	197008.62	1003551.77	19.93
MIP4	197020.56	1003601.38	20.17
MIP5	197035.55	1003672.92	19.66
MIP6	197027.07	1003633.89	20.01
MIP7	196961.61	1003572.50	20.02
MIP8	196979.39	1003659.39	20.01
MIP9	196967.54	1003591.16	20.17
MLW1	196817.74	1003645.06	22.47
MLW2	197204.92	1003466.95	12.64
MLW-2	197205.05	1003466.91	12.54
MLW-3	197175.96	1003342.29	13.60
MLW-3 Top of PVC	197176.07	1003342.23	13.32
MLW-4	197225.73	1003572.43	12.62
MLW-4	197225.75	1003572.99	12.62
MLW-4	197225.77	1003573.54	12.62
MLW-4 Top of PVC	197225.78	1003572.43	12.34
MW1	197002.51	1003559.80	19.71
MW2	196968.02	1003597.75	20.20
MW3	197020.47	1003646.33	19.73
MW6	197021.98	1003608.17	20.15
NW2	196975.93	1003627.18	20.17
SB1	197026.89	1003632.52	20.01
SB1A	197017.43	1003584.42	20.08
SB2	197024.78	1003623.41	20.04
SB2A	197002.59	1003559.73	19.71
SB3	197022.36	1003612.68	20.10
SB-3A	197014.08	1003572.53	20.07
SB4	197020.98	1003603.06	20.18
SB4A	197009.10	1003552.42	19.89
SB5	197014.04	1003572.68	20.06
SB5A	197007.57	1003536.76	19.71
SV1*	196973.49	1003625.58	20.33
SV1*	196980.15	1003404.08	18.84
SV2	197206.01	1003471.70	12.55
SV3	197175.82	1003341.34	13.57
SV4	197225.21	1003572.50	12.63
SV5	197013.82	1003564.55	20.10
SV6	197024.74	1003622.42	20.04
SV7	197035.72	1003673.81	19.68

Notes:

1. Survey performed by Hirani Engineering & Surveying, P.C of Jericho, New York on March 15, 2012 and May 20, 2014.
2. Horizontal Datum is assumed.
3. Vertical Datum is North American Vertical Datum (NAVD) 1988.

Table 6
Soil Gas VOC Analytical Results
Method TO-15
Ingraham Street Sidewalk Plume Trackdown
East Williamsburg, New York
February 20, 2014

Site ID	SV-1	SV-2	SV-4	SV-5	SV-5	SV-6	SV-7	AMBIENT
Field Sample ID	SV-1	SV-2	SV-4	SV-5	SV-DUP	SV-6	SV-7	AMBIENT
Sample Date	2/20/2014	2/20/2014	2/20/2014	2/20/2014	2/20/2014	2/20/2014	2/20/2014	2/20/2014
Analytes (µg/m^3)	PRIMARY	PRIMARY	PRIMARY	PRIMARY	PRIMARY	PRIMARY	PRIMARY	PRIMARY
Dichlorodifluoromethane	24.7 U	2.72	2.77	2.67	24.7 U	3.96 J	4.94 J	2.92
Ethanol	9.42 U	169 E	105 D	37.7 UD	33.4	35.4	19.6	34.1 E
Chloromethane	10.3 U	0.62 J	1.03	1.03 U	10.3 U	10.3 U	10.3 U	1.18
Vinyl Chloride	12.8 U	0.33 J	19.7	1.28 U	12.8 U	12.8 U	12.8 U	1.28 U
Ethyl Acetate	19.8 U	1.98 U	145 D	38.1	17.5 J	14.7 J	19.8 U	15.9
Bromomethane	19.4 U	1.94 U	1.94 U	1.94 U	19.4 U	19.4 U	19.4 U	1.94 U
Chloroethane	13.2 U	0.29 J	1.32 U	1.32 U	13.2 U	13.2 U	13.2 U	1.32 U
Tetrahydrofuran	14.8 U	1.47 U	1.47 U	1.47 U	14.8 U	14.8 U	14.8 U	1.47 U
Trichlorofluoromethane	28.1 U	1.69 J	2.14 J	8.43	6.74 J	12.4 J	6.74 J	1.52 J
1,1,2-Trichlorotrifluoroethane	38.3 U	0.69 J	0.69 J	3.83 U	38.3 U	38.3 U	38.3 U	3.83 U
Dichlorotetrafluoroethane	35 U	3.49 U	3.49 U	3.49 U	35.0 U	35.0 U	35.0 U	3.49 U
Propene	8.59 U	22.7	46.7 D	0.86 U	8.59 U	8.59 U	4.47 J	3.95
Heptane	23.4	14.8	2.75	19.7	11.9 J	18.4 J	18.0 J	3.32
Isopropyl Alcohol	12.3 U	17.0	14.5	20.4	12.3 U	19.4	12.3	1.23 U
1,1-Dichloroethene	19.8 U	1.98 U	1.98 U	1.98 U	19.8 U	19.8 U	19.8 U	1.98 U
Acetone	122	75.3 D	75.3 D	59.9 D	140	81.7	131	19.5
Carbon Disulfide	115	19.9	22.4	2.43	15.6 U	8.1 J	25.5	1.56 U
Methyl tert-Butyl Ether	18.0 U	1.8 U	1.8 U	1.8 U	18.0 U	18.0 U	18.0 U	1.8 U
Methylene Chloride	27.4	10.1	22.9	5.91	17.4 U	17.4 U	17.4 U	6.95
trans-1,2-Dichloroethene	1.98 J	1.98 U	1.98 U	1.98 U	19.8 U	2.38 J	19.8 U	1.98 U
Vinyl Acetate	18 U	1.8 U	1.8 U	1.8 U	18 U	18 U	18 U	1.8 U
1,1-Dichloroethane	20.2 U	2.02 U	2.02 U	2.02 U	20.2 U	20.2 U	20.2 U	2.02 U
Cyclohexane	69.5	9.64	2.99	1.72 U	17.2 U	17.2 U	17.2 U	0.48 J
2-Butanone	5.9 J	8.26	6.49	6.78	4.13 J	6.49 J	5.31 J	1.89
Carbon Tetrachloride	31.4 U	0.31 J	0.44 J	3.15 U	31.4 U	31.4 U	31.4 U	0.5 J
cis-1,2-Dichloroethene	173	1.98 U	43.2	1.7 J	19.8 U	14.3 J	250	1.98 U
Chloroform	8.3 J	1.81 J	0.44 J	11.2	9.28 J	3.91 J	586	2.44 U
1,1,1-Trichloroethane	6 J	2.73 U	2.73 U	0.71 J	27.3 U	27.3 U	4.36 J	2.73 U
Benzene	16.0 U	4.47	4.79	2.27	16.0 U	1.92 J	2.88 J	1.85
1,2-Dichloroethane	20.2 U	2.02 U	2.02 U	2.02 U	20.2 U	20.2 U	20.2 U	2.02 U
Trichloroethene	806	0.43 J	0.59 J	111 D	128	269	524 D	2.69 U
1,2-Dichloropropane	23.1 U	2.31 U	2.31 U	2.31 U	23.1 U	23.1 U	23.1 U	2.31 U
Bromodichloromethane	33.5 U	3.35 U	3.35 U	3.35 U	33.5 U	33.5 U	33.5 U	3.35 U
4-Methyl-2-Pentanone	20.5 U	2.05 U	2.05 U	2.05 U	20.5 U	20.5 U	20.5 U	2.05 U
Toluene	32.8	19.6	22.2	32.8	16.2 J	28.6	27.5	7.16
t-1,3-Dichloropropene	22.7 U	2.27 U	2.27 U	2.27 U	22.7 U	22.7 U	22.7 U	2.27 U
cis-1,3-Dichloropropene	22.7 U	2.27 U	2.27 U	2.27 U	22.7 U	22.7 U	22.7 U	2.27 U
1,1,2-Trichloroethane	27.3 U	2.73 U	2.73 U	2.73 U	27.3 U	27.3 U	27.3 U	2.73 U
2-Hexanone	20.4 U	2.04 U	2.04 U	2.04 U	20.4 U	20.4 U	20.4 U	2.04 U
Dibromochloromethane	42.6 U	4.26 U	4.26 U	4.26 U	42.6 U	42.6 U	42.6 U	4.26 U
1,2-Dibromoethane	38.4 U	3.84 U	3.84 U	3.84 U	38.4 U	38.4 U	38.4 U	3.84 U
Tetrachloroethene	3865 D	4.95	1.02 J	2102 D	2169 D	2509 D	2712 D	0.68 J
Chlorobenzene	23.0 U	2.3 U	2.3 U	2.3 U	23.0 U	23.0 U	23.0 U	2.3 U
Ethyl Benzene	9.12 J	4.04	1.87 J	6.52	4.34 J	7.38 J	7.38 J	0.96 J
m/p-Xylene	30.8 J	13.5	5.21	22.6	16.9 J	30.4 J	26.9 J	3.47 J
o-Xylene	9.56 J	5.65	2 J	7.82	6.08 J	8.25 J	7.82 J	1.26 J
Styrene	21.3 U	2.13 U	2.13 U	2.13 U	21.3 U	21.3 U	21.3 U	2.13 U
Bromoform	51.7 U	5.17 U	5.17 U	5.17 U	51.7 U	51.7 U	51.7 U	5.17 U
1,1,2,2-Tetrachloroethane	34.3 U	3.43 U	3.43 U	3.43 U	34.3 U	34.3 U	34.3 U	3.43 U
1,3,5-Trimethylbenzene	24.6 U	1.28 J	2.46 U	1.52 J	24.6 U	24.6 U	24.6 U	2.46 U
1,2,4-Trimethylbenzene	5.9 J	4.67	0.54 J	5.41	24.6 U	4.92 J	24.6 U	0.93 J
1,3-Dichlorobenzene	30.1 U	2.1 J	3.01 U	2.1 J	30.1 U	30.1 U	30.1 U	3.01 U
1,4-Dichlorobenzene	30.1 U	3.01 U	3.01 U	3.01 U	30.1 U	30.1 U	30.1 U	3.01 U
1,2-Dichlorobenzene	30.1 U	3.01 U	3.01 U	3.01 U	30.1 U	30.1 U	30.1 U	3.01 U
1,2,4-Trichlorobenzene	37.1 U	1.78 J	3.71 U	18.6	37.1 U	37.1 U	5.2 J	3.71 U
Hexachloro-1,3-Butadiene	53.3 U	5.33 U	5.33 U	5.33 U	53.3 U	53.3 U	53.3 U	5.33 U
1,3-Butadiene	11.1 U	1.11 U	1.11 U	1.11 U	11.1 U	11.1 U	11.1 U	1.11 U
Naphthalene	26.2 U	0.58 J	2.62 U	0.52 J	26.2 U	26.2 U	26.2 U	2.62 U
4-Ethyltoluene	5.41 J	1.67 J	2.46 U	3.05	24.6 U	24.6 U	24.6 U	2.46 U
Hexane	17.6 U	20.1	1.76 U	1.76 U	17.6 U	17.6 U	17.6 U	1.76 U
Benzyl Chloride	25.9 U	2.59 U	2.59 U	2.59 U	25.9 U	25.9 U	25.9 U	2.59 U

Notes:

All results are in µg/m^3 (micrograms per cubic meter).

Bold - Indicates analyte detected by laboratory.

U - The compound was not detected at the indicated concentration.

J - Data indicates the presence of a compound that meets the identification criteria. The result is less than the quantitation limit but greater than MDL. The concentration given is an approximate value.

E (Organics) - Indicates the analyte 's concentration exceeds the calibrated range of the instrument for that specific analysis.

E (Inorganics) - The reported value is estimated because of the presence of interference.

D - The reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.

Figures

DRAWING NUMBER	APPROVED BY	CHECKED BY	DRAWN BY	DESIGNED BY	DATE
134685-A1	H. Fariello	N. Robertson	A. Smith	N. Robertson	4/24/12

REFERENCE:
MAP FROM WWW.GOOGLE.COM

NOT TO SCALE

Shaw Environmental, Inc.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 1

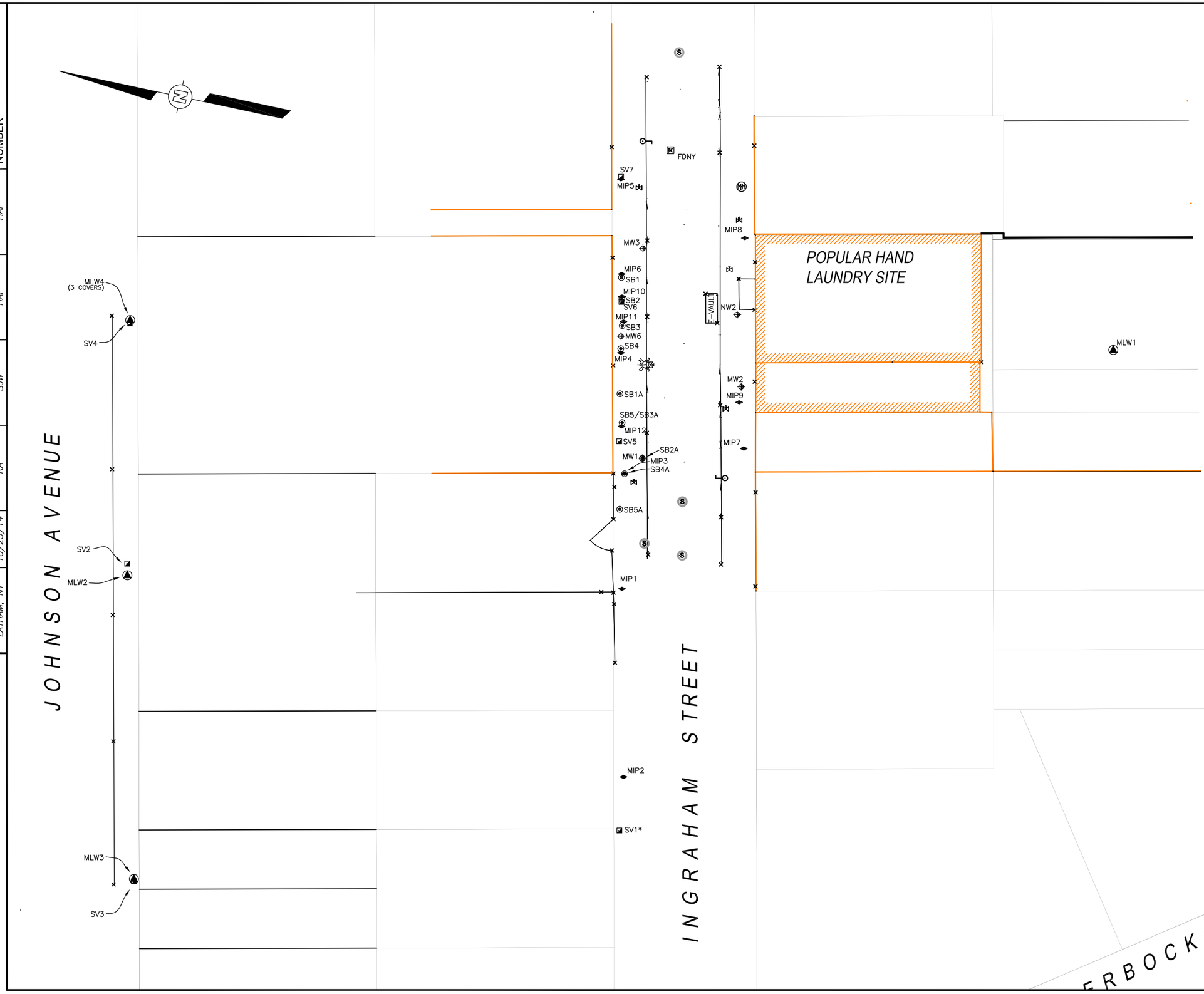
SITE LOCATION MAP

INGRAHAM STREET SIDEWALK PLUME TRACKDOWN

EAST WILLIAMSBURG, NEW YORK

File: U:\Project\134685\15\NOV 2014 REPORT\134685A1.dwg
User: steven.walsh Nov 18, 2014 - 8:22am Layout: 1 - Site Location Map

OFFICE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
LATHAM, NY	10/23/14	RA	SJW	HAF	HAF	134685-15B10



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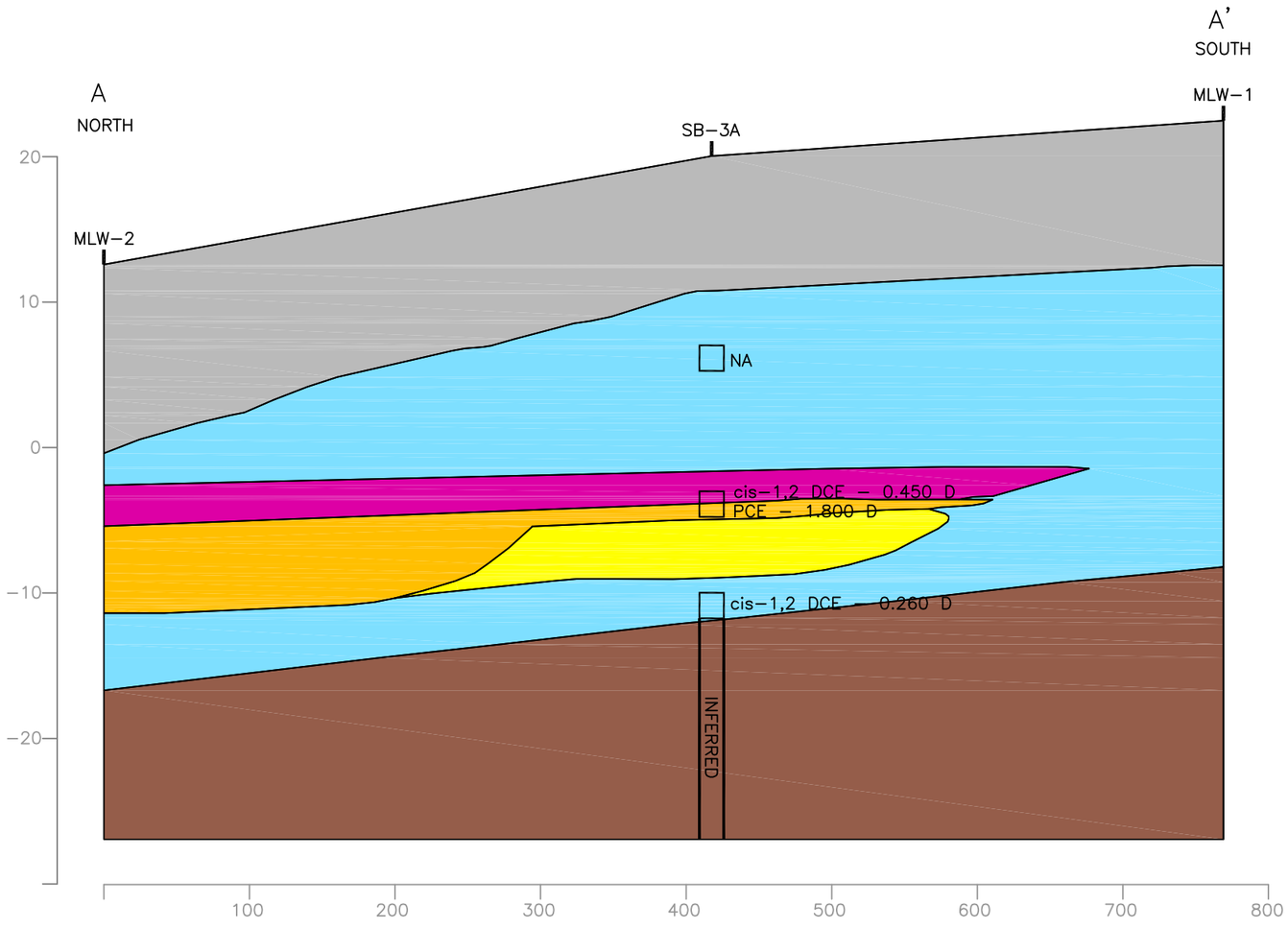
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 2
SAMPLING LOCATIONS

INGRAHAM STREET SIDEWALK PLUME TRACK DOWN

EAST WILLIAMSBURGH, NEW YORK

File: U:\Project\134685\15\NOV 2014 REPORT\134685-15B10.dwg
Plot Date/Time: Feb 02, 2015 - 12:35pm
Plotted By: steven.walsh
Xref: 12-1046 - PL
Image :



LEGEND

- FILL
- SANDY SILT
- SILT
- SILTY SAND
- WELL GRADED (WG) SAND
- POORLY GRADED (PG) SAND
- SOIL SAMPLE LOCATION

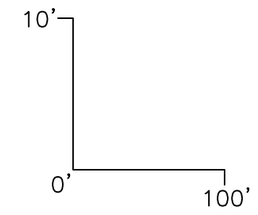
NOTES:

NA – NO DETECTIONS ABOVE NYSDOC STANDARD OR GUIDANCE VALUE.

SOIL SAMPLES COLLECTED IN JANUARY/FEBRUARY 2014.

VALUES REPORTED IN mg/kg

FULL ANALYTICAL DATA CAN BE FOUND IN TABLES



VERTICAL EXAGGERATION=10X

REFERENCE:

PLAN DERIVED FROM CB&I ENVIRONMENTAL & INFRASTRUCTURE FIELD RECONNAISSANCE.

Shaw Environmental, Inc.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 3

GEOLOGIC CROSS SECTION A–A'

INGRAHAM STREET SIDEWALK PLUME TRACKDOWN
EAST WILLIAMSBURGH, NEW YORK

OFFICE	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
LATHAM, NY	CD 02/02/15	RA 02/02/15	-- --	134685–WILLIAMSBURG XSECT

XREF Files: IMAGE Files: TO BE DELETED INGRAHAM XSECTION 2.jpg
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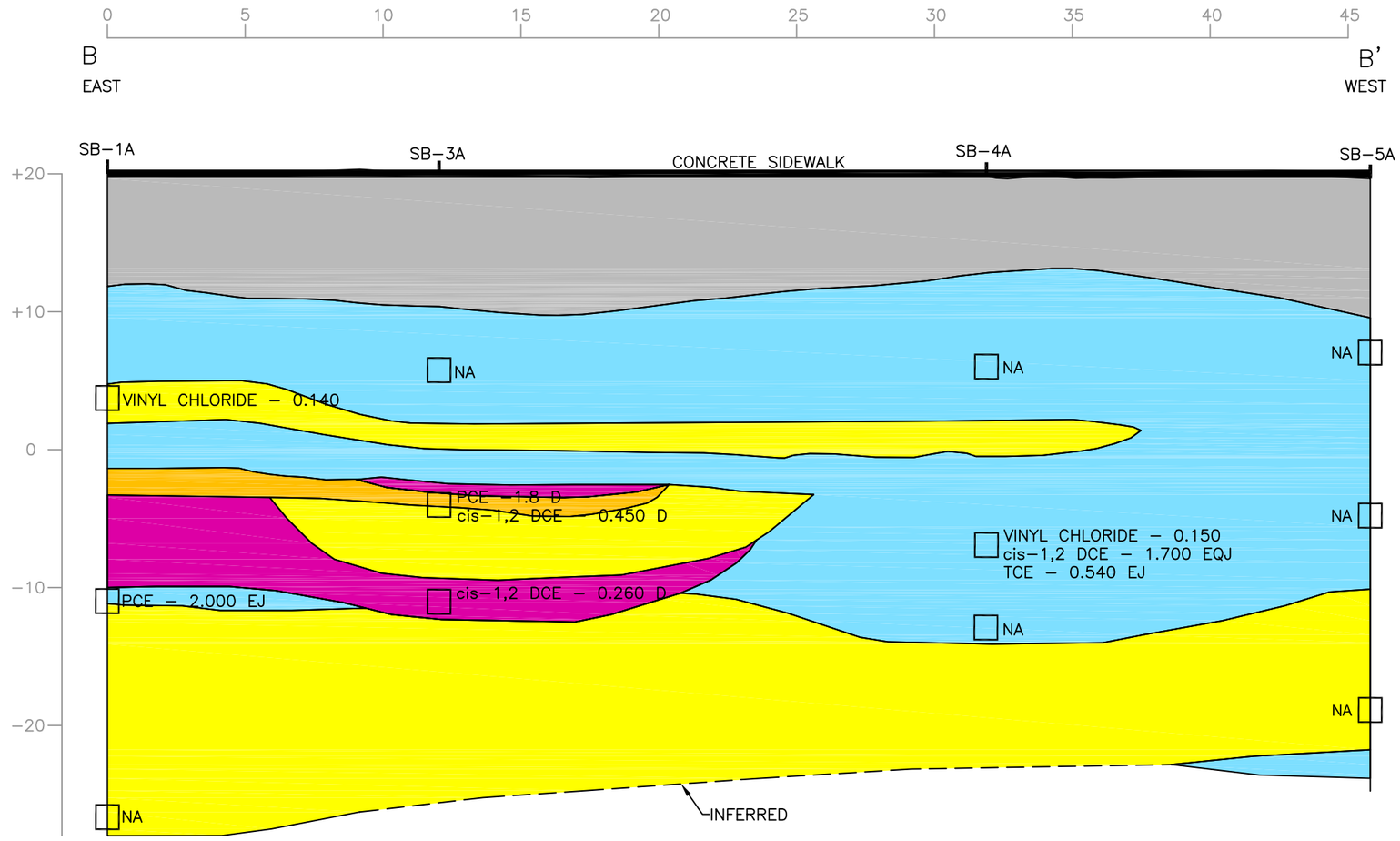
Plot Date/Time: Feb 05, 2015 – 10:41am
Plotted By: chris.desiato



LEGEND

- FILL
- SANDY SILT
- SILT
- SILTY SAND
- WELL GRADED (WG) SAND
- SOIL SAMPLE LOCATION

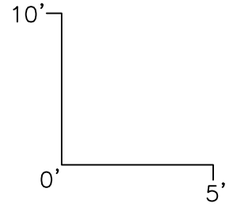
NOTES:

NA – NO DETECTIONS ABOVE NYSDOC STANDARD OR GUIDANCE VALUE.

SOIL SAMPLES COLLECTED IN JANUARY/FEBRUARY 2014.

VALUES REPORTED IN mg/kg

FULL ANALYTICAL DATA CAN BE FOUND IN TABLES



VERTICAL EXAGGERATION=2X

REFERENCE:

PLAN DERIVED FROM CB&I ENVIRONMENTAL & INFRASTRUCTURE FIELD RECONNAISSANCE.

Shaw Environmental, Inc.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 4

GEOLOGIC CROSS SECTION B–B'

INGRAHAM STREET SIDEWALK PLUME TRACKDOWN
EAST WILLIAMSBURGH, NEW YORK

OFFICE	DRAWN BY	CHECKED BY	APPROVED BY	DRAWING NUMBER
LATHAM, NY	CD	RA	--	134685–WILLIAMSBURG XSECT
	02/02/15	02/02/15	--	

XREF Files: IMAGE Files: TO BE DELETED INGRAHAM XSECTION 2.jpg
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Plotted By: chris.desiato

DRAWING NUMBER	134685-15B10
APPROVED BY	HAF
CHECKED BY	HAF
DRAWN BY	SJW
DESIGNED BY	RA
DATE	10/23/14
OFFICE	LATHAM, NY

File: U:\Project\134685\15\NOV 2014 REPORT\134685-15B10.dwg
Plot Date/Time: Jan 28, 2015 - 3:44pm
Plotted By: steven.walsh
Xref : 12-1046 - PL
Image :

Site ID	SB-1	SB-1
Field Sample ID	SB-1 (14-15)	SB-1 (24-25)
Sample Date	2/16/2012	2/16/2012
Sample Depth (ft bgs)	14-15	24-25

ANALYTE (mg/kg)	RSCO - (Unrestricted)	RSCO - (Restricted Commercial)	Primary	Primary
Acetone	0.05	500[b]	**0.031**	**0.029**
Methylene Chloride	0.05	500[b]	**0.0029 J**	**0.0028 J**
cis-1,2-Dichloroethene	0.25[f]	500[b]	**0.0026 J**	**0.0042 J**
Trichloroethene	0.47	200	**2.8 J**	**0.010**
Tetrachloroethene	1.3	150	0.0059 U	**0.017**

Site ID	SB-2
Field Sample ID	SB-2 (14-15)
Sample Date	2/16/2012
Sample Depth (ft bgs)	14-15

ANALYTE (mg/kg)	RSCO - (Unrestricted)	RSCO - (Restricted Commercial)	Primary
Vinyl Chloride	0.02[f]	13	**0.0062**
Acetone	0.05	500[b]	**0.240**
Methylene Chloride	0.05	500[b]	**0.0036 J**
2-Butanone	0.12	500[b]	**0.061**
cis-1,2-Dichloroethene	0.25[f]	500[b]	**0.013**
Trichloroethene	0.47	200	**0.0027 J**
Tetrachloroethene	1.3	150	**0.0088**

Site ID	SB-3	SB-3
Field Sample ID	SB-3 (12-13)	SB-3 (19-20)
Sample Date	2/16/2012	2/16/2012
Sample Depth (ft bgs)	12-13	19-20

ANALYTE (mg/kg)	RSCO - (Unrestricted)	RSCO - (Restricted Commercial)	Primary	Primary
Acetone	0.05	500[b]	**0.078**	**0.039**
2-Butanone	0.12	500[b]	**0.013 J**	0.028 U
cis-1,2-Dichloroethene	0.25[f]	500[b]	**0.012**	0.0057 U
Trichloroethene	0.47	200	**0.033**	0.0057 U
Tetrachloroethene	1.3	150	**0.190**	0.0057 U

Site ID	MLW-2
Field Sample ID	MLW-2 (15-16)
Sample Date	2/15/2012
Sample Depth (ft bgs)	15-16

ANALYTE (mg/kg)	RSCO - (Unrestricted)	RSCO - (Restricted Commercial)	Primary
Acetone	0.05	500[b]	**0.029**
Methylene Chloride	0.05	500[b]	**0.0032 J**

Site ID	MW-6	MW-6
Field Sample ID	SB-6 (14-15)	SB-6 (19-20)
Sample Date	2/17/2012	2/17/2012
Sample Depth (ft bgs)	14-15	19-20

ANALYTE (mg/kg)	RSCO - (Unrestricted)	RSCO - (Restricted Commercial)	Primary	Primary
Acetone	0.05	500[b]	0.029 U	**0.016 J**
Methylene Chloride	0.05	500[b]	0.0058 U	**0.0031 J**
cis-1,2-Dichloroethene	0.25[f]	500[b]	0.0058 U	**0.0025 J**
Trichloroethene	0.47	200	0.0058 U	**0.0066**
Tetrachloroethene	1.3	150	0.0058 U	**0.0055 J**

Site ID	MLW-1	MLW-1	FIELD DUP-A
Field Sample ID	MLW-1 (22)	MLW-1 (25-30)	MLW-1 (25-30)
Sample Date	12/15/2011	12/14/2011	12/15/2011
Sample Depth (ft bgs)	22	25-30	25-30

ANALYTE (mg/kg)	RSCO - (Unrestricted)	RSCO - (Restricted Commercial)	Primary	Primary	Primary
Methylcyclohexane	NGV	NGV	0.0056 U	**0.0095**	0.0056 U

Site ID	SB-4	SB-4
Field Sample ID	SB-4 (12-13)	SB-4 (19-20)
Sample Date	2/16/2012	2/16/2012
Sample Depth (ft bgs)	12-13	19-20

ANALYTE (mg/kg)	RSCO - (Unrestricted)	RSCO - (Restricted Commercial)	Primary	Primary
Tetrachloroethene	1.3	150	**0.0059**	0.0057 U

Site ID	SB-5	DUP	SB-5
Field Sample ID	SB-5 (13-14)	SB-5 (13-14)	SB-5 (34-35)
Sample Date	2/17/2012	2/17/2012	2/17/2012
Sample Depth (ft bgs)	13-14	13-14	34-35

ANALYTE (mg/kg)	RSCO - (Unrestricted)	RSCO - (Restricted Commercial)	Primary	Primary	Primary
cis-1,2-Dichloroethene	0.25[f]	500[b]	0.0057 U	**0.0094**	**1.800**
Trichloroethene	0.47	200	0.0057 U	0.0057 U	**5.000**
Tetrachloroethene	1.3	150	**0.0031 J**	**0.006**	**850.000**

JOHNSON AVENUE

INGRAHAM STREET

FLUSHING AVENUE

POPULAR HAND LAUNDRY SITE

MLW4 (3 COVERS)
SV4
SV2
MLW2
MLW3
SV3
SV7
MIP5
FDNY
MIP6
SB1
MIP10
SB2
SV6
MIP11
SB3
MW6
SB4
MIP4
SB1A
SB5/SB3A
MIP12
SV5
MW1
SB2A
MIP3
SB4A
SB5A
MIP1
MIP2
SV1*
MW3
MIP8
NW2
E-VAULT
MW2
MIP9
MIP7
MLW1

LEGEND:

- MULTI-LEVEL WELLS
- MONITORING WELL
- SOIL BORING
- MIP1
- SOIL VAPOR POINT

SCALE
0 40 80 FEET

Shaw Environmental, Inc.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 5
SOIL VOC ANALYTICAL DETECTIONS
DECEMBER 2011, FEBRUARY 2012
INGRAHAM STREET SIDEWALK PLUME TRACKDOWN
EAST WILLIAMSBURG, NEW YORK

DRAWING NUMBER	APPROVED BY	CHECKED BY	DRAWN BY	DESIGNED BY	DATE
134685-15B10	HAF	HAF	SJW	RA	10/23/14

OFFICE: LATHAM, NY

JOHNSON AVENUE

INGRAHAM STREET

Site ID	SB-1A	SB-1A	SB-1A
Field Sample ID	SB-1A (15-17)	SB-1A (30-32)	SB-1A (46-48)
Sample Date	1/17/2014	1/17/2014	1/17/2014
Sample Depth (ft bgs)	15-17	30-32	46-48

ANALYTE (mg/kg)	RSCO - (Unrestricted)	RSCO - (Restricted Commercial)	Primary	Primary	Primary
Vinyl Chloride	0.02[f]	13	**0.140**	**0.0045 J**	**0.0117**
Acetone	0.05	500[b]	**0.0115 J**	**0.005 J**	0.0286 U
cis-1,2-Dichloroethene	0.25[f]	500[b]	**0.230 EJ**	**0.140**	**0.0382**
Trichloroethene	0.47	200	**0.190 EJ**	**0.130**	**0.0381**
Tetrachloroethene	1.3	150	**0.0457**	**2.000 EJ**	**0.180 EJ**
1,2,4-Trichlorobenzene	NGV	NGV	0.0059 U	0.0056 U	**0.0026 J**

Site ID	SB-2A	SB-2A	SB-2A
Field Sample ID	SB-2A (13-15)	SB-2A (41-43)	SB-2A (47-49)
Sample Date	1/21/2014	1/21/2014	1/21/2014
Sample Depth (ft bgs)	13-15	41-43	47-49

ANALYTE (mg/kg)	RSCO - (Unrestricted)	RSCO - (Restricted Commercial)	Primary	Primary	Primary
Vinyl Chloride	0.02[f]	13	**0.0357**	**0.0015 J**	0.0056 U
Carbon Disulfide	NGV	NGV	**0.0015 J**	0.0056 U	0.0056 U
Methylene Chloride	0.05	500[b]	**0.0022 J**	0.0056 U	**0.0037 J**
2-Butanone	0.12	500[b]	**0.0041 J**	0.0281 U	0.0282 U
cis-1,2-Dichloroethene	0.25[f]	500[b]	**0.0049 J**	**0.120**	**0.0035 J**
Trichloroethene	0.47	200	**0.0044 J**	**0.110**	**0.0211**
Tetrachloroethene	1.3	150	**0.0189**	**3.400 D**	**0.900 D**
1,2,4-Trichlorobenzene	NGV	NGV	**0.0047 J**	**0.0071**	**0.0064**

Site ID	SB-3A	SB-3A	SB-3A
Field Sample ID	SB-3A (13-15)	SB-3A (23-25)	SB-3A (30-32)
Sample Date	1/23/2014	1/23/2014	1/23/2014
Sample Depth (ft bgs)	13-15	23-25	30-32

ANALYTE (mg/kg)	RSCO - (Unrestricted)	RSCO - (Restricted Commercial)	Primary	Primary	Primary
Vinyl Chloride	0.02[f]	13	0.0058 U	**0.0107 J**	**0.0115**
Methylene Chloride	0.05	500[b]	**0.002 J**	**0.0061 J**	**0.0052 J**
trans-1,2-Dichloroethene	0.19[f]	500[b]	0.0058 U	0.0057 UJ	**0.0011 J**
cis-1,2-Dichloroethene	0.25[f]	500[b]	0.0058 U	**0.450 D**	**0.260 D**
Trichloroethene	0.47	200	**0.0023 J**	**0.460 D**	**0.100**
Tetrachloroethene	1.3	150	**0.0526**	**1.800 D**	**0.150**

Site ID	SB-4A	SB-4A	SB-4A
Field Sample ID	SB-4A (13-15)	SB-4A (26-28)	SB-4A (32-34)
Sample Date	1/23/2014	1/23/2014	1/23/2014
Sample Depth (ft bgs)	13-15	26-28	32-34

ANALYTE (mg/kg)	RSCO - (Unrestricted)	RSCO - (Restricted Commercial)	Primary	Primary	Primary
Vinyl Chloride	0.02[f]	13	0.0056 U	**0.150**	**0.0017 J**
1,1-Dichloroethene	0.33[f]	500[b]	0.0056 U	**0.0032 J**	0.0055 U
trans-1,2-Dichloroethene	0.19[f]	500[b]	0.0056 U	**0.0077 Q**	0.0055 U
cis-1,2-Dichloroethene	0.25[f]	500[b]	**0.0028 J**	**1.700 EQJ**	**0.0061**
Trichloroethene	0.47	200	**0.0027 J**	**0.540 EJ**	**0.002 J**
Tetrachloroethene	1.3	150	**0.0247**	**0.910 EJ**	**0.0042 J**
1,1,2,2-Tetrachloroethane	NGV	NGV	0.0056 U	0.0057 UJ	**0.0011 J**
1,2,4-Trichlorobenzene	NGV	NGV	**0.0026 J**	0.0057 UJ	**0.0056**

Site ID	SB-5A	SB-5A	SB-5A
Field Sample ID	SB-5 (12-14)	SB-5 (24-26)	SB-5 (38-40)
Sample Date	2/18/2014	2/18/2014	2/18/2014
Sample Depth (ft bgs)	12-14	24-26	38-40

ANALYTE (mg/kg)	RSCO - (Unrestricted)	RSCO - (Restricted Commercial)	Primary	Primary	Primary
Vinyl Chloride	0.02[f]	13	**0.0018 J**	0.0056 U	0.0055 U
Acetone	0.05	500[b]	**0.0082 J**	**0.0084 J**	0.0276 U
cis-1,2-Dichloroethene	0.25[f]	500[b]	**0.0161**	**0.0206**	0.0055 U
Trichloroethene	0.47	200	**0.004 J**	0.0056 U	**0.0014 J**
Tetrachloroethene	1.3	150	**0.0221**	0.0056 U	**0.0238**
1,2,4-Trichlorobenzene	NGV	NGV	0.0057 U	**0.0078**	**0.0063**

POPULAR HAND LAUNDRY SITE

MLW4 (3 COVERS)
SV4
SV2
MLW2
MLW3
SV3
SV7
MIP5
MW3
MIP6
SB1
MIP10
SB2
SV6
MIP11
SB3
MW6
SB4
MIP4
SB1A
SB5/SB3A
MIP12
SV5
MW1
SB2A
MIP3
SB4A
SB5A
MIP1
MIP2
SV1*
FDNY
MH
MIP8
NW2
E-VAULT
MW2
MIP9
MIP7
MLW1

LEGEND:

- MULTI-LEVEL WELLS
- MONITORING WELL
- SOIL BORING
- MIP1
- SOIL VAPOR POINT

N

SCALE
0 40 80 FEET

Shaw Environmental, Inc.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 6
SOIL VOC ANALYTICAL DETECTIONS
JANUARY AND FEBRUARY 2014
INGRAHAM STREET SIDEWALK PLUME TRACKDOWN
EAST WILLIAMSBURG, NEW YORK

File: U:\Project\134685\15\NOV 2014 REPORT\134685-15B10.dwg
Plot Date/Time: Jan 28, 2015 - 3:57pm
Plotted By: steven.walsh
Xref: 12-1046 - PL
Image:

DRAWING NUMBER	134685-15B10
APPROVED BY	HAF
CHECKED BY	HAF
DRAWN BY	SJW
DESIGNED BY	RA
DATE	10/23/14
OFFICE	LATHAM, NY

File: U:\Project\134685\15\NOV 2014 REPORT\134685-15B10.dwg Xref: 12-1046 - PL
Plot Date/Time: Jan 28, 2015 - 4:07pm Image :
Plotted By: steven.walsh

JOHNSON AVENUE

INGRAHAM STREET

Site ID		MW-6
Field Sample ID		MW-6
Sample Date		3/15/2012
ANALYTE (µg/L)	NYSDEC Standard or Guidance Value	Primary
Vinyl Chloride	2	590
Chloroethane	5**	1.5 J
1,1-Dichloroethene	5**	15
Carbon Disulfide	60	0.79 J
trans-1,2-Dichloroethene	5**	41
cis-1,2-Dichloroethene	5**	8100
Trichloroethene	5**	2400
Toluene	5**	1.7 J
Tetrachloroethene	5**	970
o-Xylene	5**	0.59 J

Site ID		MLW-1	MLW-1	MLW-1	MLW-1
Field Sample ID		MLW-1 (18-20)	MLW-1 (28-30)	MLW-1 (38-40)	MLW-1 (48-50)
Sample Date		3/15/2012	3/15/2012	3/15/2012	3/15/2012
ANALYTE (µg/L)	NYSDEC Standard or Guidance Value	Primary	Primary	Primary	Primary
Vinyl Chloride	2	0.9 J	0.5 J	5 U	5 U
Acetone	50	4.6 J	25 U	25 U	25 U
Methyl tert-butyl Ether	10	0.56 J	5 U	5 U	5 U
trans-1,2-Dichloroethene	5**	1.1 J	5 U	5 U	5 U
1,1-Dichloroethane	5**	72	1.2 J	5 U	5 U
cis-1,2-Dichloroethene	5**	99	13	3.6 J	1.6 J
Chloroform	7	5 U	3.2 J	5.1	5 U
1,1,1-Trichloroethane	5**	8.8	5 U	5 U	5 U
Trichloroethene	5**	24	7.6	3.6 J	2.2 J
Tetrachloroethene	5**	8.8	2.5 J	1.9 J	1.5 J

Site ID		MLW-2	MLW-2	MLW-2	MLW-2	DUP
Field Sample ID		MLW-2 (18-20)	MLW-2 (28-30)	MLW-2 (38-40)	MLW-2 (48-50)	MLW-2 (48-50)
Sample Date		3/15/2012	3/15/2012	3/15/2012	3/15/2012	3/15/2012
ANALYTE (µg/L)	NYSDEC Standard or Guidance Value	Primary	Primary	Primary	Primary	Primary
Vinyl Chloride	2	1.8 J	0.56 J	5 U	5 U	5 U
Methyl tert-butyl Ether	10	15	1800	1200	5.7	5.7
1,1-Dichloroethane	5**	1.1 J	5 J	11	0.66 J	0.68 J
cis-1,2-Dichloroethene	5**	4.6 J	0.5 J	5 U	5 U	5 U
Toluene	5**	0.88 J	0.46 J	5 U	5 U	5 U

POPULAR HAND LAUNDRY SITE

MLW4 (3 COVERS)
SV4
SV2
MLW2
MLW3
SV3
SV7
MIP5
FDNY
MW3
MIP6
SB1
MIP10
SB2
SV6
MIP11
SB3
MW6
SB4
MIP4
SB1A
SB5/SB3A
MIP12
SV5
MW1
SB2A
MIP3
SB4A
SB5A
MIP1
MIP2
SV1*
MIP8
NW2
E-VAULT
MW2
MIP9
MIP7
MLW1

LEGEND:

- MULTI-LEVEL WELLS
- MONITORING WELL
- SOIL BORING
- MIP1
- SOIL VAPOR POINT

N

SCALE
0 40 80 FEET

Shaw Shaw Environmental, Inc.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 7
GROUNDWATER VOC ANALYTICAL DETECTIONS MARCH 2012
INGRAHAM STREET SIDEWALK PLUME TRACKDOWN

EAST WILLIAMSBURG, NEW YORK

DRAWING NUMBER	134685-15B10
APPROVED BY	HAF
CHECKED BY	HAF
DRAWN BY	SJW
DESIGNED BY	RA
DATE	10/23/14
OFFICE	LATHAM, NY

	Site ID	MW-6
	Field Sample ID	MW-6
	Sample Date	5/10/2012
ANALYTE (µg/L)	NYSDEC Standard or Guidance Value	Primary
Vinyl Chloride	2	770 J
1,1-Dichloroethene	5**	16
trans-1,2-Dichloroethene	5**	63
cis-1,2-Dichloroethene	5**	13000 J
Benzene	1	0.64 J
Trichloroethene	5**	2400 J
Toluene	5**	0.96 J
Tetrachloroethene	5**	620 J

	Site ID	MLW-1	MLW-1	MLW-1	MLW-1
	Field Sample ID	MLW-1 (18-20)	MLW-1 (28-30)	MLW-1 (38-40)	MLW-1 (48-50)
	Sample Date	5/10/2012	5/10/2012	5/10/2012	5/10/2012
ANALYTE (µg/L)	NYSDEC Standard or Guidance Value	Primary	Primary	Primary	Primary
Methyl tert-butyl Ether	10	7.2	0.59 J	5 U	5 U
trans-1,2-Dichloroethene	5**	0.9 J	5 U	5 U	5 U
1,1-Dichloroethane	5**	41	2.8 J	5 U	5 U
cis-1,2-Dichloroethene	5**	63	2.8 J	5 U	0.4 J
Chloroform	7	5 U	5 U	29	5 U
1,1,1-Trichloroethane	5**	7	5 U	5 U	5 U
Trichloroethene	5**	9.2	1.1 J	0.68 J	0.55 J
Tetrachloroethene	5**	6.4	5 U	1.4 J	1.3 J

	Site ID	MLW-2	MLW-2	MLW-2	DUP	MLW-2
	Field Sample ID	MLW-2 (18-20)	MLW-2 (28-30)	MLW-2 (38-40)	MLW-2 (38-40)	MLW-2 (48-50)
	Sample Date	5/10/2012	5/10/2012	5/10/2012	5/10/2012	5/10/2012
ANALYTE (µg/L)	NYSDEC Standard or Guidance Value	Primary	Primary	Primary	Primary	Primary
Vinyl Chloride	2	8.4	1.2 J	5 U	0.51 J	5 U
Methyl tert-butyl Ether	10	4.3 J	2000 J	1300 J	1100	3.9 J
trans-1,2-Dichloroethene	5**	1.4 J	5 U	5 U	5 U	5 U
1,1-Dichloroethane	5**	5 U	4.6 J	9.4	9.7	5 U
cis-1,2-Dichloroethene	5**	160	17	4.3 J	5.6	5 U
Trichloroethene	5**	50	7	2.6 J	2.9 J	5 U
Toluene	5**	0.79 J	5 U	5 U	5 U	5 U
Tetrachloroethene	5**	14	2.2 J	1.1 J	1.4 J	5 U
Chlorobenzene	5**	0.58 J	5 U	5 U	5 U	5 U

LEGEND:

- MULTI–LEVEL WELLS
- MONITORING WELL
- SOIL BORING
- MIP1
- SOIL VAPOR POINT

JOHNSON AVENUE

INGRAHAM STREET

MLW4 (3 COVERS)
SV4
SV2
MLW2
MLW3
SV3
SV7
MIP5
FDNY
MW3
MIP6
SB1
MIP10
SB2
SV6
MIP11
SB3
MW6
SB4
MIP4
SB1A
SB5/SB3A
MIP12
SV5
MW1
SB2A
MIP3
SB4A
SB5A
MIP1
MIP2
SV1*
MH
MIP8
E-VAULT
NW2
MW2
MIP9
MIP7
POPULAR HAND LAUNDRY SITE
MLW1

N

SCALE
0 40 80 FEET

Shaw Shaw Environmental, Inc.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 8
GROUNDWATER VOC ANALYTICAL DETECTIONS MAY 2012
INGRAHAM STREET SIDEWALK PLUME TRACKDOWN

EAST WILLIAMSBURG, NEW YORK

File: U:\Project\134685\15\NOV 2014 REPORT\134685-15B10.dwg
Plot Date/Time: Jan 28, 2015 - 4:10pm
Plotted By: steven.walsh
Xref: 12-1046 - PL
Image :

		Site ID	MLW-4	MLW-4	DUP-1	MLW-4	MLW-4	DUP
		Field Sample ID	MLW-4 (5-15)	MLW-4	MLW-4	MLW-4 (25-30)	MLW-4 (35-40)	MLW-4 (35-40)
		Sample Date	5/14/2014	2/17/2014	2/17/2014	5/14/2014	5/14/2014	5/14/2014
ANALYTE (µg/L)	NYSDEC Standard or Guidance Value		Primary	Primary	Primary	Primary	Primary	Primary
Vinyl Chloride	2		350 D	310 D	440 D	480 D	540 D	460 D
1,1-Dichloroethene	5**		1	0.82 J	1.6	1 U	1.6	0.32 J
Acetone	50		5 U	3.6 J	5 U	5 U	5 U	5 U
Carbon Disulfide	60		1 U	0.97 J	1 U	1 U	1 U	1 U
Methyl tert-butyl Ether	10		10.9	7.3 J	14.1 J	12.8	19.3	12.1
trans-1,2-Dichloroethene	5**		1.8 NJ	1.9	2 U	1 U	3.7 NJ	1 U
1,1-Dichloroethane	5**		4.3	2.3 J	4.4 J	3.3	8.9	3.2
cis-1,2-Dichloroethene	5**		1100 D	1200 D	1700 D	380 D	1800 D	360 D
Benzene	1		1 U	0.41 J	1 U	1 U	1 U	1 U
Trichloroethene	5**		0.33 J	0.28 J	0.38 J	1 U	0.42 J	1 U
Toluene	5**		1 U	0.45 J	0.26 J	1 U	1 U	1 U
Tetrachloroethene	5**		1.7	1 U	1 U	0.92 J	1.4	1

	Site ID	MW-6
	Field Sample ID	MW-6
	Sample Date	2/18/2014
ANALYTE (µg/L)	NYSDEC Standard or Guidance Value	Primary
Vinyl Chloride	2	550 D
Chloroethane	5**	4.4
1,1-Dichloroethene	5**	15.3
trans-1,2-Dichloroethene	5**	75.7
cis-1,2-Dichloroethene	5**	7800 D
Trichloroethene	5**	520 D
Toluene	5**	0.9 J
Tetrachloroethene	5**	180

	Site ID	MLW-1	MLW-1	MLW-1
	Field Sample ID	MLW-1-CH2	MLW-1-CH3	MLW-1-CH5
	Sample Date	5/14/2014	5/14/2014	5/14/2014
ANALYTE (µg/L)	NYSDEC Standard or Guidance Value	Primary	Primary	Primary
Vinyl Chloride	2	1 U	0.27 J	1 U
trans-1,2-Dichloroethene	5**	1.2	1 U	1 U
1,1-Dichloroethane	5**	10.7	1 U	1 U
cis-1,2-Dichloroethene	5**	41.9	3	1.9
Chloroform	7	1 U	0.75 J	1 U
1,1,1-Trichloroethane	5**	2.4	1 U	1 U
Trichloroethene	5**	8.1	0.85 J	1.2
Tetrachloroethene	5**	9.4	1.8	2.1

	Site ID	MLW-2	MLW-2	MLW-2	MLW-2
	Field Sample ID	MLW-2 (20)	MLW-2 (30)	MLW-2 (4)	MLW-2 (5)
	Sample Date	2/19/2014	2/19/2014	2/19/2014	2/19/2014
ANALYTE (µg/L)	NYSDEC Standard or Guidance Value	Primary	Primary	Primary	Primary
Vinyl Chloride	2	1.8	0.98 J	1 U	1 U
Acetone	50	5 U	5 U	7.2	5 U
Methyl tert-butyl Ether	10	3	6.1	310 D	3.2
1,1-Dichloroethane	5**	0.88 J	4.9	8.6	1 U
cis-1,2-Dichloroethene	5**	6.6	0.71 J	0.38 J	0.31 J
Trichloroethene	5**	0.25 J	0.24 J	1 U	1 U
Chlorobenzene	5**	0.67 J	1 U	1 U	1 U

	Site ID	MLW-3	MLW-3	MLW-3
	Field Sample ID	MLW-3 (5-15)	MLW-3 (20-30)	MLW-3 (40-45)
	Sample Date	2/17/2014	2/18/2014	2/17/2014
ANALYTE (µg/L)	NYSDEC Standard or Guidance Value	Primary	Primary	Primary
Acetone	50	5 U	6.9	5 U
Methyl tert-butyl Ether	10	0.73 J	4.5	150
1,1-Dichloroethane	5**	1 U	1 U	6.4
cis-1,2-Dichloroethene	5**	0.41 NJ	1 U	1 U

LEGEND:

- MULTI-LEVEL WELLS
- MONITORING WELL
- SOIL BORING
- MIP1
- SOIL VAPOR POINT

JOHNSON AVENUE

INGRAHAM STREET

FERBOCKE

POPULAR HAND LAUNDRY SITE

MLW4 (3 COVERS)
SV4
SV2
MLW2
MLW3
SV3
SV7
MIP5
FDNY
MIP8
MW3
MIP6
SB1
MIP10
SB2
SV6
MIP11
SB3
MW6
SB4
MIP4
SB1A
SB5/SB3A
MIP12
SV5
MW1
SB2A
MIP3
SB4A
SB5A
MIP1
MIP2
SV1*
E-VAULT
NW2
MW2
MIP9
MIP7
MLW1

SCALE
0 40 80 FEET

Shaw Shaw Environmental, Inc.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 9
GROUNDWATER VOC RESULTS
FEBRUARY AND MAY, 2014
INGRAHAM STREET SIDEWALK PLUME TRACKDOWN
EAST WILLIAMSBURG, NEW YORK

DRAWING NUMBER	134685-15B10
APPROVED BY	HAF
CHECKED BY	HAF
DRAWN BY	SJW
DESIGNED BY	RA
DATE	10/23/14
OFFICE	LATHAM, NY

File: U:\Project\134685\15\NOV 2014 REPORT\134685-15B10.dwg
Plot Date/Time: Jan 28, 2015 - 4:13pm
Plotted By: steven.walsh
Xref: 12-1046 - PL
Image:

DRAWING NUMBER	APPROVED BY	CHECKED BY	DRAWN BY	DESIGNED BY	DATE	OFFICE
134685-15B10	HAF	HAF	SJW	RA	10/23/14	LATHAM, NY

JOHNSON AVENUE

INGRAHAM STREET

FDNY

POPULAR HAND LAUNDRY SITE

VAULT

MLW4 (3 COVERS)

SV4

SV2

MLW2 5.36

MLW3

SV3

SV7

MIP5

MW3

MIP6

SB1

MIP10

SB2

SV6

MIP11

SB3

MW6

SB4

MIP4

SB1A

SB5/SB3A

MIP12

SV5

MW1

SB2A

MIP3

SB4A

SB5A

MIP1

MIP2

SV1*

MIP8

NW2

MW2

MIP9

MIP7

MLW1 NM

7.59

9.43

7.79

8.19

6.89

9.0

8.5

8.0

7.5

7.0

6.5

6.0

5.5

LEGEND:

- MULTI-LEVEL WELLS
- MONITORING WELL
- SOIL BORING
- MIP1
- SOIL VAPOR POINT
- NM NOT MEASURED
- GROUNDWATER CONTOUR
- 8.19 GROUNDWATER ELEVATION

N

SCALE

0 40 80 FEET

Shaw Shaw Environmental, Inc.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

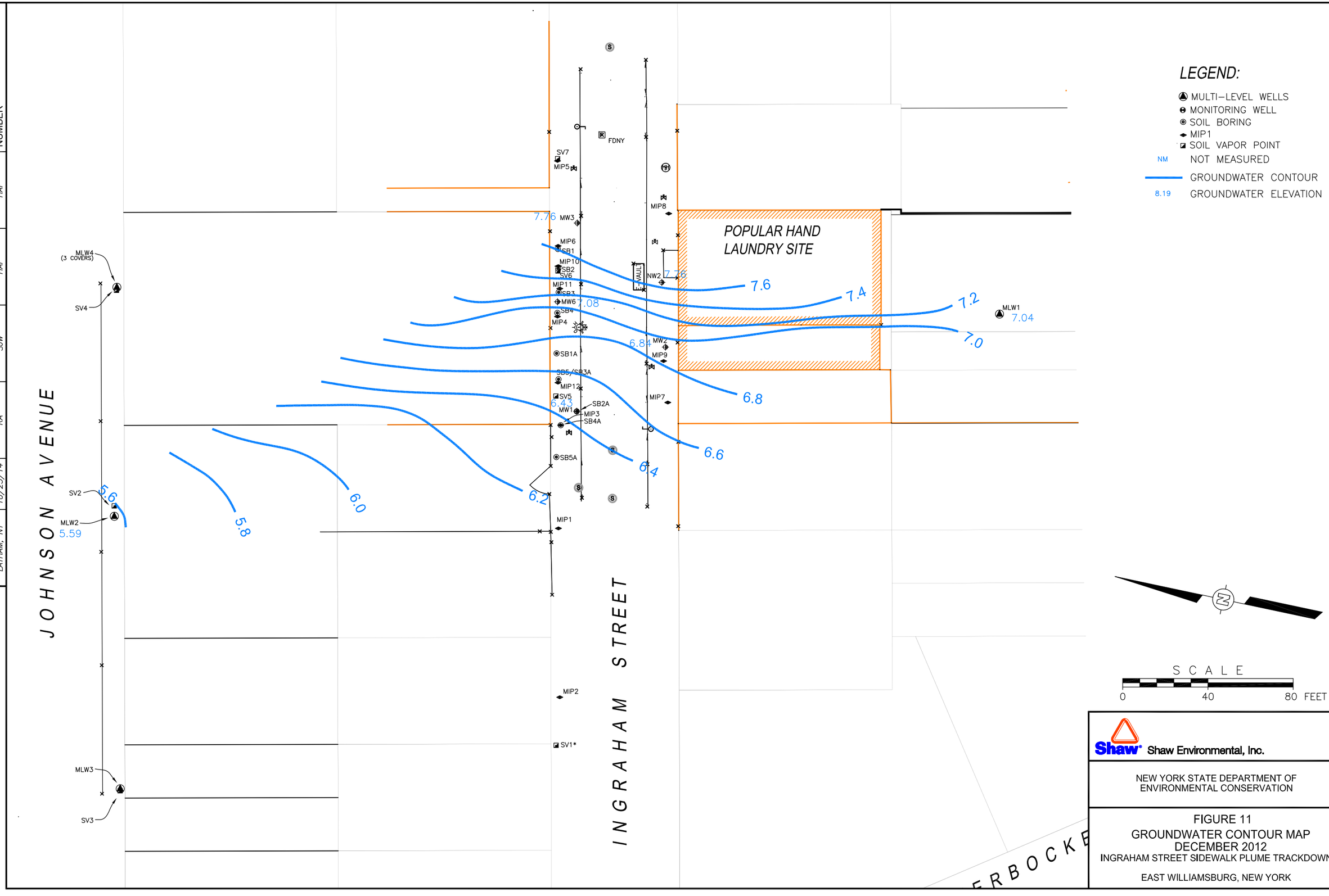
FIGURE 10
GROUNDWATER CONTOUR MAP
SEPTEMBER 2012
INGRAHAM STREET SIDEWALK PLUME TRACKDOWN

EAST WILLIAMSBURG, NEW YORK

File: U:\Project\134685\15\NOV 2014 REPORT\134685-15B10.dwg
Plot Date/Time: Jan 28, 2015 - 4:20pm
Plotted By: steven.walsh
Xref: 12-1046 - PL
Image :

DRAWING NUMBER	APPROVED BY	CHECKED BY	DRAWN BY	DESIGNED BY	DATE
134685-15B10	HAF	HAF	SJW	RA	10/23/14

OFFICE: LATHAM, NY



Shaw Shaw Environmental, Inc.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

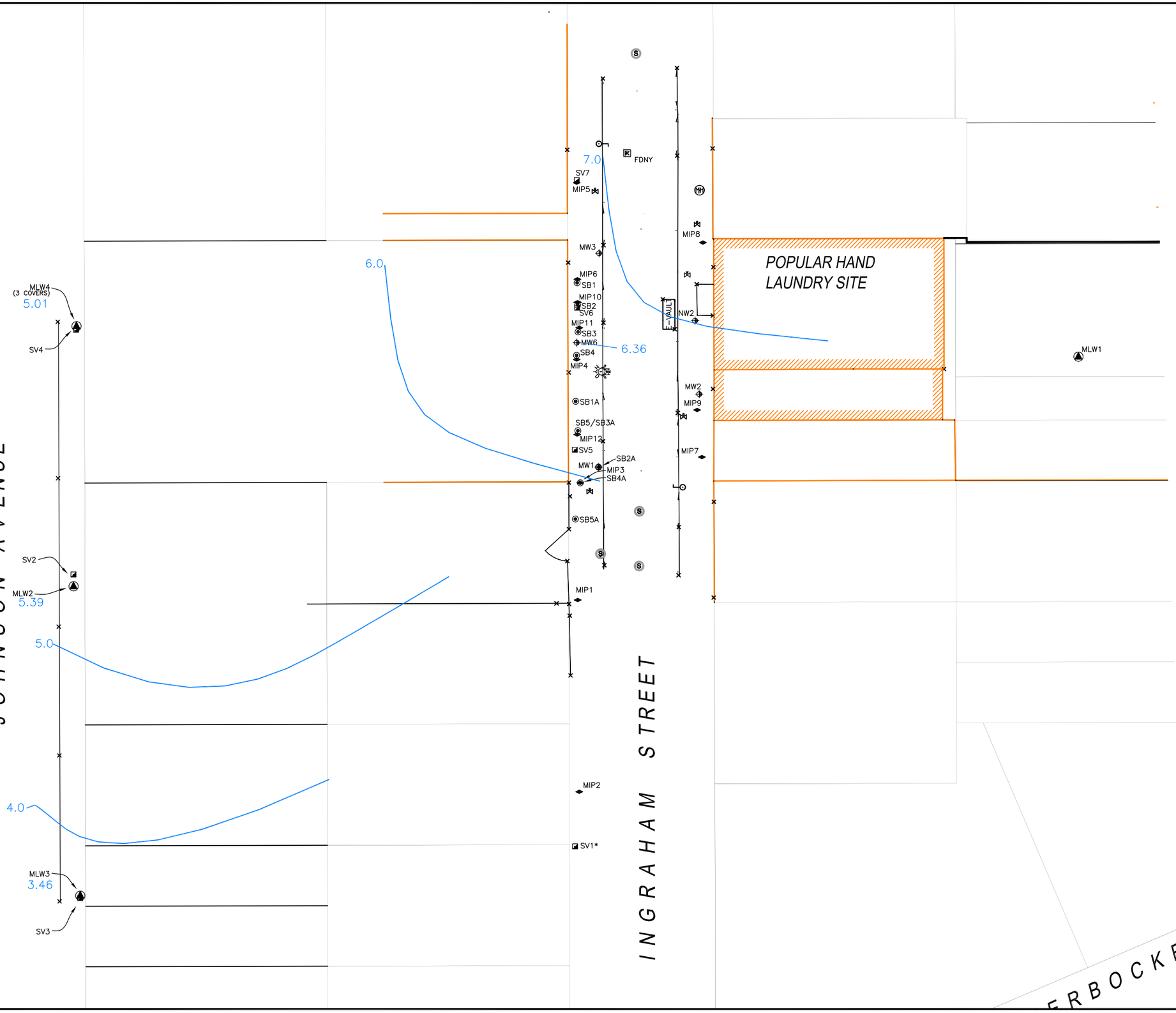
FIGURE 11
GROUNDWATER CONTOUR MAP
DECEMBER 2012
INGRAHAM STREET SIDEWALK PLUME TRACKDOWN

EAST WILLIAMSBURG, NEW YORK

File: U:\Project\134685\15\NOV 2014 REPORT\134685-15B10.dwg
Plot Date/Time: Jan 28, 2015 - 4:59pm
Plotted By: steven.walsh
Xref: 12-1046 - PL
Image :

DRAWING NUMBER	APPROVED BY	CHECKED BY	DRAWN BY	DESIGNED BY	DATE
134685-15B10	HAF	HAF	SJW	RA	10/23/14

OFFICE: LATHAM, NY



LEGEND:

- MULTI–LEVEL WELLS
- MONITORING WELL
- SOIL BORING
- MIP1
- SOIL VAPOR POINT
- NM NOT MEASURED
- GROUNDWATER CONTOUR
- 8.19 GROUNDWATER ELEVATION

N

SCALE
0 40 80 FEET

Shaw Environmental, Inc.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

FIGURE 12
GROUNDWATER CONTOUR MAP
FEBRUARY 2014
INGRAHAM STREET SIDEWALK PLUME TRACKDOWN

EAST WILLIAMSBURG, NEW YORK

File: U:\Project\134685\15\NOV 2014 REPORT\134685-15B10.dwg
Plot Date/Time: Jan 28, 2015 - 5:03pm
Plotted By: steven.walsh
Xref: 12-1046 - PL
Image :

DRAWING NUMBER	134685-15B10
APPROVED BY	HAF
CHECKED BY	HAF
DRAWN BY	SJW
DESIGNED BY	RA
DATE	10/23/14
OFFICE	LATHAM, NY

File: U:\Project\134685\15\NOV 2014 REPORT\134685-15B10_recover.dwg
Plot Date/Time: Jan 28, 2015 - 5:11pm
Plotted By: steven.walsh
Xref: 12-1046 - PL
Image:

JOHNSON AVENUE

INGRAHAM STREET

POPULAR HAND LAUNDRY SITE

Site ID	SV-7
Sample Date	2/20/2014
Analytes (µg/m³)	PRIMARY
Methylene Chloride	17.4 U
cis-1,2-Dichloroethene	**250**
1,1,1-Trichloroethane	**4.36 J**
Trichloroethene	**524 D**
Tetrachloroethene	**2712 D**

Site ID	AMBIENT
Sample Date	2/20/2014
Analytes (µg/m³)	PRIMARY
Methylene Chloride	**6.95**
cis-1,2-Dichloroethene	1.98 U
1,1,1-Trichloroethane	2.73 U
Trichloroethene	2.69 U
Tetrachloroethene	**0.68 J**

Site ID	SV-4
Sample Date	2/20/2014
Analytes (µg/m³)	PRIMARY
Methylene Chloride	**22.9**
cis-1,2-Dichloroethene	**43.2**
1,1,1-Trichloroethane	2.73 U
Trichloroethene	**0.59 J**
Tetrachloroethene	**1.02 J**

Site ID	SV-6
Sample Date	2/20/2014
Analytes (µg/m³)	PRIMARY
Methylene Chloride	17.4 U
cis-1,2-Dichloroethene	**14.3 J**
1,1,1-Trichloroethane	27.3 U
Trichloroethene	**269**
Tetrachloroethene	**2509 D**

Site ID	SV-5	SV-5
Sample Date	2/20/2014	2/20/2014
Analytes (µg/m³)	PRIMARY	DUPLICATE
Methylene Chloride	**5.91**	17.4 U
cis-1,2-Dichloroethene	**1.7 J**	19.8 U
1,1,1-Trichloroethane	**0.71 J**	27.3 U
Trichloroethene	**111 D**	**128**
Tetrachloroethene	**2102 D**	**2169 D**

Site ID	SV-2
Sample Date	2/20/2014
Analytes (µg/m³)	PRIMARY
Methylene Chloride	**10.1**
cis-1,2-Dichloroethene	1.98 U
1,1,1-Trichloroethane	2.73 U
Trichloroethene	**0.43 J**
Tetrachloroethene	**4.95**

Site ID	SV-1
Sample Date	2/20/2014
Analytes (µg/m³)	PRIMARY
Methylene Chloride	**27.4**
cis-1,2-Dichloroethene	**173**
1,1,1-Trichloroethane	**6 J**
Trichloroethene	**806**
Tetrachloroethene	**3865 D**

LEGEND:

- MULTI-LEVEL WELLS
- MONITORING WELL
- SOIL BORING
- MIP1
- SOIL VAPOR POINT

SCALE
0 40 80 FEET

Shaw Environmental, Inc.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

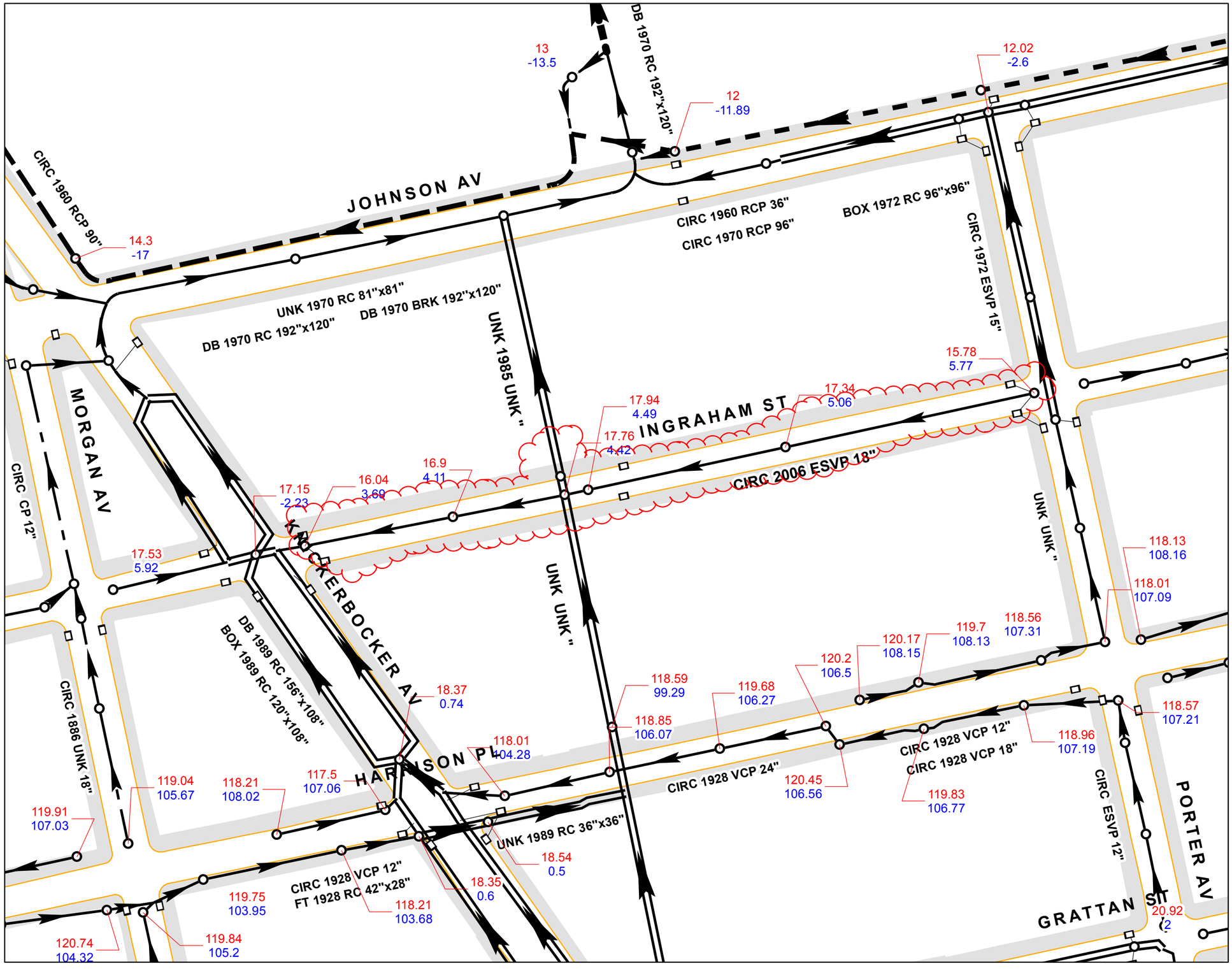
FIGURE 13
SOIL VAPOR VOC RESULTS
FEBRUARY 2014

INGRAHAM STREET SIDEWALK PLUME TRACKDOWN

EAST WILLIAMSBURG, NEW YORK

Appendix J

New York City Sewer Maps



LEGEND:

NYC DEP

- Sanitary Sewer
- Storm Sewer
- Combined Sewer
- Combined Sewer Overflow
- Relief Storm Sewer
- Relief Combined Sewer
- Highway Drain
- Intercepting Sewer
- Intercepting Collector
- Branch Intercepting
- Intercepting Force Main
- Force Main
- Emergency Construction Sewer
- Catch Basin Connector
- Unknown Sewer
- Manhole
- Catch Basin
- Chamber
- Weir Chamber
- Regulator
- Tide Gate
- Outfall
- Headwall
- Culvert
- Bulkhead
- Pumping Station

NYS DOT

- Sewer
- Trough
- Catch Basin\Scupper Connector
- Temporary Connection and Plumber's Drain
- Manhole
- Catch Basin
- Chamber
- Outfall
- Headwall
- Culvert
- Bulkhead
- Pumping Station

Sewer Shape	Abbreviation
Double Circular	DCIR
Egg	EGG
Elliptical	ELP
Vertical Elliptical	VELP
Horizontal Elliptical	HELP
Box	BOX
Double Barrel	DB
Triple Barrel	TB
Quadruple Barrel	QB
Circular Barrel	CIRB
Oval	OVL
Flat Top	FT
Double Flat Top	DFT
Tunnel	TUN
Double Tunnel	DTUN
Circular Pipe	CIRC
Arch	ARCH
Irregular	IRRG
Unknown	UNK

Sewer Ownership	Abbreviation
Private	Pvt
Temporary Connection	TC
Plumber's Drain	PID
Triborough Bridge & Tunnel Authority	TBTA
Work Progress Administration	WPA

PIPE ANNOTATION
Pipe shown as shape, year of installation, material and pipe diameter.
Example; CIRC 1945 VCP 24"
Pipes with a second or height dimension will be displayed with the height dimension, in inches, directly after the diameter
Example BOX 1955 CIP 48" x 32"

RESPECTIVE BOROUGH HIGHWAY AND SEWER DATUMS
(ABOVE MEAN SEA LEVEL AT SANDY HOOK, NEW JERSEY)

BOROUGH	SEWER DATUM	HIGHWAY DATUM
BRONX	2.608 FEET	2.608 FEET
BROOKLYN	1.720 FEET	2.560 FEET
MANHATTAN	2.750 FEET	2.750 FEET
QUEENS	2.725 FEET	2.725 FEET
STATEN ISLAND	3.192 FEET	3.192 FEET

MANHOLE RIM AND INVERT ELEVATIONS,
WHERE AVAILABLE, ARE DISPLAYED BY COLOR

25.67 = Manhole Rim elevation

25.67 = Manhole Invert elevation

Sewer Mapping

NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
59-17 Junction Boulevard, 3rd Floor
Corona, NY 11373-5108

Map Print Date: 3/9/2012

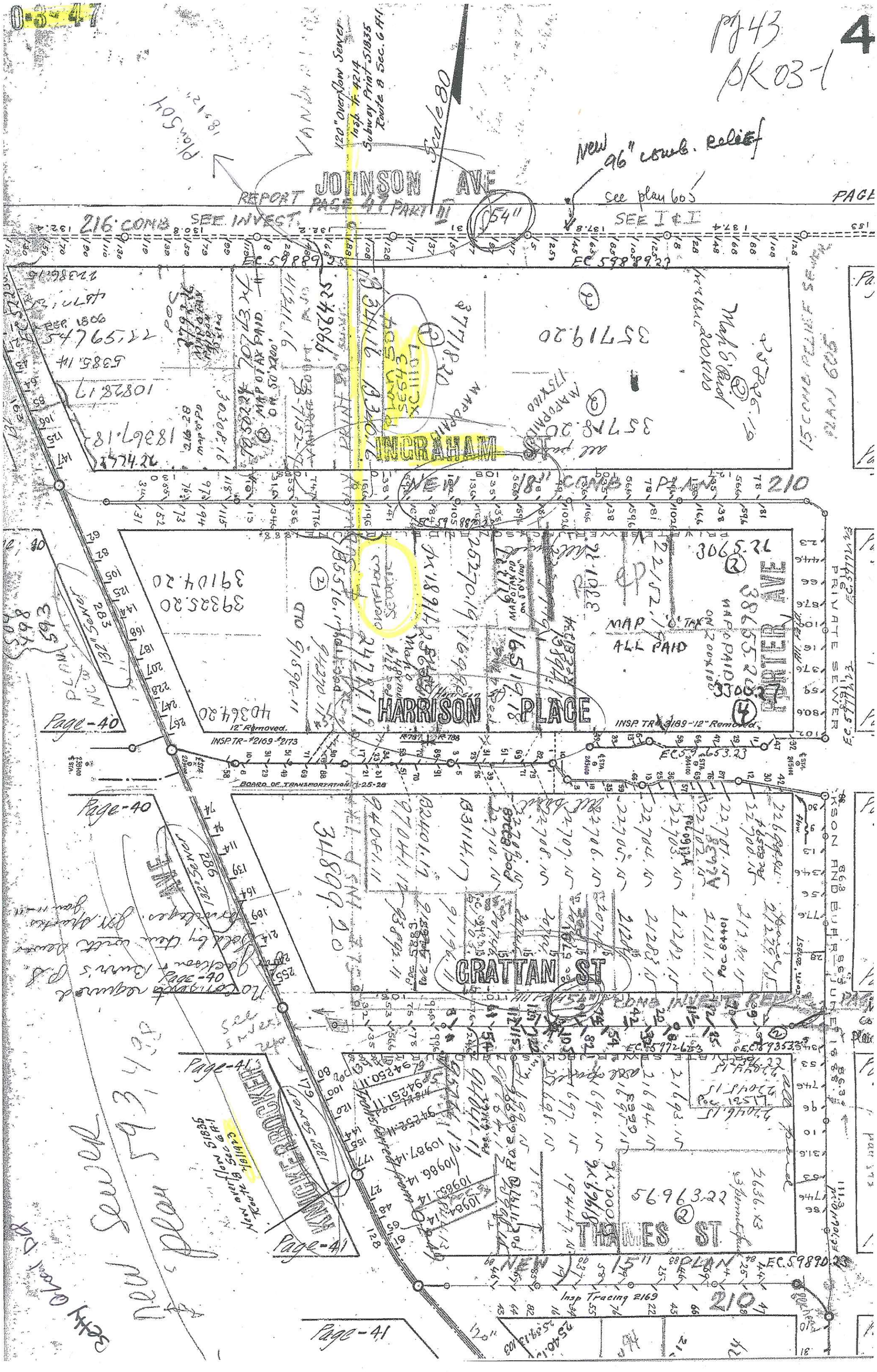
50 25 0 50 100 150 200 250 300
Feet

N W E S

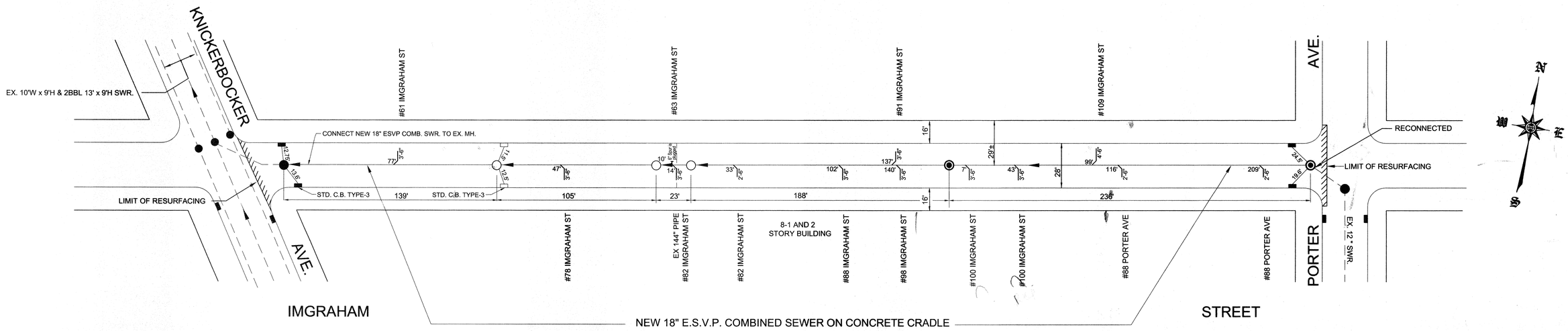
Sewer Material	Abbreviation														
Brick	BRK	*Concrete Pipe*	CRTP	*Reinforced Concrete Culvert Pipe*	RCCP	*Wood*	WD	*Steel*	STL	*Liner Plate*	LRPL	*Block*	BLK
Reinforced Concrete Brick	RC/BR	*Reinforced Concrete*	RC	*Corrugated Metal Pipe*	CMP	*Wood Pipe*	WDP	*Steel Pipe*	STLP	*Reinforced Concrete Liner Plate*	RC LRPL	*Tile*	TILE
Cement Pipe	CMTP	*Reinforced Concrete Pipe*	RCP	*High Density Polyethylene Pipe*	HDPEP	*Clay Pipe*	CP	*Cast Iron*	CI	*Steel Liner Plate*	STL LRPL	*Stone*	STON
Asbestos Cement Pipe	ASBCMTP	*Precast Reinforced Concrete*	PRC	*Corrugated High Density Polyethylene Pipe*	CHDPEP	*Vitrified Clay Pipe*	VCP	*Cast Iron Pipe*	CIP	*Cast Iron Liner Plate*	CI LRPL	*Fiberglass*	FBGL
Concrete	CRT	*Precast Reinforced Concrete Pipe*	PRCP	*Polyvinyl Chloride Pipe*	PVCP	*Extra Strength Vitrified Clay Pipe*	ESVP	*Ductile Iron Pipe*	DIP	*Ductile Liner Plate*	DI LRPL	*Unknown*	UNK

This map is intended to be a schematic representation of the sewer system ONLY, and is not warranted to be accurate for construction and/or surveying purposes.

All warranties, UCC and otherwise, express or implied, including, warranties as to accuracy of data shown hereon and merchantability and fitness for a particular purpose are expressly disclaimed. All incidental, consequential or special damages arising out of or in connection with the use or performance of the data shown on the map are expressly disclaimed.
Map is not for public dissemination and is agreed by recipient to be destroyed upon completion of project

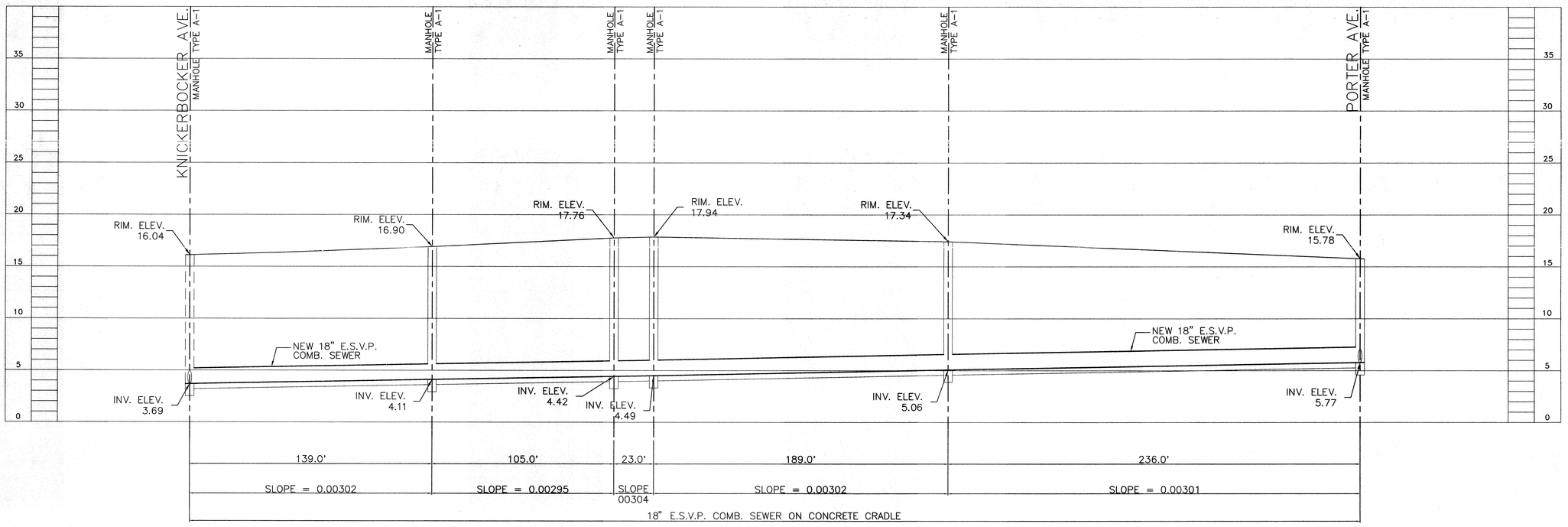

JOHNSON AVE
INGRAHAM ST
HARRISON PLACE
GRATTAN ST
THAMES ST
HAMILTON BOULEVARD
Page-40
Page-41
Scale 80
120" Overflow Sewer
Insp. # 4214
Subway Print 51835
Route 8 Sec. 6 A-1
New 96" comb. relief
see plan 603
SEE INVEST.
REPORT PAGE 41 PART II
216' COMB
154"
EC 59889.23
INSP. TR. 2169 - 12" Removed.
INSP. TR - #2169 #2173
BOARD OF TRANSPORTATION 1-25-28
12" Removed.
MAP & TAX ALL PAID
15" COMB. PLAN
210
Insp Tracing 2169
PRIVATE SEWER
PLAN 603
Plan 504
Now Sewer
Sewer Plan

AS-BUILT



LOCATION # 16

SCALE: 1" = 30'
AVG. DEPTH OF SEWER = 11'



IMGRAHAM STREET

RESIDENT ENGINEER — DATE 5/19/06

210

VER. SCALE: 1" = 5'

NO.	DATE	DESCRIPTIONS REVISIONS	BY	APPR'D

TOPOGRAPHIC SURVEY PREPARED BY:
NAME OF SURVEYING FIRM
LICENSED LAND SURVEYOR

FINAL DESIGN PREPARED BY:
ENGINEER-IN-CHARGE — DATE
DESIGN DIRECTOR — DATE

CITY OF NEW YORK
DEPARTMENT OF DESIGN AND CONSTRUCTION
DIVISION OF INFRASTRUCTURE
BUREAU OF CONSTRUCTION

SEWER PLANS

E.E.
DRAWN BY — CADD FILE

RECONSTRUCTION OF CEMENT PIPE COMBINED SEWERS AND APPURTENANCES
BOROUGH OF BROOKLYN

CAPITAL PROJECT NO. SE-6660106 — SHEET 10 OF 13

CAPITAL PROJECT SE-666-01-06. BOROUGH OF BROOKLYN

ATTACHMENT E6 – UNITED STATES ENVIRONMENTAL PROTECTION AGENCY AND NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION ONLINE DATABASE RECORDS

LANGAN

ECHO Enforcement and Compliance History Online

Detailed Facility Report

Facility Summary

ENVELOPE MANUFACTURING CORP
450 JOHNSON AVE, BROOKLYN, NY 11237

FRS (Facility Registry Service) ID: 110004491853
EPA Region: 02
Latitude: 40.70806
Longitude: -73.93037
Locational Data Source: FRS
Industry:
Indian Country: N

Enforcement and Compliance Summary

Statute	CAA
Insp (5 Years)	--
Date of Last Inspection	--
Current Compliance Status	**No Violation Identified**
Qtrs with NC (of 12)	0
Qtrs with Significant Violation	0
Informal Enforcement Actions (5 years)	--
Formal Enforcement Actions (5 years)	--
Penalties from Formal Enforcement Actions (5 years)	--
EPA Cases (5 years)	--
Penalties from EPA Cases (5 years)	--
Statute	RCRA
Insp (5 Years)	--
Date of Last Inspection	03/21/2012
Current Compliance Status	**No Violation Identified**
Qtrs with NC (of 12)	0
Qtrs with Significant Violation	0
Informal Enforcement Actions (5 years)	--
Formal Enforcement Actions (5 years)	--
Penalties from Formal Enforcement Actions (5 years)	--
EPA Cases (5 years)	--
Penalties from EPA Cases (5 years)	--

Regulatory Information

Clean Air Act (CAA): Operating Minor (NY0000002610401030)
Clean Water Act (CWA): No Information
Resource Conservation and Recovery Act (RCRA): Active (H) VSQG (NYD987006996)
Safe Drinking Water Act (SDWA): No Information

Other Regulatory Reports

Air Emissions Inventory (EIS): No Information
Greenhouse Gas Emissions (eGGRT): No Information
Toxic Releases (TRI): No Information
Compliance and Emissions Data Reporting Interface (CEDRI): No Information

Known Data Problems

Facility/System Characteristics

Facility/System Characteristics

System	Statute	Identifier	Universe	Status	Areas	Permit Expiration Date	Indian Country	Latitude	Longitude
FRS		110004491853					N	40.70806	-73.93037
ICIS-Air	CAA	NY0000002610401030	Minor Emissions	Operating	CAASIP		N		
RCRAInfo	RCRA	NYD987006996	VSQG	Active (H)			N	40.708046	-73.930372

Facility Address

System	Statute	Identifier	Facility Name	Facility Address
FRS		110004491853	ENVELOPE MANUFACTURING CORP	450 JOHNSON AVE, BROOKLYN, NY 11237
ICIS-Air	CAA	NY0000002610401030	ENVELOPE MANUFACTURING CORP	450 JOHNSON AVE, BROOKLYN, NY 11237
RCRAInfo	RCRA	NYD987006996	ENVELOPE MANUFACTURERS CORP	450 JOHNSON AVE, BROOKLYN, NY 11237

Facility SIC (Standard Industrial Classification) Codes

System	Identifier	SIC Code	SIC Description
ICIS-Air	NY0000002610401030	2751	Legacy Docket Conv

Facility NAICS (North American Industry Classification System) Codes

System	Identifier	NAICS Code	NAICS Description
ICIS-Air	NY0000002610401030	999999	

Facility Tribe Information

Reservation Name	Tribe Name	EPA Tribal ID	Distance to Tribe (miles)
No data records returned			

Enforcement and Compliance

Compliance Monitoring History (5 years)

Statute	Source ID	System	Compliance Monitoring Type	Lead Agency	Date	Finding (if applicable)
No data records returned						

Entries in italics are not counted in EPA compliance monitoring strategies or annual results.

Compliance Summary Data

Statute	Source ID	Current SNC (Significant Noncompliance)/HPV (High Priority Violation)	Current As Of	Qtrs with NC (Noncompliance) (of 12)	Data Last Refreshed
CAA	NY0000002610401030	No	06/22/2019	0	06/21/2019
RCRA	NYD987006996	No	06/22/2019	0	06/21/2019

Three-Year Compliance History by Quarter

Statute	Program/Pollutant/Violation Type	QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11	QTR 12+
CAA (Source ID: NY0000002610401030)		07/01-09/30/16	10/01-12/31/16	01/01-03/31/17	04/01-06/30/17	07/01-09/30/17	10/01-12/31/17	01/01-03/31/18	04/01-06/30/18	07/01-09/30/18	10/01-12/31/18	01/01-03/31/19	04/01-06/30/19
	Facility-Level Status	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**
	HPV History												
	Violation Type / **Agency** / **Programs** / **Pollutants**												

Statute	Program/Pollutant/Violation Type	QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11	QTR 12+
RCRA (Source ID: NYD987006996)		07/01-09/30/16	10/01-12/31/16	01/01-03/31/17	04/01-06/30/17	07/01-09/30/17	10/01-12/31/17	01/01-03/31/18	04/01-06/30/18	07/01-09/30/18	10/01-12/31/18	01/01-03/31/19	04/01-06/30/19
	Facility-Level Status	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**

Informal Enforcement Actions (5 Years)

Statute	System	Source ID	Type of Action	Lead Agency	Date
No data records returned					

Formal Enforcement Actions (5 Years)

Statute	System	Law/Section	Source ID	Action Type	Case No.	Lead Agency	Case Name	Issued/Filed Date	Settlements/Actions	Settlement/Action Date	Federal Penalty	State/Local Penalty	SEP Cost	Comp Action Cost
No data records returned														

Environmental Conditions

Water Quality

Permit ID	Combined Sewer System?	Number of CSO (Combined Sewer Overflow) Outfalls	12-Digit WBD (Watershed Boundary Dataset) HUC (RAD (Reach Address Database))	WBD (Watershed Boundary Dataset) Subwatershed Name (RAD (Reach Address Database))	State Waterbody Name (ICIS (Integrated Compliance Information System))	Impaired Waters	Impaired Class	Causes of Impairment(s) by Group(s)	Watershed with ESA (Endangered Species Act)-listed Aquatic Species?
No data records returned									

Waterbody Designated Uses

Reach Code	Waterbody Name	Exceptional Use	Recreational Use	Aquatic Life Use	Shellfish Use	Beach Closure Within Last Year	Beach Closure Within Last Two Years
No data records returned							

Air Quality

Nonattainment Area?	Pollutant(s)	Applicable Nonattainment Standard(s)
Yes	Ozone	8-Hour Ozone (1997), 8-Hour Ozone (2008), 8-Hour Ozone (2015)
No	Lead	
Yes	Particulate Matter	PM-2.5 (1997), PM-2.5 (2006)
Yes	Carbon Monoxide	Carbon Monoxide (1971)
No	Nitrogen Dioxide	
No	Sulfur Dioxide	

Pollutants

Toxics Release Inventory History of Reported Chemicals Released in Pounds per Year at Site

TRI Facility ID	Year	Total Air Emissions	Surface Water Discharges	Off-Site Transfers to POTWs (Publicly Owned Treatment Works)	Underground Injections	Releases to Land	Total On-site Releases	Total Off-site Releases
No data records returned								

Toxics Release Inventory Total Releases and Transfers in Pounds by Chemical and Year

Chemical Name
No data records returned

Demographic Profile

EJSCREEN EJ Indexes

Eleven primary environmental justice (EJ) indexes of EJSCREEN, EPA's screening tool for EJ concerns. EPA uses these indexes to identify geographic areas that may warrant further consideration or analysis for potential EJ concerns. Note that use of these indexes does not designate an area as an "EJ community" or "EJ facility." EJSCREEN provides screening level indicators, not a determination of the existence or absence of EJ concerns. For more information, see the EJSCREEN home page.

Census Block Group EJ Indexes (percentile)	
Particulate Matter (PM 2.5)	87.2
Ozone NATA Diesel PM	86.4
NATA Air Toxics Cancer Risk	90.8
NATA Respiratory Hazard Index (HI)	92.5
Traffic Proximity	79.3
Lead Paint Indicator	97.4
Superfund Proximity	99.5
Risk Management Plan (RMP) Proximity	88.3
Hazardous Waste Proximity	99.8
Wastewater Discharge Proximity	76.1

Number of EJ Indexes Above 80th Percentile
9

View EJSCREEN Report

Demographic Profile of Surrounding Area (3 Miles)

This section provides demographic information regarding the community surrounding the facility. ECHO compliance data alone are not sufficient to determine whether violations at a particular facility had negative impacts on public health or the environment. Statistics are based upon the 2010 US Census and American Community Survey data, and are accurate to the extent that the facility latitude and longitude listed below are correct. The latitude and longitude are obtained from the EPA Locational Reference Table (LRT) when available.

General Statistics	
Total Persons	991,662
Population Density	37,467/sq.mi.
Percent Minority	70%
Households in Area	377,007
Housing Units in Area	412,844
Households on Public Assistance	18,802
Persons Below Poverty Level	449,258

Geography	

Age Breakdown - Persons (%)	
Children 5 years and younger	67,606 (7%)
Minors 17 years and younger	224,159 (23%)
Adults 18 years and older	767,504 (77%)
Seniors 65 years and older	98,250 (10%)

Race Breakdown - Persons (%)	
White	418,365 (42%)
African-American	314,864 (32%)
Hispanic-Origin	307,383 (31%)

Geography	
Radius of Selected Area	3 mi.
Center Latitude	40.70771
Center Longitude	-73.93027
Land Area	94%
Water Area	6%

Income Breakdown - Households (%)	
Less than $15,000	79,501 (21.63%)
$15,000 - $25,000	43,388 (11.81%)
$25,000 - $50,000	88,330 (24.04%)
$50,000 - $75,000	61,966 (16.86%)
Greater than $75,000	94,299 (25.66%)

Race Breakdown - Persons (%)	
Asian/Pacific Islander	76,535 (8%)
American Indian	7,039 (1%)
Other/Multiracial	174,860 (18%)

Education Level(Persons 25 & older) - Persons (%)	
Less than 9th Grade	79,998 (12.67%)
9th through 12th Grade	79,002 (12.51%)
High School Diploma	172,513 (27.32%)
Some College/2-year	128,106 (20.28%)
B.S./B.A. (Bachelor of Science/Bachelor of Arts) or More	171,914 (27.22%)

Related Topics: Envirofacts

FRS

FRS Facility Detail Report

ENVELOPE

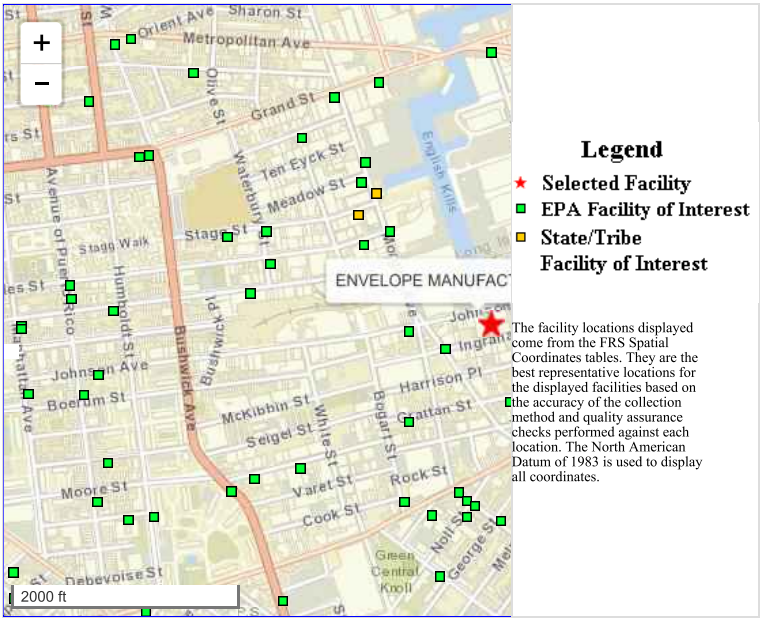
Facilty Registry Service Links:

- Facility Registry Service (FRS) Overview
- FRS Facility Query
- FRS Organization Query
- EZ Query
- FRS Physical Data Model
- FRS Geospatial Model

Report an Error

MANUFACTURING CORP

EPA Registry Id: 110004491853
450 JOHNSON AVE
BROOKLYN, NY 11237



Environmental Interests

Information System	System Facility Name	Information System Id/Report Link	Environmental Interest Type	Data Source	Last Updated Date
RESOURCE CONSERVATION AND RECOVERY ACT INFORMATION SYSTEM	ENVELOPE MANUFACTURERS CORP	NYD987006996	CESQG (Y)	RCRAINFO	04/14/2015
AIR FACILITY SYSTEM	ENVELOPE MANUFACTURING CORP	36047R7815	AIR MINOR (OPERATING)	AIRS/AFS	05/07/2014
NEW YORK - FACILITY INFORMATION SYSTEM	ENVELOPE MANUFACTURING CORP	2-6104-01030	STATE MASTER	FIS	
ICIS-AIR (AIR)	ENVELOPE MANUFACTURING CORP	NY0000002610401030	AIR MINOR	ICIS	10/19/2014

Additional EPA Reports: MyEnvironment Enforcement and Compliance Site Demographics Facility Coordinates Viewer Environmental Justice Map Viewer Watershed Report

Standard Industrial Classification Codes (SIC)

Data Source	SIC Code	Description	Primary
AIRS/AFS	2751		
FIS	2751		

National Industry Classification System Cod

No NAICS Codes returned.

Facility Codes and Flags

EPA Region:	02
Duns Number:	
Congressional District Number:	07
Legislative District Number:	NY
HUC Code/Watershed:	02030201 / NORTHERN LONG ISLAND
US Mexico Border Indicator:	
Federal Facility:	NO
Tribal Land:	NO

Facility Mailing Addresses

Affiliation Type	Delivery Point	City Name	St
OWNER	450 JOHNSON AVE	BROOKLYN	N
FACILITY MAILING ADDRESS	450 JOHNSON AVE	BROOKLYN	N
OPERATOR	450 JOHNSON AVE	BROOKLYN	N
REGULATORY CONTACT	450 JOHNSON AVE	BROOKLYN	N

Alternative Names

Alternative Name	Source of Data
ENVELOPE MANUFACTURERS CORP	NOTIFICATION (RCRA)

Contacts

Affiliation Type	Full Name	Office Phone	Inf
PERMIT CONTACT	JOHN JANVIER	7188215009	FIS
FEES/BILLING CONTACT	JOHN JANVIER	7188215009	FIS
REGULATORY CONTACT	NORMAN BAEALA	7188215009	RC
FEES/BILLING CONTACT	JOHN JANVIER	1499007	FIS
PERMIT CONTACT	JOHN JANVIER	1499007	FIS

Organizations

Affiliation Type	Name	DUNS Number	Information System	Mailing Address
OWNER	ENVELOPE MANUFACTURERS CORP		RCRAINFO	View
OPERATOR	ENVELOPE MANUFACTURERS CORP		RCRAINFO	View

Query executed on: JUN-24-2019

Last updated on September 24, 2015

Search Results

ICIS-Air Links

ICIS-Air

Plant Information

ENVELOPE MANUFACTURING CORP
450 JOHNSON AVE
BROOKLYN, NY 11237
EPA Plant ID:

Operating Status:	O	**HPV Flag:**	
Operating Status Description:	OPERATING	**State Registration Number:**	
State County Compliance Source:	36047R7815	**Government Facility Code Description:**	PRIVATELY OWNED/OPERATED
Region Code:	02	**Class Code:**	B
Primary SIC Code:	2751	**Class Code Description:**	POTENTIAL UNCONTROLLED EM

Primary SIC Description:	COMMERCIAL PRINTING LETTE	Compliance Status:	C
NAICS Code:		Compliance Status Description:	IN COMPLIANCE WITH PROCED
NAICS Code Description:		Date Plant Information Last Updated:	05/07/2014

Air Program Information

Air Program Code	Air Program Description	Air Program Status	Air Program Status Description	Air Program Subpart	Air Program Subpart Description	Class Code	Class Code Description	Compliance Status	S
0	SIP	O	OPERATING			B	POTENTIAL UNCONTROLLED EM	C	

Pollutant Data

Air Program Code	Pollutant Code / CAS Number	Pollutant / CAS Description	Attain Indicator	Attain Indicator Description	Pollutant Compliance Status	ES Pollutant Compliance Description	Pollutant Class Code	Pollut Desc
0	FACIL	FACILITY-WIDE PERMIT REQUIREMENTS	A	ATTAINMENT AREA FOR A GIV	C	IN COMPLIANCE WITH PROCED	B	POTENT UNCON EM

Compliance Monitoring Strategy

CMS Start Date	FY2008 CMS Indicator	FY2008 CMS Indicator Description	FY2009 CMS Indicator	FY2009 CMS Indicator Description

Plant Actions

Action Number	Key Action Numbers	Air Program Codes	National Action Type	National Action Description	Action Type	Action Description	Date Achieved	Penalty Amount	Results Code	Resul Desc

Action Number	Key Action Numbers	Air Program Codes	National Action Type	National Action Description	Action Type	Action Description	Date Achieved	Penalty Amount	Results Code	Resul Desc
90000		0			06	GENERAL ACTION TYPE SPECIFIED BY COMMENTS	25-OCT-99			
00300		0	PS	STATE/LOCAL PCE/ON-SITE	S8	INSPECTION BY STATE - LEVEL 2 OR GREATER	06-JUL-12		MC	IN COMP

Facility-wide permit requirements

Back to Search Results

Substance Details

Internal Tracking Number: 1648468
Substance Type: Miscellaneous Object
Systematic Name: Facility-wide permit requirements
Definition:
Permits provide information about the release and management of pollutants at a source, including the identity and amounts of pollutants that can be released and the management practices used to meet pollution control limits.
Additional Metadata

For more information about the substance, you may click one of the links below to take you to the relevant section:

- **Program and regulatory information about this substance, including links to EPA applications/systems, statues/regulations, or other sources that track or regulate this substance**
- **Information about related substances**
- **Health information about this substance**

Program and Regulatory Information

Statutes/Regulations

Below are the EPA applications/systems, statutes/regulations, or other sources that track or regulate this substance. This table shows how each list refers to the substance. To view more metadata about the specific Synonym, click on the Synonym.

There are no Synonyms of this type.

EPA Applications/Systems

Below are the EPA applications/systems, statutes/regulations, or other sources that track or regulate this substance. This table shows how each list refers to the substance. To view more metadata about the specific Synonym, click on the Synonym.

EPA Applications/Systems	Synonym	Synonym Quality	Effective Date	End Date

EPA Applications/Systems	Synonym	Synonym Quality	Effective Date	End Date
ICIS-Air	Facility-wide permit requirements	Valid		

Other Sources

Below are the EPA applications/systems, statutes/regulations, or other sources that track or regulate this substance. This table shows how each list refers to the substance. To view more metadata about the specific Synonym, click on the Synonym.

There are no Synonyms of this type.

Ad Hoc List

Ad Hoc List	Synonym	Synonym Quality	Effective Date	End Date
EPA	Facility-wide permit requirements	Valid		

Additional Synonyms
There are no Synonyms of this type.

Top of Page

Related Substances

This substance is not a Related Substance of any other substance.

Top of Page

Health and Other Scientific Information

The following list includes links related to the selected substance. Some of the following links exit EPA's site EXIT .

There are no related references for this substance.

Top of Page

Back to Search Results

Save Details as PDF

Molecular Structure

There is no structure for this substance.

SRS Information

- About SRS
- Search & Retrieve
- Automated Services
- Related Resources

Search

- Substance Search
- Advanced Search
- PMN & Accession Numbers Search

SRS Web Services / APIs

- SRS REST Web Services
- SRS Widget
- Single Substance Request (CDX Query Function) (REST and SOAP)
- Substance List Request (CDX Solicit Function) (SOAP)
- Add Substance to List Request (CDX Submit Function) (SOAP)

LAST UPDATED ON MARCH 13, 2019

VERSION: RELEASE/4.9.2

Newtown Creek Superfund Site
CAG Technical Meeting
July 24th, 2018

544119

Presentation Overview

- CSTAG Recommendations 2015
- In-depth look at progress made on CSTAG Recommendations
  - NAPL Delineation
  - NAPL Mobility
  - Shoreline Assessment
  - Ebullition
- Path Forward

Contaminated Sediments Technical Advisory Group (CSTAG) Meetings/Recommendations

- CSTAG Recommendations provided (July 2015)
- EPA response outlining goals (October 2015)
- Follow-up meeting with CSTAG (July 2017)
- Many CSTAG recommendation completed - some are ongoing.
- Summary of CSTAG recommendations and progress is summarized in the following slides

Summary of 2015 CSTAG Recommendations

- Recommendation 1/4/9 – Potential sources of recontamination and their significance
- Recommendation 3 – Coordination with NYSDEC
- Recommendation 5 – Lines of evidence for assessing sediment deposition
- Recommendation 6/14 – NAPL impacts and evaluation strategies
- Recommendation 7 – Analyses for evaluating benthic risk
- Recommendation 10 – Approaches for establishing background concentrations
- Recommendation 11/15 – Collection and use of fish contamination data and baseline sampling

Recommendation 1 – Identify all piped conveyances and estimate contributions to contaminant loadings

- Completed point source and groundwater investigations (Dec. 2015)
- Initial modeling of point source loadings and groundwater submitted with Draft RI Report (Nov. 2016). Under revision by the NCG.

Recommendation 4 - Refine Conceptual Site Model (CSM) to more accurately quantify significance of other sources (erosional shorelines, groundwater, and leaking bulkheads)

- Erosional shoreline sediment and shoreline seep sampling conducted in October 2017.
- Round 2 groundwater seepage measurements completed by USGS in June 2017. Report will be used to refine groundwater loading estimate and support groundwater modeling.
- Erosional and seepage data will be incorporated into the revised Draft RI.
- Review of existing upland data/reports to identify potential upland sources in progress.

Recommendation 9 – Develop plan for evaluation of NYCDEP CSO data and non-EPA-approved data

- EPA reviewed NYCDEP CSO data
- NYCDEP CSO dataset is similar to that collected under EPA oversight
- Non-EPA-approved data is evaluated on a case-by-case basis

Recommendation 3 – Increase collaboration with NYSDEC's Clean Water Act program

- NYSDEC participates in project conference calls, meetings, and reviews major documents
- Coordinating with EPA CWA, NYSDEC, and New York City on path forward under Superfund program.

Recommendation 5 – Multiple lines of evidence for assessing sediment deposition

- CSTAG felt sedimentation rates were too high and needed to be reviewed and refined
- Modeling technical working group developing site erosion/deposition rates for various reaches of the creek
- Lines-of-evidence approach being used

Recommendation 6 – Consider using removal action to more quickly remediate NAPL sources

- Ongoing evaluation of the RI data
- NAPL refinement and mobility field work completed in Spring 2018
- EPA is currently assessing potential upland sources

Recommendation 14 – Evaluate ebullition as transport mechanism and NAPL delineation .

Field Investigations:

- Qualitative and Quantitative ebullition surveys ongoing
- Further NAPL delineation and NAPL mobility assessment (completed in Spring 2018)

Recommendation 7 – Analyses for evaluating benthic risk

- Revised Draft BERA to include robust discussion of potential impacts to benthic invertebrates
- Revised draft to be distributed
- This could be a topic discussed in detail at future CAG meetings

Recommendation 10 – Approaches for establishing background concentrations

- Fourteen candidate reference areas, representing four categories, were identified, sampled, and evaluated
- BERA
  - Four areas representing different categories were selected for the BERA
  - All reference areas sampled for contaminants of concern, and physical parameters
  - Newtown Creek data were compared to each individual reference area and to a combined "Reference Envelope" using all four areas as one data set
- RI
  - Background concentration evaluation used all 14 reference areas
  - EPA is currently evaluating background values for the RI

Recommendation 11/15 – Collection and use of fish contaminant data and baseline sampling

- Round 1 biota sampling completed in Spring/Summer 2014
- Round 2 biota sampling is in progress - Spring/Summer 2018
- All rounds include collection fish, crab, and bivalve tissue samples

Recommendation 2 – Meaningful community involvement and outreach efforts

- Community Involvement Plan completed
- Working with CAG on independent meeting facilitator
- Worked with the CAG to install Fishing advisory signage and provide outreach materials in multiple languages

Recommendation 8 – Develop a data management plan

- Data is delivered to Region 2 in accordance with EPA Regional Electronic Data Deliverable (EDD) guidelines
- Data is uploaded to EQuIS environmental database, reviewed, and evaluated

Recommendation 12 – Division of site into smaller decision units

- Site divided in reaches in RI Report for data evaluation (e.g., main stem, turning basin, tributaries)
- Division into smaller decision units will be done in the FS

Recommendation 13 – Bulkheads contribution to contamination and potential for improvements

- Currently being addressed on case-by-case basis
- Collapses/bulkhead modifications under purview of NYSDEC and USACE. EPA coordinates with NYSDEC and USACE on Superfund aspects
- To be evaluated in detail as part of the FS

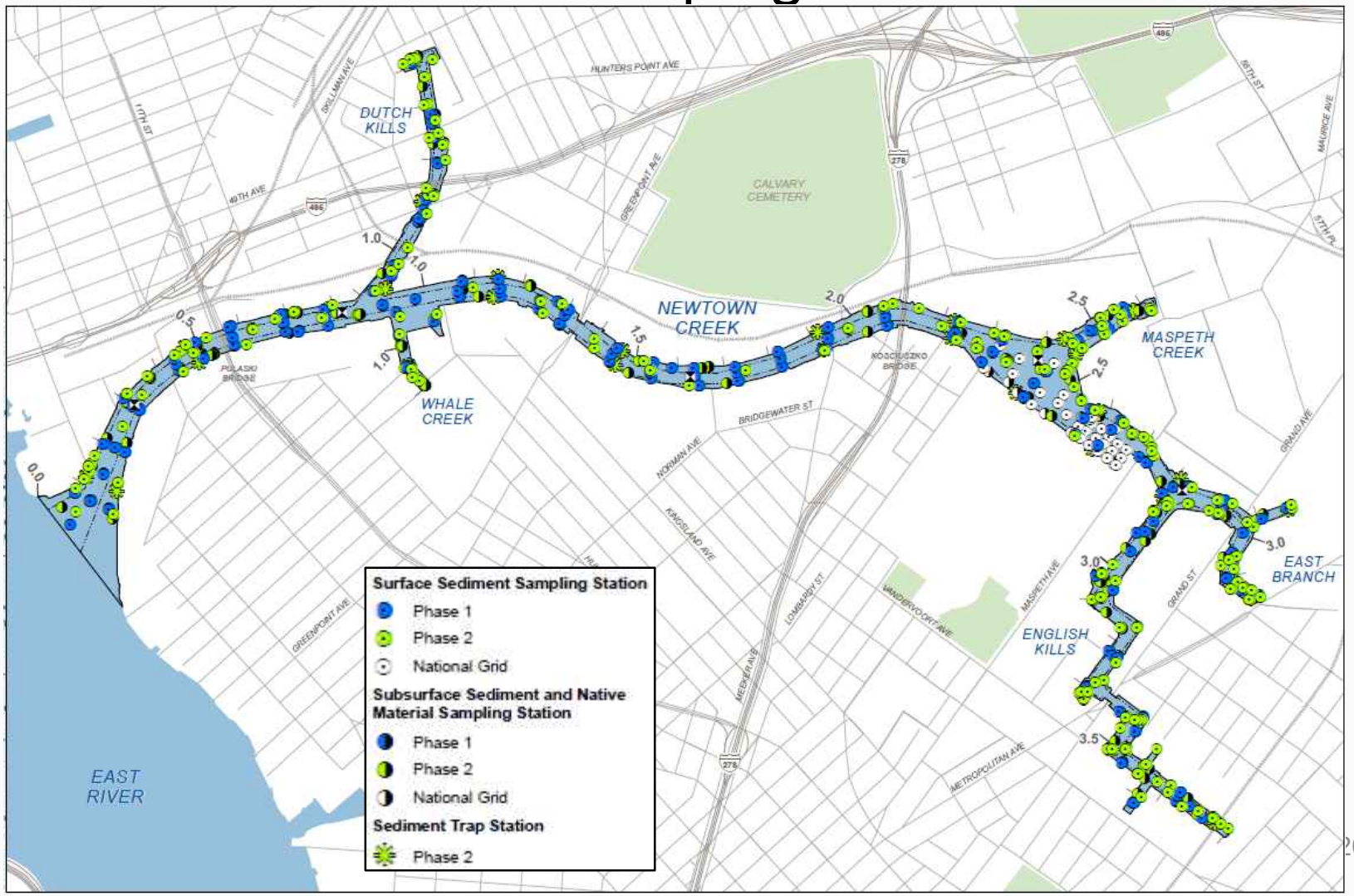
In-depth look at progress

- NAPL Delineation
- NAPL Mobility
- Shoreline Assessment
- Ebullition

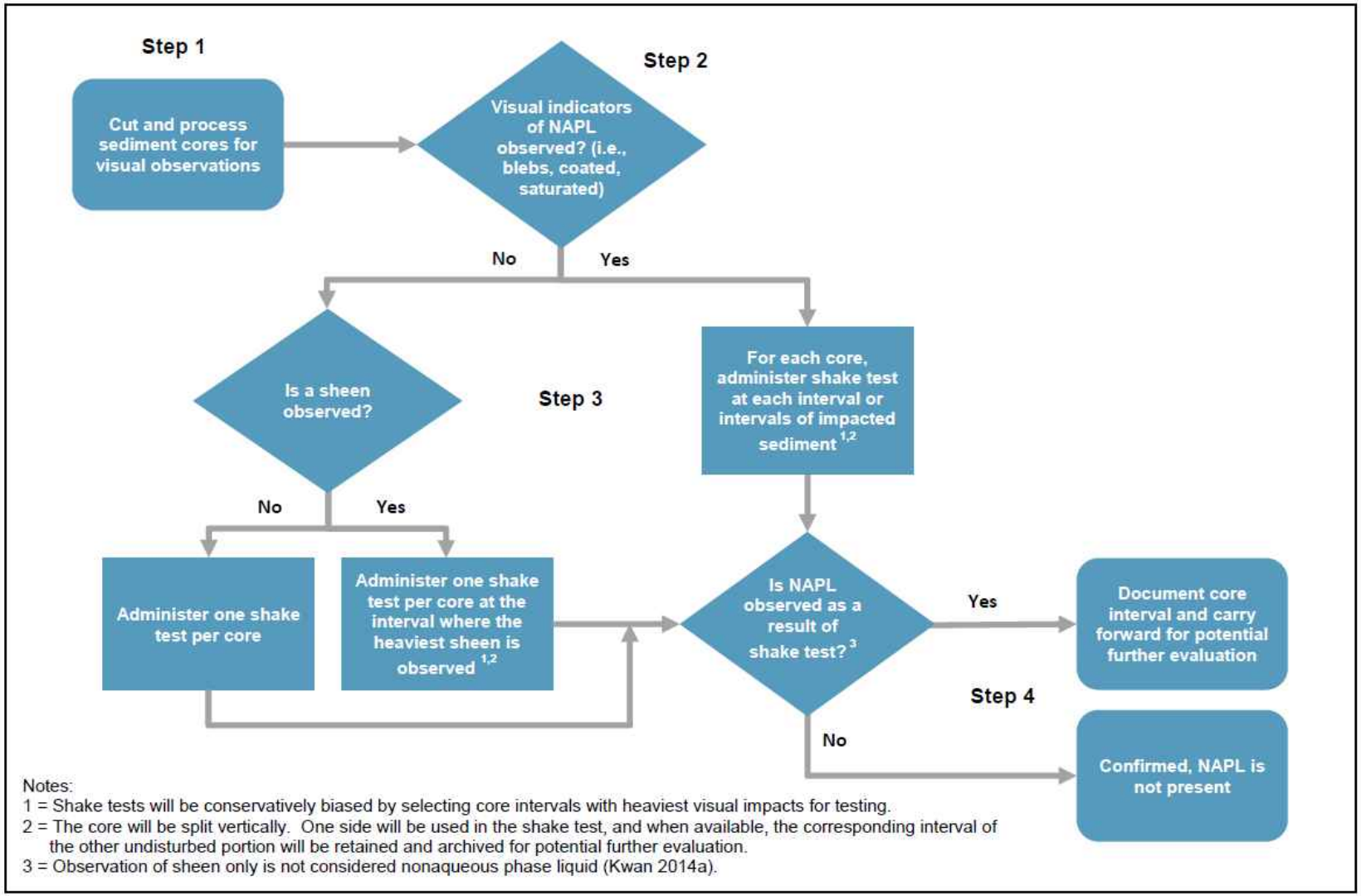
NAPL Delineation

- Phase 1 - Visual observations of cores showed evidence of NAPL in some creek areas
- Phase 2 -
  - Refined NAPL identification process and included standard NAPL visual identification methods and shake testing
  - Developed process for categorizing NAPL in cores (shake test and visual observations)
  - Evaluated Phase 2 NAPL data and Identified key NAPL areas (Category 2/3 areas)
- FS Field Work – Required collection of additional NAPL cores to refine the vertical and horizontal distribution of NAPL in Category 2/3 areas

NAPL Delineation – RI Sampling Locations

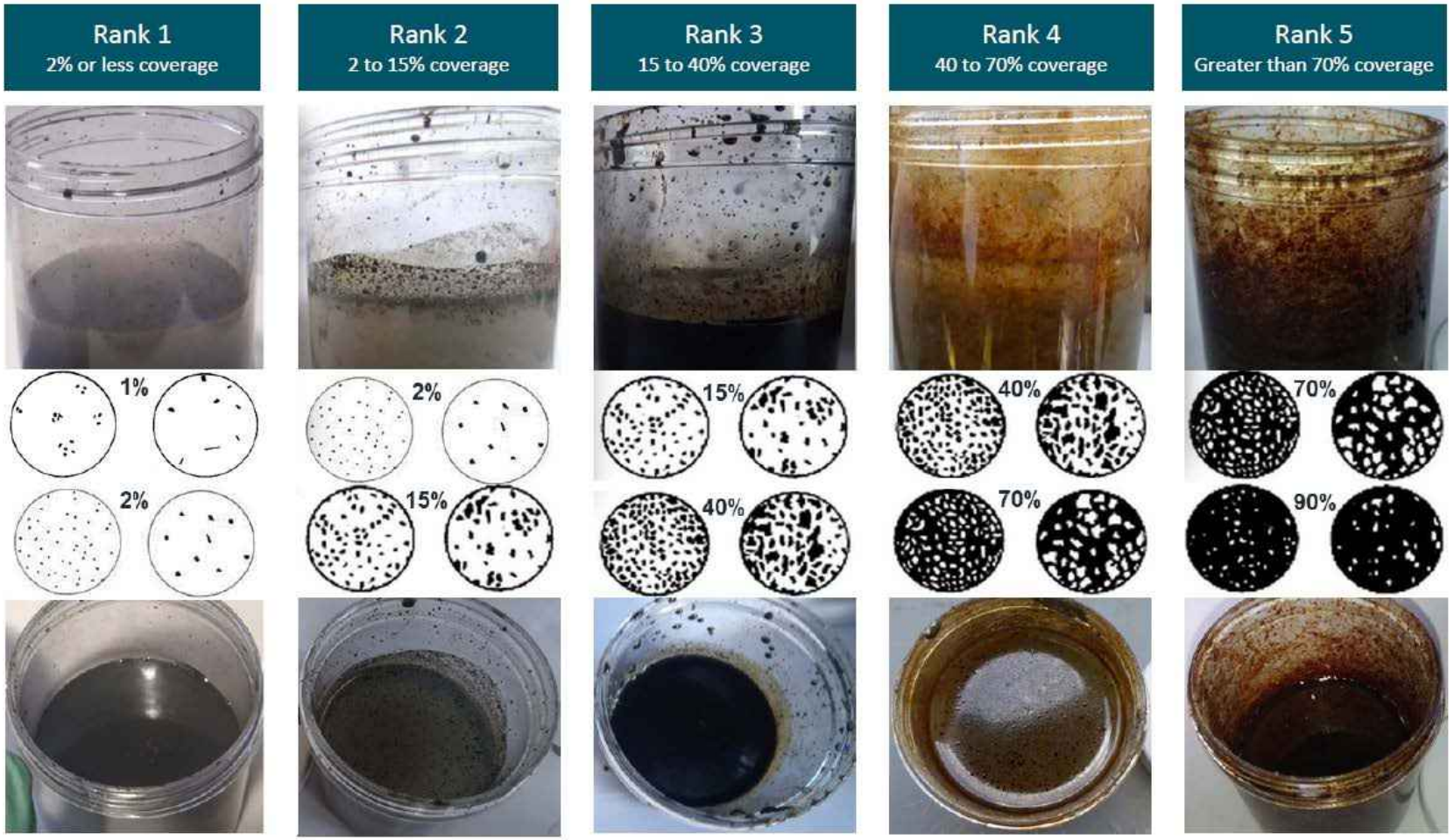


NAPL Delineation – Flow Chart for Field Identification of NAPL



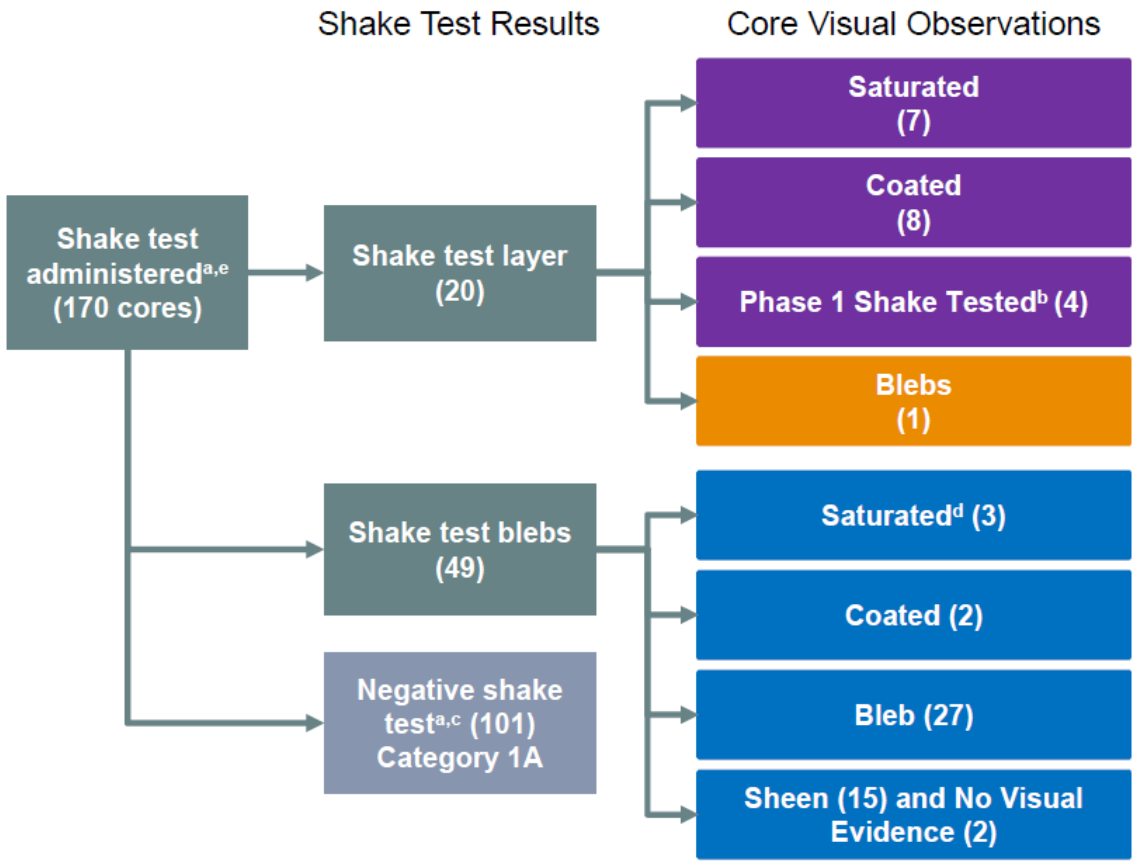
Notes:
1 = Shake tests will be conservatively biased by selecting core intervals with heaviest visual impacts for testing.
2 = The core will be split vertically. One side will be used in the shake test, and when available, the corresponding interval of the other undisturbed portion will be retained and archived for potential further evaluation.
3 = Observation of sheen only is not considered nonaqueous phase liquid (Kwan 2014a).

NAPL Delineation – Shake Test Bleb Rank Scale



Note: Comparison charts for visual estimation depicted above from the *Manual of Field Geology* (Compton 1962).

NAPL Delineation – Flow Chart for Shake Test Evaluation

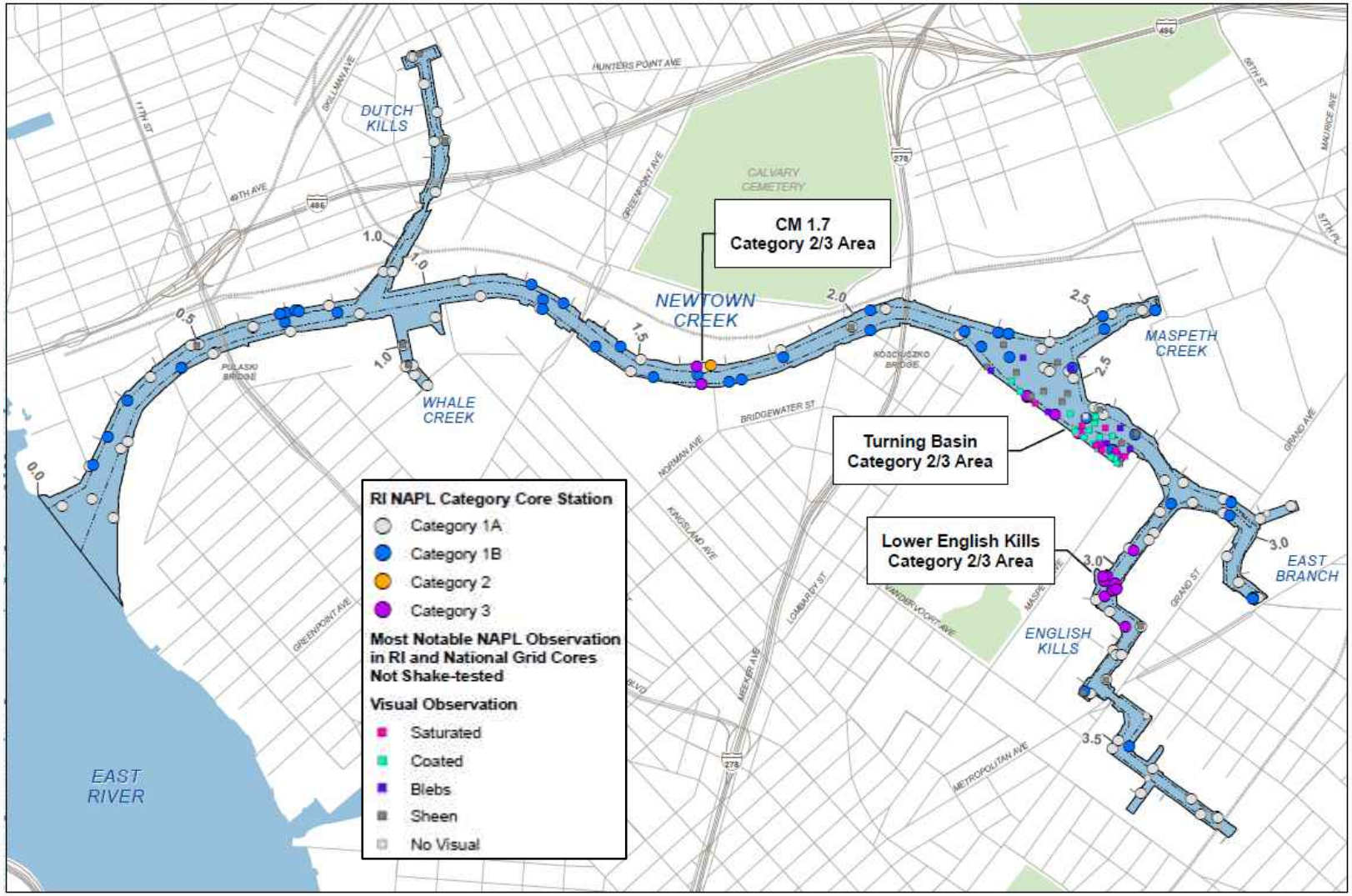


Notes:
a = Includes four additional cores with no visual evidence that were not shake tested—referred to as Phase 2 deviation cores.
b = Phase 1 visual observations include oil-coated and oil-wetted. Cores will be treated as Category 3.
c = Count includes one Phase 1 core with a negative shake test.
d =Three Category 1B cores have saturated visual observations. The shake test for one of these cores (EK093SC-A) was not performed on the saturated visual observation interval. EK093SC-A was evaluated as part of the English Kills area Category 2/3 process.
e =Count includes 19 Phase 1 archive cores processed in Phase 2.

Categories:

3, 2	Further evaluation
1B	Targeted evaluation
1A	No further evaluation

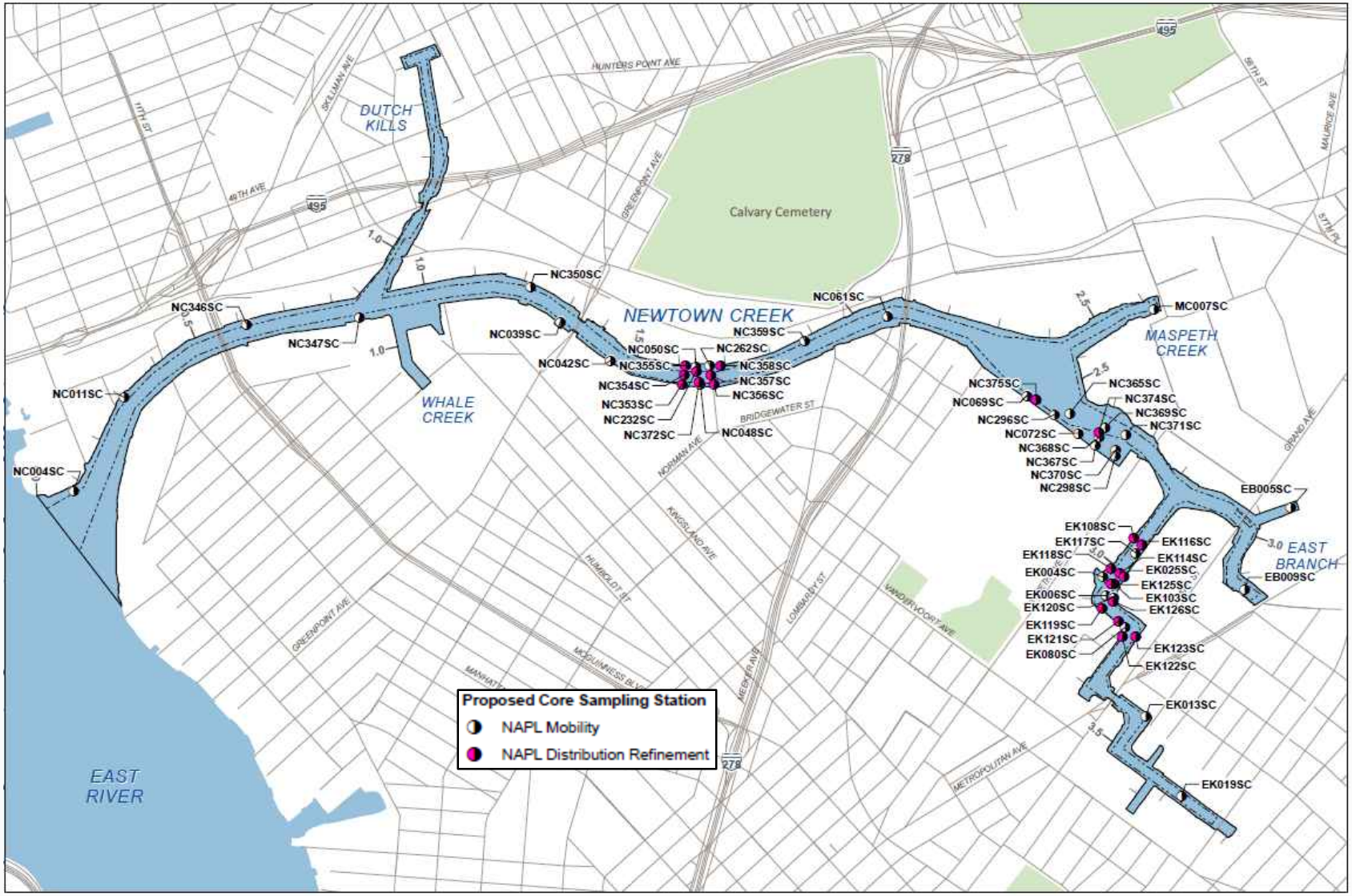
NAPL Delineation – RI NAPL Categories



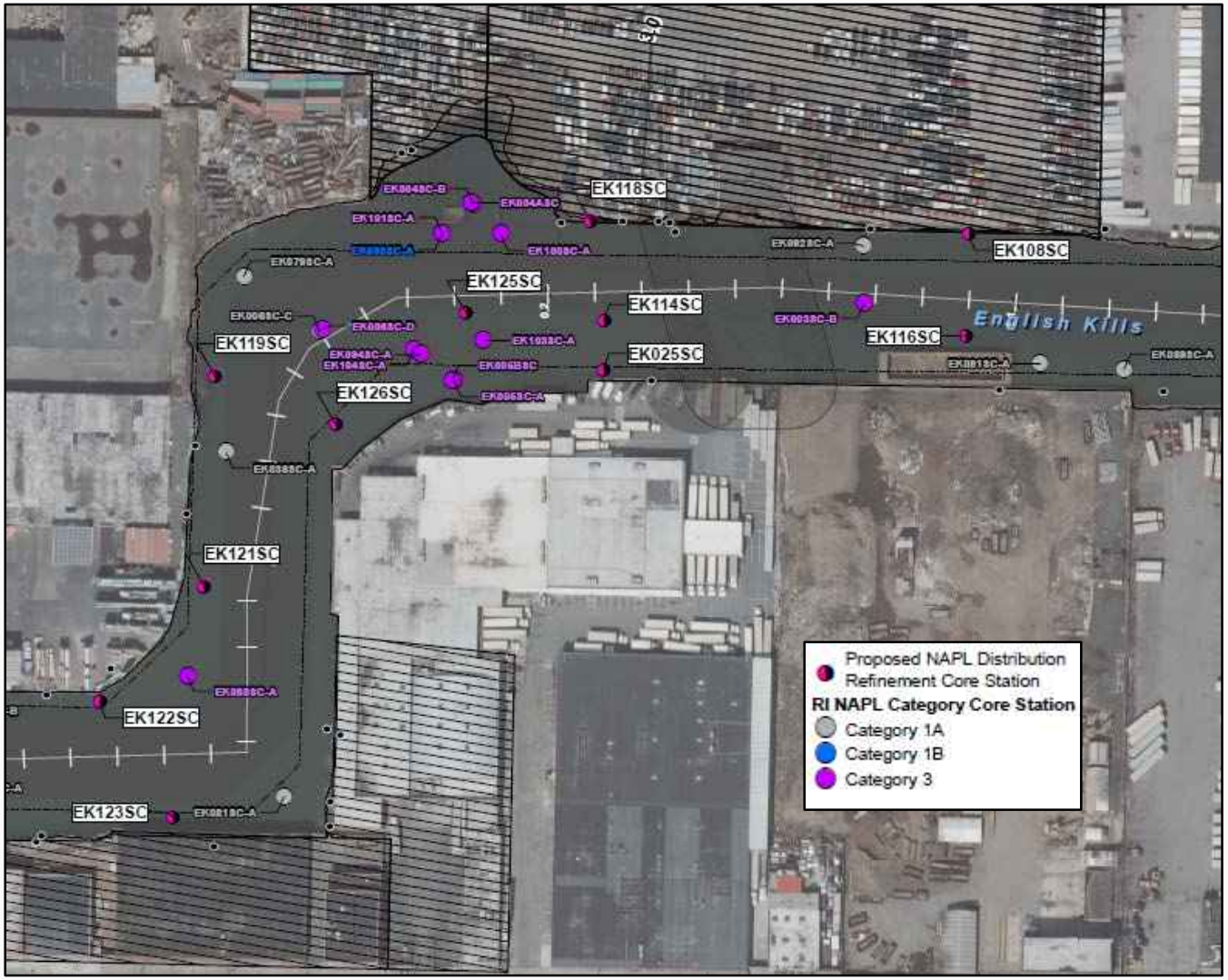
NAPL Distribution Refinement

- Collect and process additional cores in NAPL Category 2/3 areas
- Refine the lateral and vertical boundaries of NAPL in Category 2/3 areas
- Includes core collection, visual observations, and shake tests
- Data will be used to support evaluation of remedial alternative in the FS.

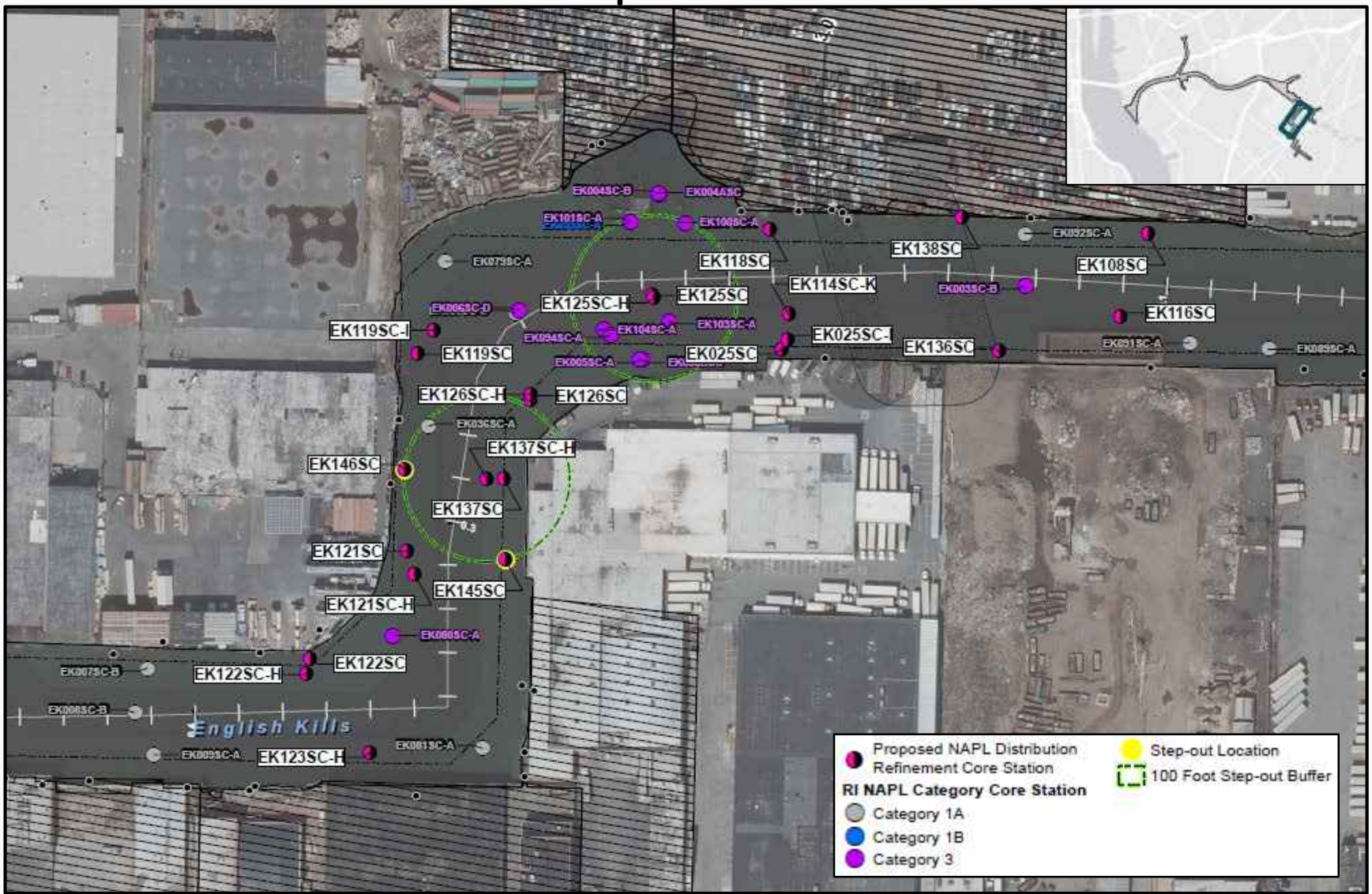
NAPL Refinement – Sampling Locations



NAPL Refinement – Sampling Locations (example English Kills)



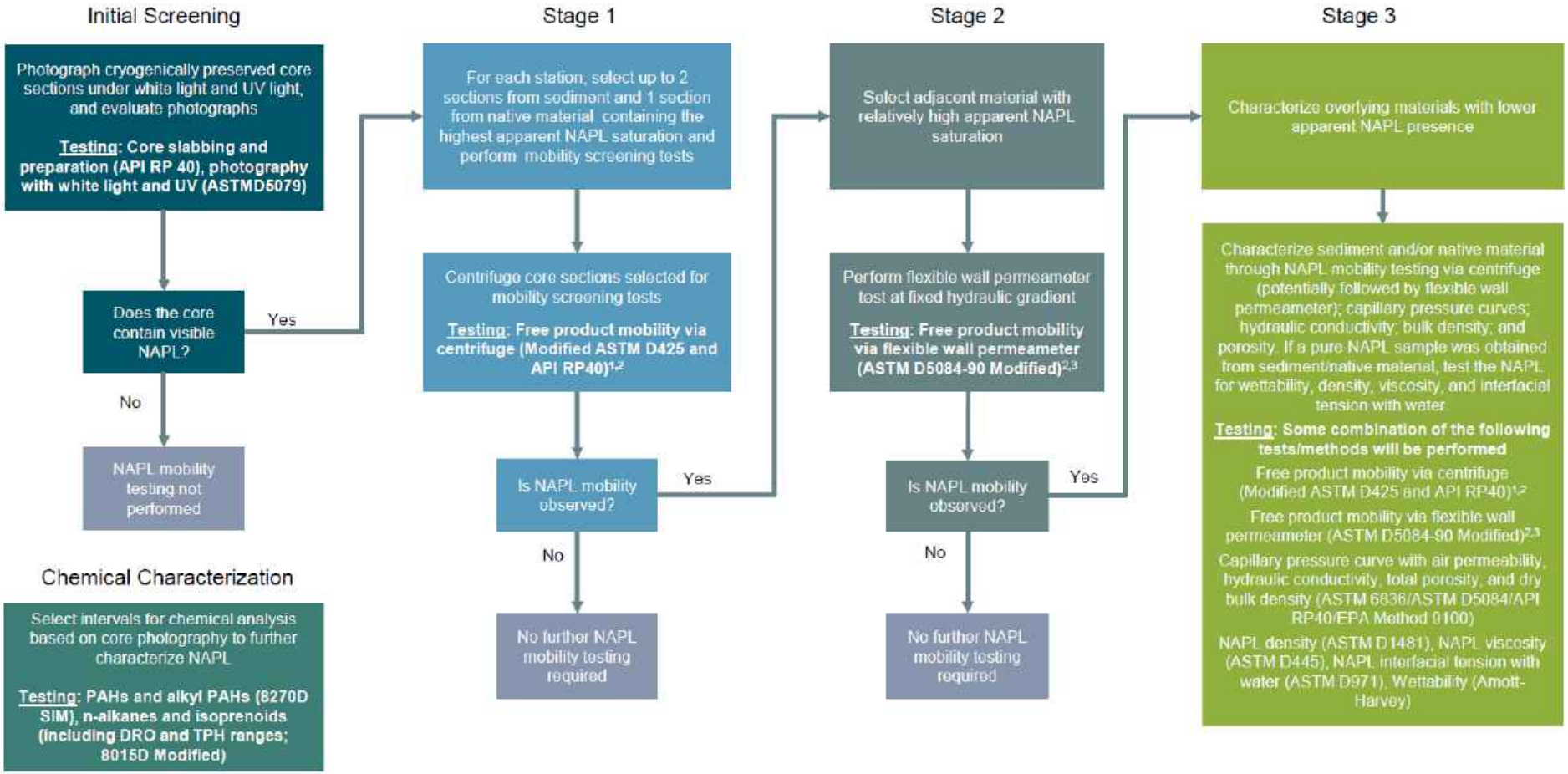
NAPL Refinement – Step-out Cores



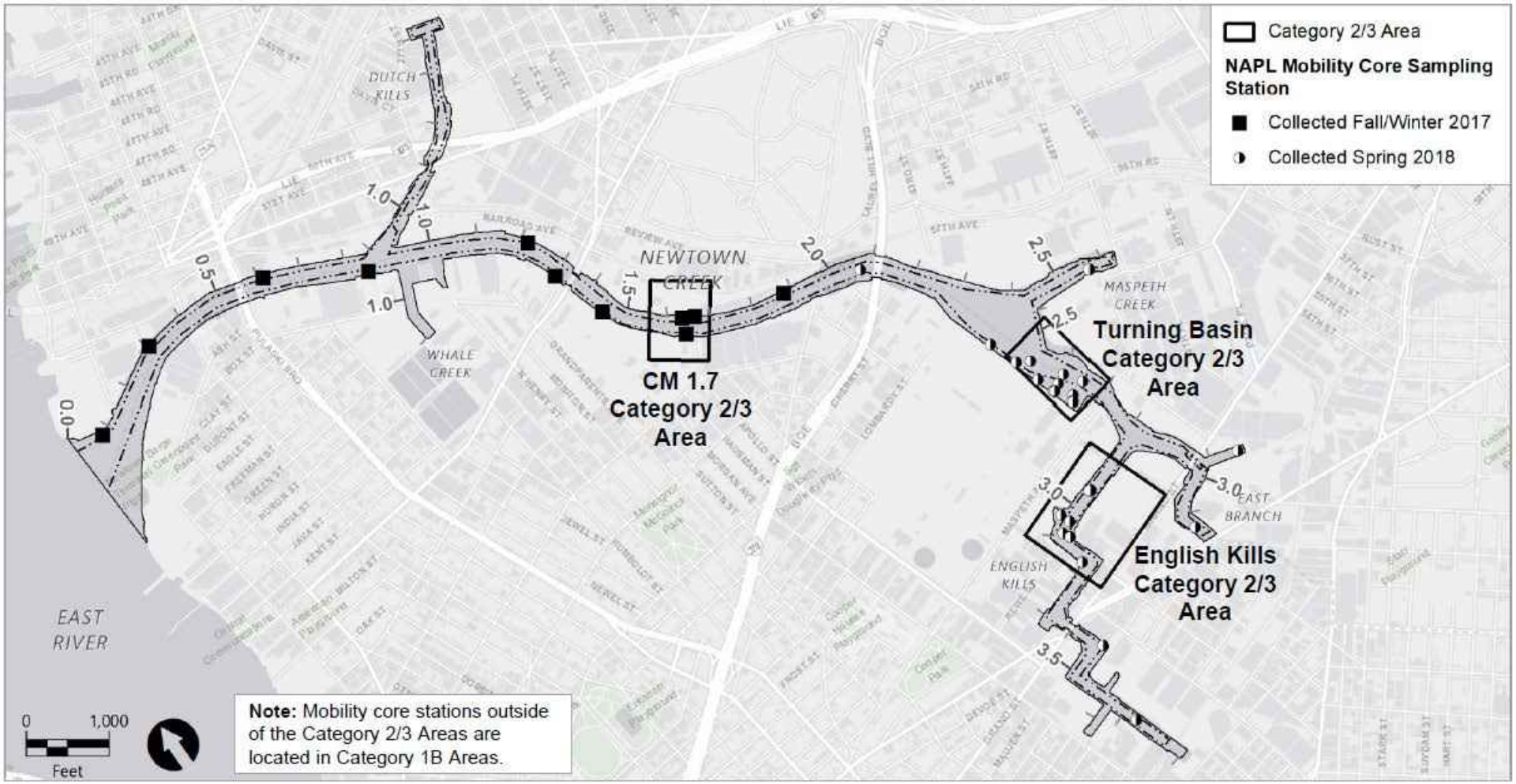
NAPL Mobility

- Characterize NAPL mobility and other physical parameters
  - Characterize potential for mobility in areas most likely to contain potentially mobile NAPL
  - Confirm lack of mobility in areas where RI indicated mobility is unlikely

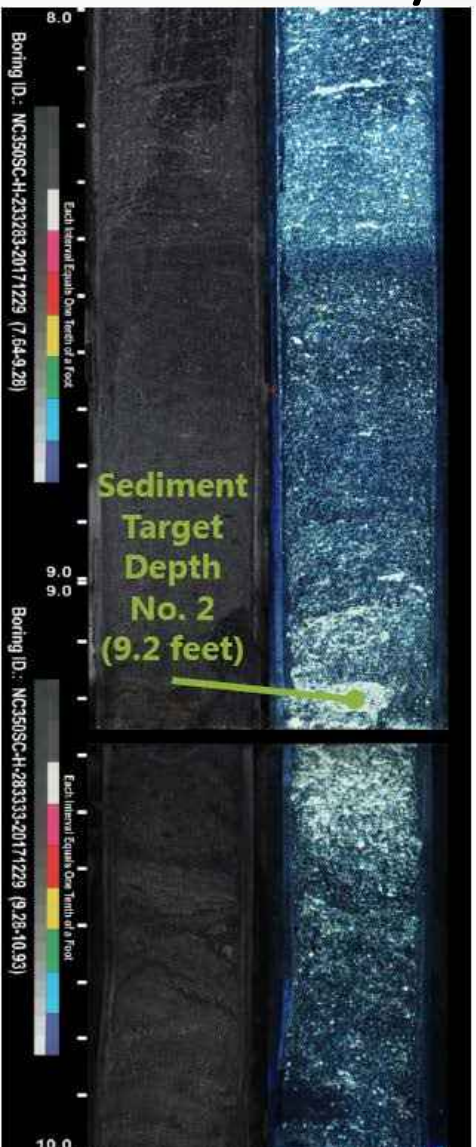
NAPL Mobility – Staged Approach for Testing

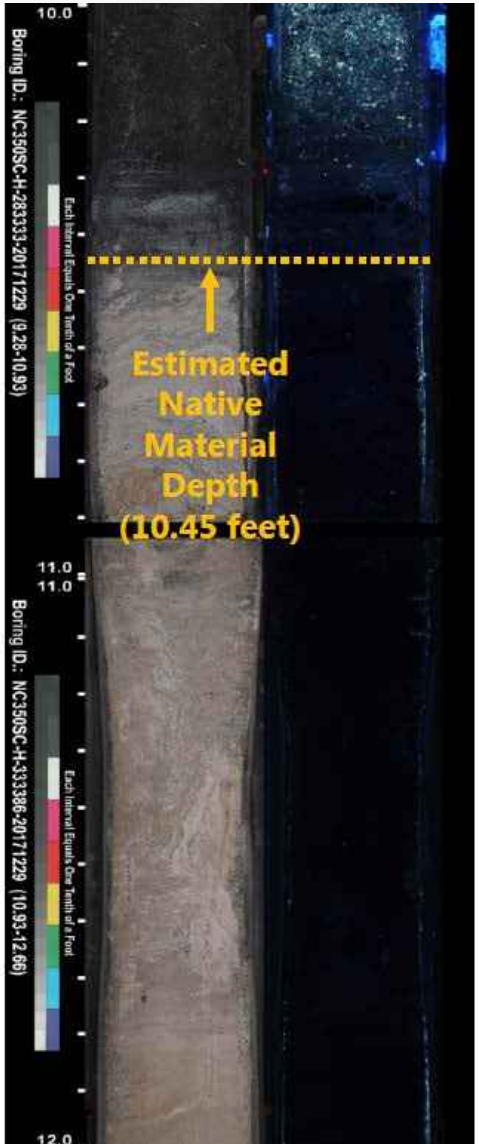


NAPL Mobility – Core Stations



NAPL Mobility





NAPL Mobility Testing Results

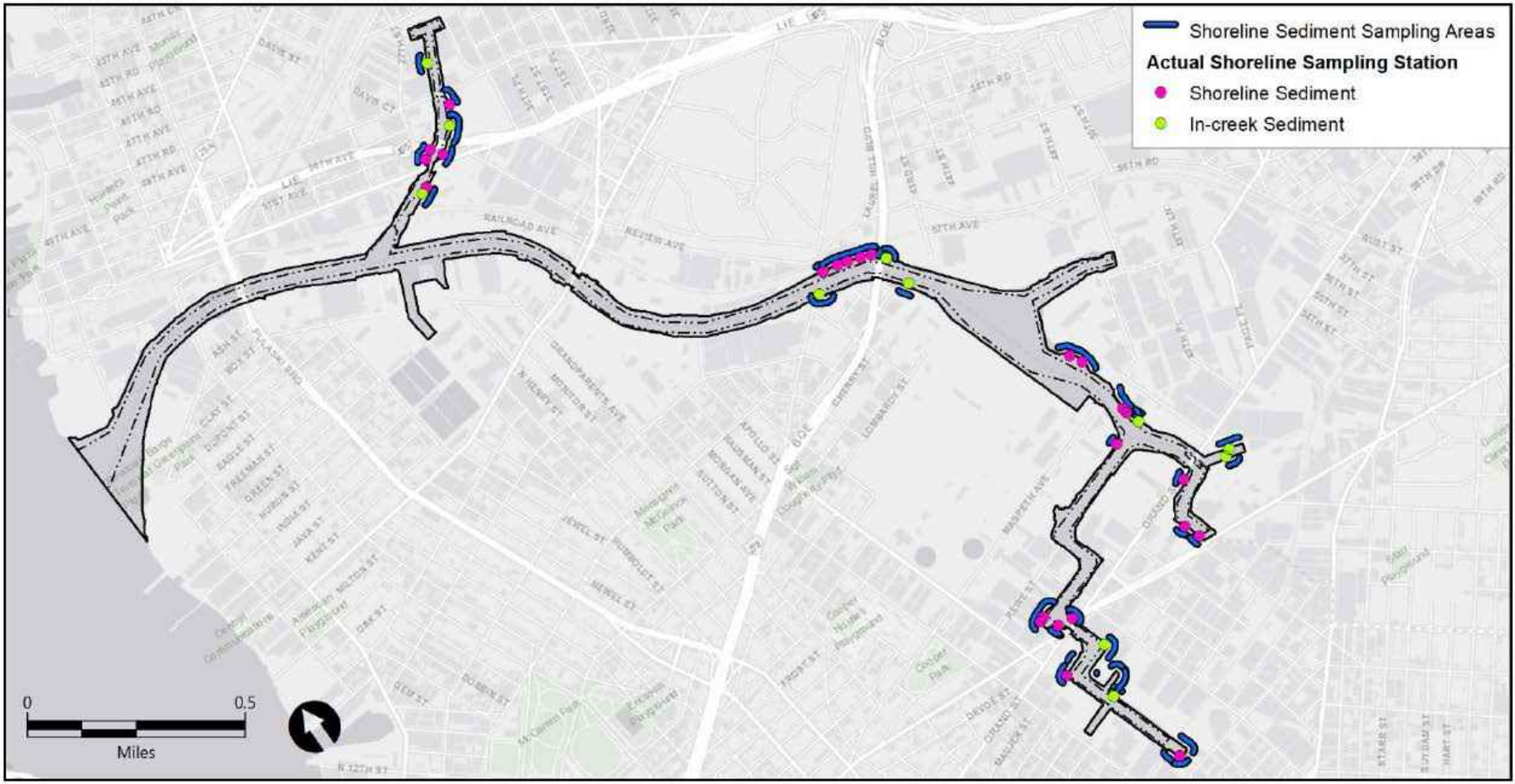
- Initial testing including centrifuging sample at 25 times gravity for 10 hours.
- Initial testing results did not indicate mobile NAPL in the cores tested.
- Testing of cores from other areas of the creek are currently being conducted.

Shoreline Assessment

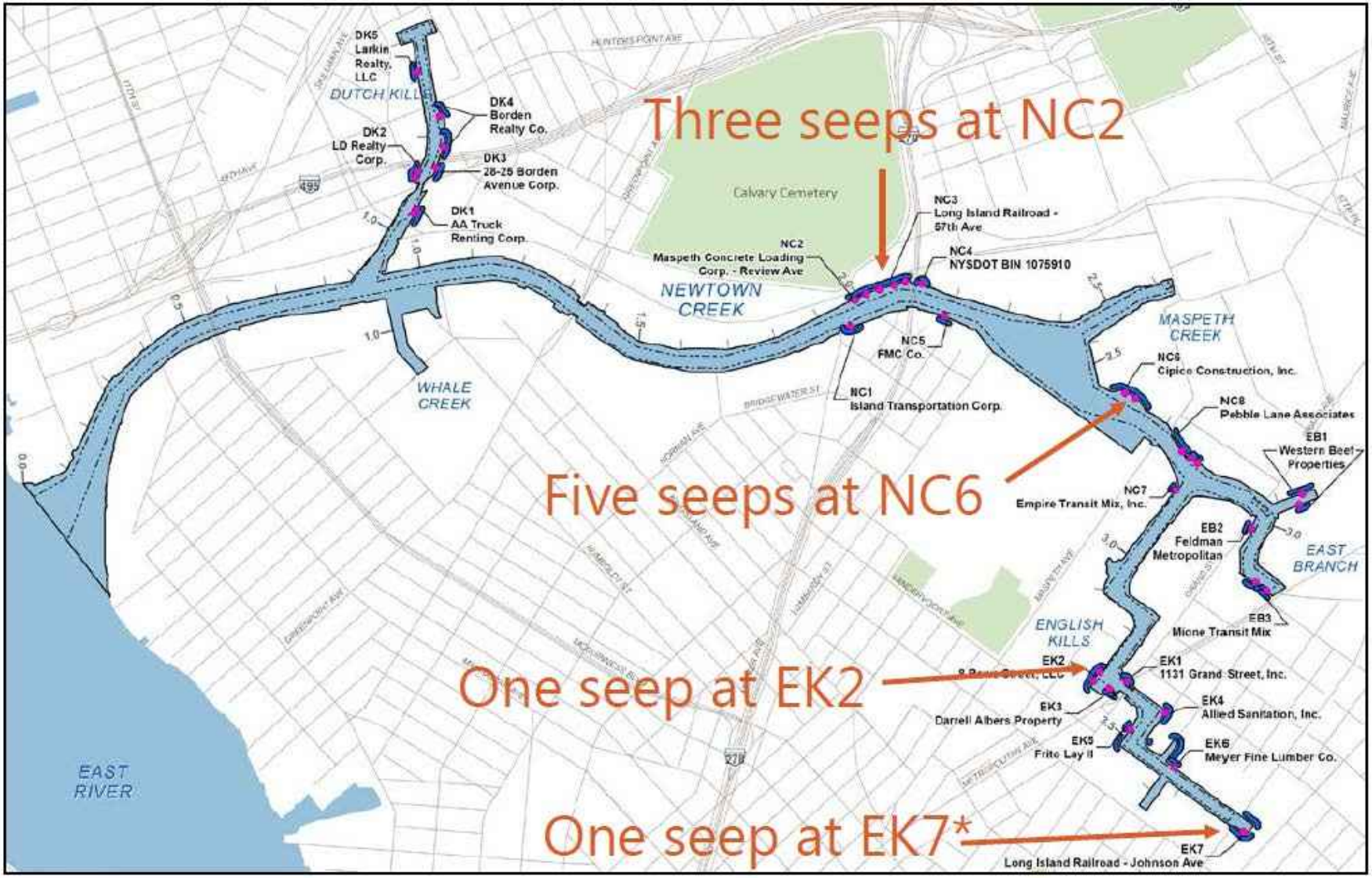
Goal: Further characterize contaminant distributions in and near potentially erodible shorelines and identify potentially significant source areas

- Sediment sampling
  - Prioritized areas of elevated sediment concentrations or data gaps
  - Sampling complete at 23 selected sites (total of 35 samples)
- Opportunistic Seep
  - Nine seeps were sampled

Shoreline Assessment – Sediment Sampling



Shoreline Assessment – Seep Sampling



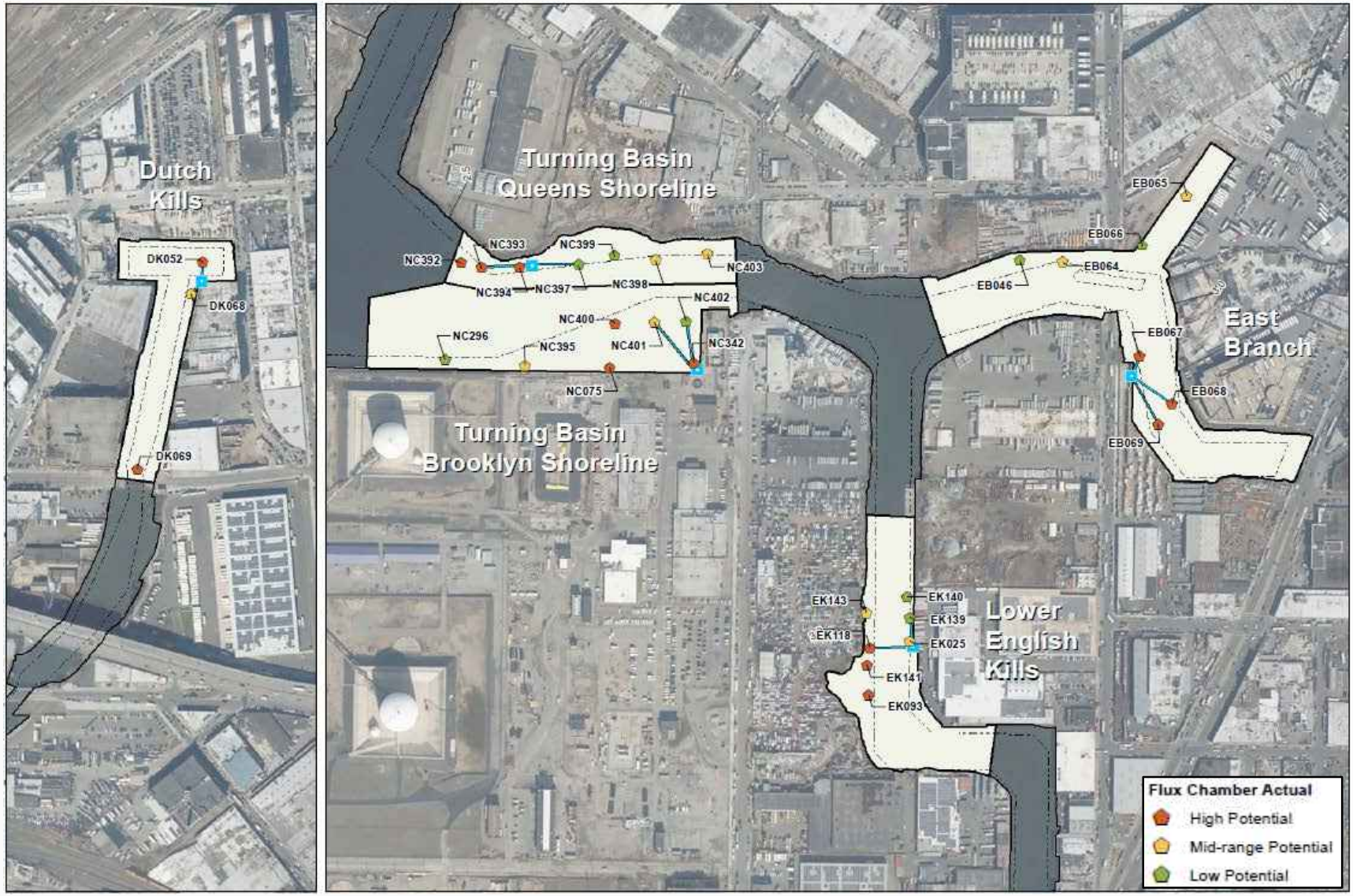
Ebullition

- Goals:
  - Measure upward fluxes of gas and NAPL/contaminants from the mudline to the surface water
  - Evaluate the effect of environmental conditions on gas ebullition-facilitated NAPL/contaminant transport
- Rationale for selecting areas
  - Survey areas were selected to represent the parts of the Creek with the highest gas ebullition-facilitated NAPL transport potential

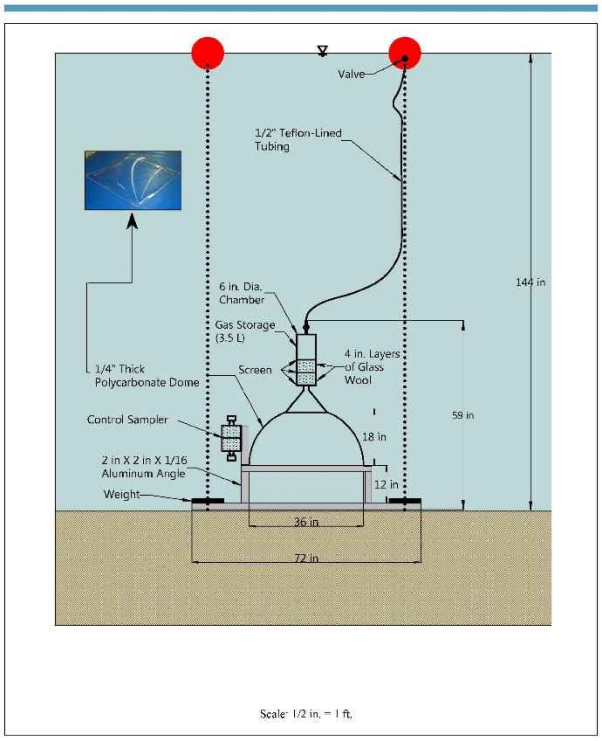
Ebullition Survey and Pilot Study

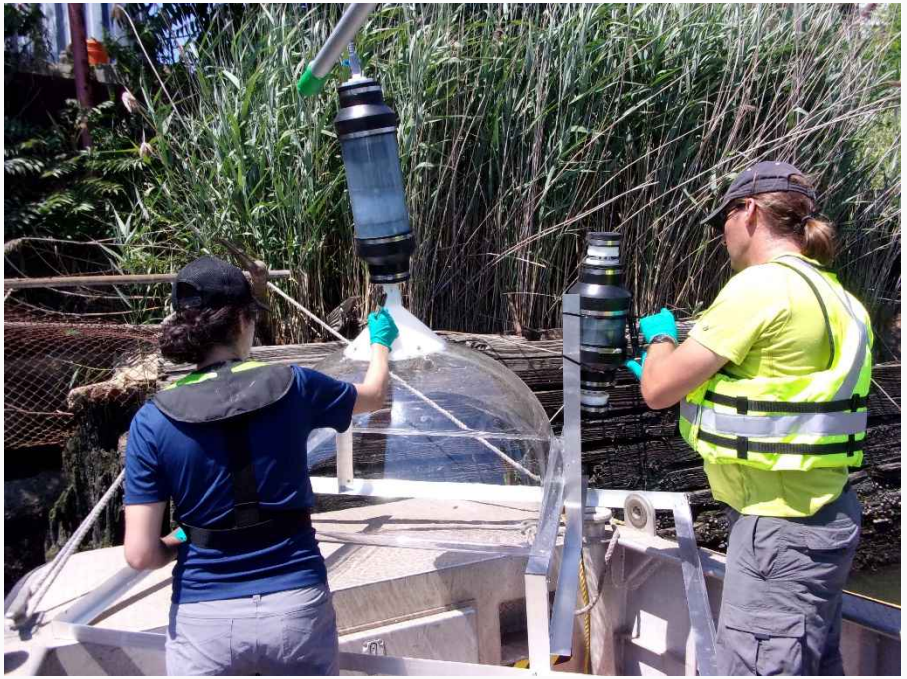
- Completed two qualitative ebullition surveys (2015, 2016)
- Quantitative ebullition pilot test completed in Sept 2017
- First Event of full-scale ebullition quantitative investigation July 2018
- Second full-scale ebullition event scheduled for fall 2018.

FS Field Investigation - Ebullition

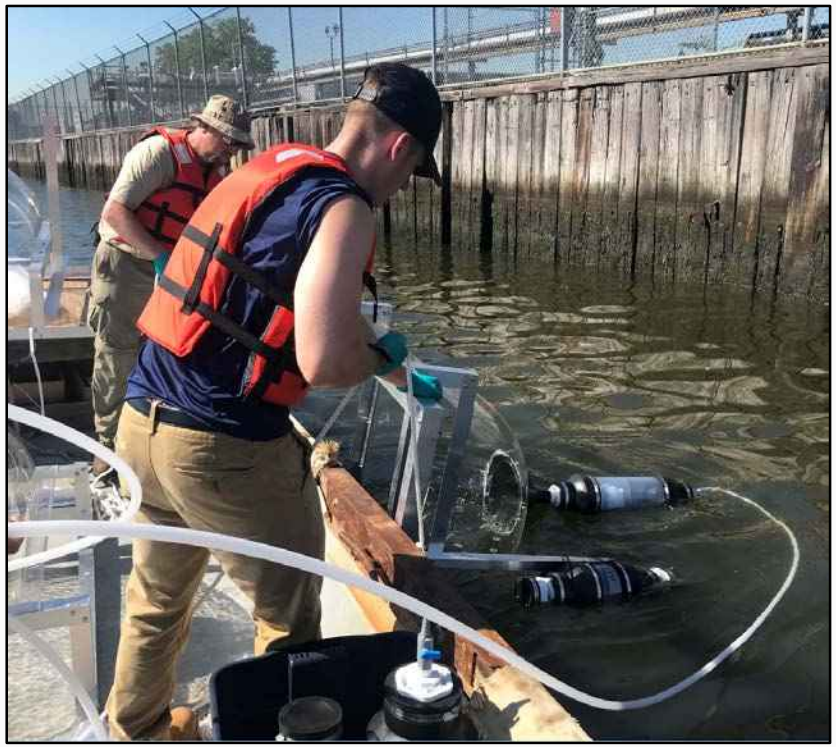


Flux Chambers:





FS Investigation - Ebullition



Next Steps

- RI Report – Final Draft
- RI Modeling – Hydrodynamics and Sediment Transport – Final Draft
- BHHRA – Final
- BERA – Revised Draft

Questions??????

NEW YORK STATE | Department of Environmental Conservation

FACT SHEET

Voluntary Cleanup Program

Popular Hand Laundry
88 Ingraham Street
Brooklyn, NY 11237

SITE No. V00170
NYSDEC REGION 2

December 2017

NYSDEC Certifies Cleanup Requirements Achieved at Voluntary Cleanup Site

The New York State Department of Environmental Conservation (NYSDEC) has determined that the cleanup requirements to address contamination related to Popular Hand Laundry (the "site") located at 88 Ingraham Street, Brooklyn, NY under New York State's Voluntary Cleanup Program (VCP) have been met. Please see the map for the site location.

The cleanup activities were performed by 88 Ingraham Realty Corp. and Popular Hand Laundry and Cleaners of Richmond Hill, Inc. (collectively, the "Volunteer") with oversight provided by NYSDEC. NYSDEC has issued a release letter to the Volunteer regarding the site. Copies of the release letter and Final Engineering Report (FER), which documents the completion of the site remedy, are available at the location(s) identified under "Where to Find Information."

Completion of the Project: The following activities have been completed to achieve the remedial action objectives:

- Installation, operation and maintenance of Air Sparge (AS)/Soil Vapor Extraction (SVE) to address contamination in soil and groundwater beneath the site;
- Installation and operation of a sub-slab depressurization system (SSDS) following termination of the AS/SVE system operations to prevent migration of contaminated vapor into the on-site building;
- Maintenance of a site cover system consisting of the concrete floor slab;
- Publication of a Site Management Plan (SMP) for long-term management of residual contamination as required by the Declaration of Covenants and Restrictions, including plans for: (1) Institutional and Engineering Controls (IC/ECs); (2) monitoring; (3) operation and maintenance; and (4) reporting; and
- Recording of a Deed Restriction, documenting required IC/ECs, to prevent future exposure to any residual contamination remaining at the site and to ensure implementation of the SMP.

Final Engineering Report Approved: NYSDEC has approved the FER, which:

- Describes the cleanup activities completed.
- Certifies that cleanup requirements have been achieved for the site.
- Describes any ICs/ECs to be used. An institutional control is a non-physical restriction on use of the site, such as a deed restriction, when contamination left over after the cleanup action makes the site suitable for some, but not all uses. An engineering control is a physical barrier or method to manage contamination such as a surface cap or vapor barrier.
- Certifies that an SMP for any engineering controls used at the site has been approved by NYSDEC.

Next Steps: With receipt of a release letter, the Volunteer has no liability to the State for contamination at or coming from the site, subject to certain conditions. A release letter may be modified or revoked if, for example, there is a failure to comply with the terms of the order or agreement with NYSDEC.

Where to Find Information:
Project documents are available at the following location(s) to help the public stay informed.

NYSDEC, Region 2 Office
47-40 21st Street
Long Island City, NY 11101
Call in advance: (718) 482-4900

Who to Contact:
Comments and questions are always welcome and should be directed as follows:

Project-Related Questions:
Bryan Wong, Project Manager
NYSDEC, Region 2 Office
47-40 21st Street
Long Island City, NY 11101
(718) 482-4905
yukyin.wong@dec.ny.gov

Health-Related Questions:
Stephen Lawrence
NYSDOH
Empire State Plaza
Corning Tower Room 1787
Albany, NY 12237
(518) 402-7860
beei@health.ny.gov

For additional information on the New York's Voluntary Cleanup Program, visit:
www.dec.ny.gov/chemical/8442.html

VOLUNTARY CLEANUP PROGRAM

Site Description and Background: The 0.2-acre site is located on Ingraham Street in Brooklyn, New York and is identified as Section 10, Block 2998 and Lot 19 on the City of New York Tax map. The site is located in a generally industrial neighborhood bounded by Ingraham Street to the north, a commercial property to the south, a commercial property to the east, and a commercial property to the west. The site was formerly occupied by a commercial dry cleaning business. Investigations at the site undertaken prior to the remediation identified chlorinated volatile organic compounds (including the dry cleaning solvent tetrachloroethylene) in soil, groundwater and soil vapor at the site.

Additional site details, including environmental and health assessment summaries, are available on NYSDEC's Environmental Site Remediation Database (by entering the Site ID, V00170) at:

http://www.dec.ny.gov/cfmx/extapps/derexternal/index.cfm?pageid=3

Voluntary Cleanup Program: New York's Voluntary Cleanup Program (VCP) to address the environmental, legal and financial barriers that often hinder the redevelopment and reuse of contaminated properties. The Voluntary Cleanup program was developed to enhance private sector cleanup of brownfields by enabling parties to remediate sites using private rather than public funds and to reduce the development pressures on “greenfield” Site.

For more information about the VCP, visit:

http://www.dec.ny.gov/chemical/8442.html

We encourage you to share this fact sheet with neighbors and tenants, and/or post this fact sheet in a prominent area of your building for others to see.

Receive Site Fact Sheets by Email

Have site information such as this fact sheet sent right to your email inbox. NYSDEC invites you to sign up with one or more contaminated sites county email listservs available at the following web page:

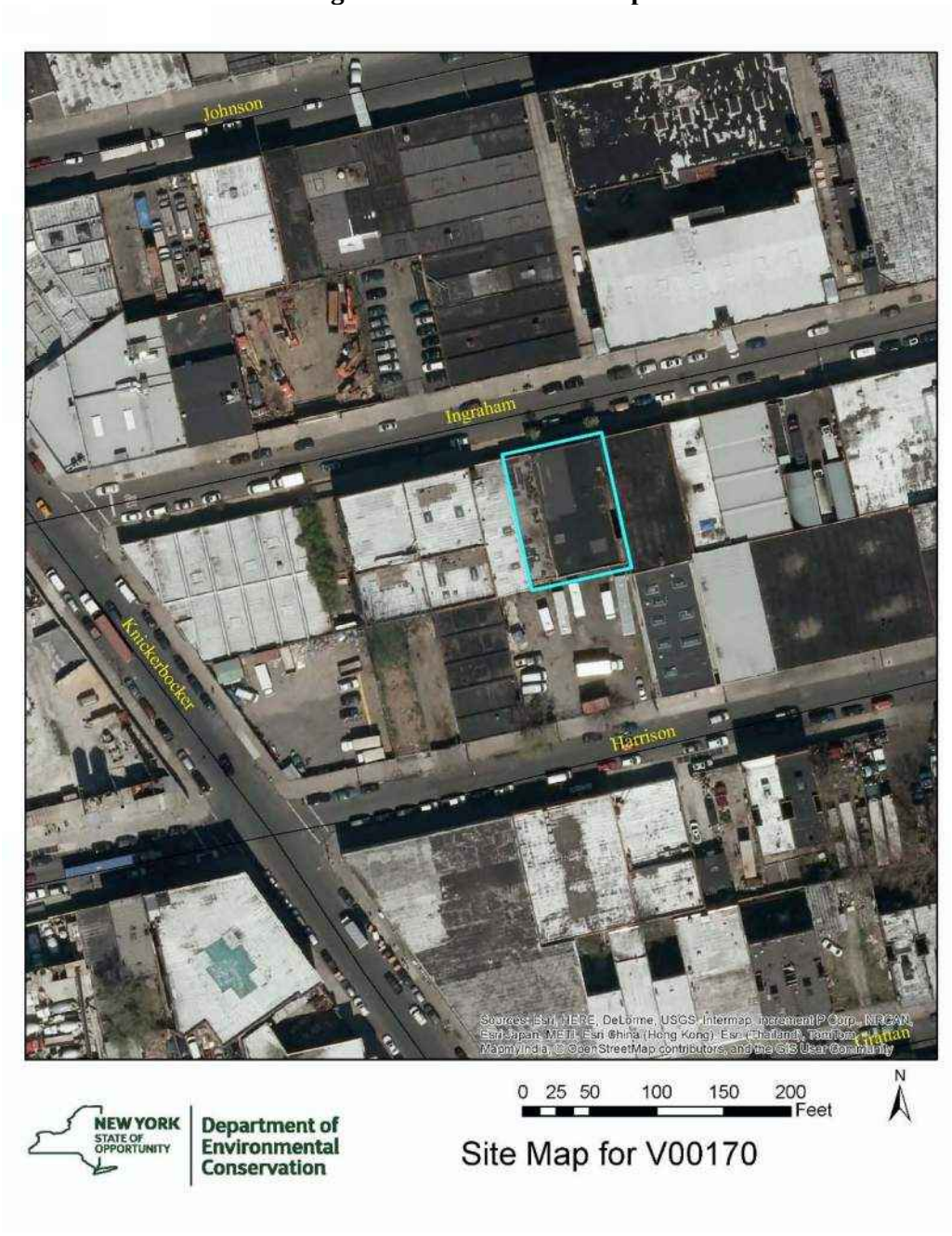
www.dec.ny.gov/chemical/61092.html

It’s quick, it’s free, and it will help keep you better informed. As a listserv member, you will periodically receive site-related information/ announcements for all contaminated sites in the county(ies) you select.

Note: Please disregard if you already have signed up and received this fact sheet electronically.

VOLUNTARY CLEANUP PROGRAM

Figure 1 – Site Location Map



Detailed Facility Report

Facility Summary

88 INGRAHAM REALTY CORP
88 INGRAHAM ST, BROOKLYN, NY 11206

FRS (Facility Registry Service) ID: 110043772708
EPA Region: 02
Latitude: 40.70735
Longitude: -73.93023
Locational Data Source: FRS
Industry:
Indian Country: N

Enforcement and Compliance Summary

Statute	RCRA
Insp (5 Years)	--
Date of Last Inspection	--
Current Compliance Status	No Violation Identified
Qtrs with NC (of 12)	0
Qtrs with Significant Violation	0
Informal Enforcement Actions (5 years)	--
Formal Enforcement Actions (5 years)	--
Penalties from Formal Enforcement Actions (5 years)	--
EPA Cases (5 years)	--
Penalties from EPA Cases (5 years)	--

Regulatory Information

Clean Air Act (CAA): No Information
Clean Water Act (CWA): No Information
Resource Conservation and Recovery Act (RCRA): Active (H) SQG (NYD020592838)
Safe Drinking Water Act (SDWA): No Information

Other Regulatory Reports

Air Emissions Inventory (EIS): No Information
Greenhouse Gas Emissions (eGGRT): No Information
Toxic Releases (TRI): No Information
Compliance and Emissions Data Reporting Interface (CEDRI): No Information

Known Data Problems

Facility/System Characteristics

Facility/System Characteristics

System	Statute	Identifier	Universe	Status	Areas	Permit Expiration Date	Indian Country	Latitude	Longitude
FRS		110043772708					N	40.70735	-73.93023
RCRAInfo	RCRA	NYD020592838	SQG	Active (H)			N	40.707324	-73.930301

Facility Address

System	Statute	Identifier	Facility Name	Facility Address
FRS		110043772708	88 INGRAHAM REALTY CORP	88 INGRAHAM ST, BROOKLYN, NY 11206
RCRAInfo	RCRA	NYD020592838	88 INGRAHAM REALTY CORP	88 INGRAHAM ST, BROOKLYN, NY 11206

Facility SIC (Standard Industrial Classification) Codes

System	Identifier	SIC Code	SIC Description
No data records returned			

Facility NAICS (North American Industry Classification System) Codes

System	Identifier	NAICS Code	NAICS Description
RCRAInfo	NYD020592838	23899	All Other Specialty Trade Contractors

Facility Tribe Information

Reservation Name	Tribe Name	EPA Tribal ID	Distance to Tribe (miles)
No data records returned			

Enforcement and Compliance

Compliance Monitoring History (5 years)

Statute	Source ID	System	Compliance Monitoring Type	Lead Agency	Date	Finding (if applicable)
No data records returned						

Entries in italics are not counted in EPA compliance monitoring strategies or annual results.

Compliance Summary Data

Statute	Source ID	Current SNC (Significant Noncompliance)/HPV (High Priority Violation)	Current As Of	Qtrs with NC (Noncompliance) (of 12)	Data Last Refreshed
RCRA	NYD020592838	No	06/22/2019	0	06/21/2019

Three-Year Compliance History by Quarter

Statute	Program/Pollutant/Violation Type	QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11	QTR 12+
RCRA (Source ID: NYD020592838)		07/01-09/30/16	10/01-12/31/16	01/01-03/31/17	04/01-06/30/17	07/01-09/30/17	10/01-12/31/17	01/01-03/31/18	04/01-06/30/18	07/01-09/30/18	10/01-12/31/18	01/01-03/31/19	04/01-06/30/19

Statute	Program/Pollutant/Violation Type	QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11	QTR 12+
	Facility-Level Status	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**

Informal Enforcement Actions (5 Years)

Statute	System	Source ID	Type of Action	Lead Agency	Date
No data records returned					

Formal Enforcement Actions (5 Years)

Statute	System	Law/Section	Source ID	Action Type	Case No.	Lead Agency	Case Name	Issued/Filed Date	Settlements/Actions	Settlement/Action Date	Federal Penalty	State/Local Penalty	SEP Cost	Comp Action Cost
No data records returned														

Environmental Conditions

Water Quality

Permit ID	Combined Sewer System?	Number of CSO (Combined Sewer Overflow) Outfalls	12-Digit WBD (Watershed Boundary Dataset) HUC (RAD (Reach Address Database))	WBD (Watershed Boundary Dataset) Subwatershed Name (RAD (Reach Address Database))	State Waterbody Name (ICIS (Integrated Compliance Information System))	Impaired Waters	Impaired Class	Causes of Impairment(s) by Group(s)	Watershed with ESA (Endangered Species Act)-listed Aquatic Species?
No data records returned									

Waterbody Designated Uses

Reach Code	Waterbody Name	Exceptional Use	Recreational Use	Aquatic Life Use	Shellfish Use	Beach Closure Within Last Year	Beach Closure Within Last Two Years
No data records returned							

Air Quality

Nonattainment Area?	Pollutant(s)	Applicable Nonattainment Standard(s)
Yes	Ozone	8-Hour Ozone (1997), 8-Hour Ozone (2008), 8-Hour Ozone (2015)
No	Lead	
Yes	Particulate Matter	PM-2.5 (1997), PM-2.5 (2006)
Yes	Carbon Monoxide	Carbon Monoxide (1971)
No	Nitrogen Dioxide	
No	Sulfur Dioxide	

Pollutants

Toxics Release Inventory History of Reported Chemicals Released in Pounds per Year at Site

TRI Facility ID	Year	Total Air Emissions	Surface Water Discharges	Off-Site Transfers to POTWs (Publicly Owned Treatment Works)	Underground Injections	Releases to Land	Total On-site Releases	Total Off-site Releases
No data records returned								

Toxics Release Inventory Total Releases and Transfers in Pounds by Chemical and Year

Chemical Name
No data records returned

Demographic Profile

EJSCREEN EJ Indexes

Eleven primary environmental justice (EJ) indexes of EJSCREEN, EPA's screening tool for EJ concerns. EPA uses these indexes to identify geographic areas that may warrant further consideration or analysis for potential EJ concerns. Note that use of these indexes does not designate an area as an "EJ community" or "EJ facility." EJSCREEN provides screening level indicators, not a determination of the existence or absence of EJ concerns. For more information, see the EJSCREEN home page.

Census Block Group EJ Indexes (percentile)	
Particulate Matter (PM 2.5)	87.2
Ozone NATA Diesel PM	86.4
NATA Air Toxics Cancer Risk	90.8
NATA Respiratory Hazard Index (HI)	92.5
Traffic Proximity	79.3
Lead Paint Indicator	97.4
Superfund Proximity	99.5
Risk Management Plan (RMP) Proximity	88.3
Hazardous Waste Proximity	99.8
Wastewater Discharge Proximity	76.1

Number of EJ Indexes Above 80th Percentile
9

View EJSCREEN Report

Demographic Profile of Surrounding Area (3 Miles)

This section provides demographic information regarding the community surrounding the facility. ECHO compliance data alone are not sufficient to determine whether violations at a particular facility had negative impacts on public health or the environment. Statistics are based upon the 2010 US Census and American Community Survey data, and are accurate to the extent that the facility latitude and longitude listed below are correct. The latitude and longitude are obtained from the EPA Locational Reference Table (LRT) when available.

General Statistics	
Total Persons	995,313
Population Density	37,544/sq.mi.
Percent Minority	70%
Households in Area	377,607
Housing Units in Area	413,426
Households on Public Assistance	18,887
Persons Below Poverty Level	452,376

Geography	
Radius of Selected Area	3 mi.
Center Latitude	40.70713
Center Longitude	-73.93008
Land Area	94%
Water Area	6%

Income Breakdown - Households (%)	
Less than $15,000	80,031 (21.72%)
$15,000 - $25,000	43,700 (11.86%)
$25,000 - $50,000	88,707 (24.07%)
$50,000 - $75,000	62,018 (16.83%)
Greater than $75,000	94,013 (25.51%)

Age Breakdown - Persons (%)	
Children 5 years and younger	68,181 (7%)
Minors 17 years and younger	226,167 (23%)
Adults 18 years and older	769,146 (77%)
Seniors 65 years and older	98,476 (10%)

Race Breakdown - Persons (%)	
White	417,296 (42%)
African-American	321,508 (32%)
Hispanic-Origin	307,546 (31%)
Asian/Pacific Islander	74,424 (7%)
American Indian	7,058 (1%)
Other/Multiracial	175,028 (18%)

Education Level(Persons 25 & older) - Persons (%)	
Less than 9th Grade	79,961 (12.63%)
9th through 12th Grade	79,537 (12.57%)
High School Diploma	173,863 (27.47%)
Some College/2-year	128,849 (20.36%)
B.S./B.A. (Bachelor of Science/Bachelor of Arts) or More	170,719 (26.97%)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Environmental Site Remediation Database Search Details

Site Record

Administrative Information

Site Name: Ingraham Street Sidewalk GW
Site Code: 224142
Program: State Superfund Program
Classification: P *
EPA ID Number:

Location

DEC Region: 2
Address: Ingraham Street
City: Brooklyn Zip: 11237
County: Kings
Latitude: 40.707155254
Longitude: -73.93008533
Site Type:
Estimated Size: 0 Acres

Site Owner(s) and Operator(s)

Site Description

This site began as a sidewalk groundwater study based on the results of the off-site investigation for the Popular Hand Laundry site (site No.V00170) located at 88 Ingraham Street in East Williamsburg, NY. Location: The site is located in the northern public sidewalk of Ingraham Street across from the Popular Hand Laundry VCP site between Knickerbocker Avenue and Porter Avenue in Kings County, New York. Site Features: The site includes the sidewalk/street area immediately in the vicinity of three monitoring wells placed on the sidewalk across from the Popular Hand VCP site. Current Zoning and Land Use: The site area is zoned as M1-2, which allows for light manufacturing, commercial, limited residential and certain community uses. In the immediate vicinity of the site, there are manufacturing and commercial businesses. The nearest residential area is approximately two hundred feet west of the site, along Ingraham Street. Past Use of the Site: Historical uses in the immediate vicinity of the impacted wells includes paper box manufacturing, metal works, drum storage and cleaning, and a dry cleaner. Site Geology and Hydrogeology: Soil at the site consists of historic fill mixed with silty sands

to a depth of approximately 15 feet. Soils beneath the fill layer consist of a sandy silt and silt layer with well-graded sand ranging between 15 to 32 feet below grade. The sandy silt and silt layer is underlain by a sandy silt layer. Depth to groundwater is about 15 feet below grade, and groundwater flow direction based on the latest well elevation survey was determined to be toward the north.

Contaminants of Concern (Including Materials Disposed)

Contaminant Name/Type
trichloroethene (TCE)
cis-1,2-dichloroethene
tetrachloroethene (PCE)
vinyl chloride

Site Environmental Assessment

Nature and Extent of Contamination: The primary contaminants of concern at the site include volatile organic compounds (VOCs), specifically, tetrachloroethene (PCE), trichloroethene (TCE), and associated breakdown products. These chlorinated solvents are found in soil(e.g., at the water interface and saturated zone), groundwater and soil vapor at varying concentrations. While no specific contaminant source area has been identified, historical groundwater sampling suggests that the current contaminant concentrations may have migrated from multiple sources including up-gradient Popular Hand Laundry site (site No. V00170) and are migrating north/northwest. Soil: Based upon investigations to date, soil sampling did not report contaminants of concern at levels exceeding soil cleanup objectives (SCOs) in the vadose (unsaturated) zone. Initial sampling event revealed TCE and PCE in a soil sample (34-35 ft. bgs) at 5 mg/kg (ppm) and 850 ppm, respectively. Additional investigation was conducted in the vicinity of this boring and the maximum detections vs. applicable SCOs are as follows: TCE at 0.54 ppm vs. 0.47 ppm, PCE at 3.4 ppm vs. 1.3 ppm, and Cis-1,2-Dichloroethylen (DCE) at 1.7 ppm vs. 0.25 ppm. Groundwater: PCE, TCE, DCE, and vinyl chloride (VC) contamination in groundwater were generally lower in concentration in the north (south of Johnson Avenue) and reached a maximum concentration in the southern portions of the plume (north of Ingraham Street). Groundwater sampling indicates VOCs contamination above Class GA groundwater standards. Maximum groundwater detections vs. standards are as follows: PCE at 970 parts per billion (ppb) vs. 5 ppb, TCE at 2,400 ppb vs. 5 ppb, DCE at 13,000 ppb vs. 5 ppb, and VC at 770 ppb vs. 5 ppb. Soil Vapor: Elevated levels of VOCs were detected in soil vapor. In general, the highest concentrations of PCE, TCE and DCE in soil vapor were detected on the northern sidewalk of Ingraham Street at the respective concentrations of 3,865 micrograms per cubic meter (ug/m3), 806 ug/m3 and 250 ug/m3. No indoor air samples were collected in the adjacent buildings, access was denied.

Site Health Assessment

People may come into contact with contaminated groundwater or soil if they dig below the surface. Contaminated groundwater at the site is not used for drinking or other purposes and the site is served by a public water supply that obtains its water from a different source that is not affected by this contamination. Volatile organic compounds in the groundwater and soil may move into the soil vapor (air spaces within the soil), which in turn may move into the overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Additional evaluation is needed to determine whether actions are needed to address soil vapor intrusion on and off-site.

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* **Class P Sites:** "DEC offers this information with the caution that it should not be used to form conclusions about site contamination beyond what is implied by the classification of this site, namely, that there is a potential for concern about site contamination. Information regarding a Class P site (potential Registry site) is by definition preliminary in nature and unverified because the DEC's investigation of the site is not yet complete. Due to the preliminary nature of this information, significant conclusions or decisions should not be based solely upon this summary."

For more Information: E-mail Us

Refine This Search

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Environmental Site Remediation Database Search Details

Site Record

Administrative Information

Site Name: Popular Hand Laundry
Site Code: V00170
Program: Voluntary Cleanup Program
Classification: C
EPA ID Number:

Location

DEC Region: 2
Address: 88 Ingrahm Street
City: Brooklyn Zip: 11237
County: Kings
Latitude: 40.70714666
Longitude: -73.93010688
Site Type:
Estimated Size: 0 Acres

Institutional And Engineering Controls

Control Type:
Deed Restriction

Control Elements:
Ground Water Use Restriction
Vapor Mitigation
Soil Management Plan
Cover System
Landuse Restriction
Monitoring Plan
Site Management Plan
O&M Plan
IC/EC Plan

Site Owner(s) and Operator(s)

Site Description

Location: The site is located at 88 Ingraham Street in Brooklyn, NY. Site Features: It consists of a two story building with an adjoining garage. The building comprises approximately 11,000 sq ft. and occupies the entire site. Current Zoning/Use: The site is currently used as for storage and restoration of antique furniture and artwork. The surrounding area is industrial. Historical Use: Since 1933 the building has been used for skein dying, dry cleaning and laundry operations. The site was acquired by Popular Hand Laundry (circa 1970) which operated dry cleaning services. Prior to 1970, a dry cleaning and laundry facility was operated by Klink. The site remedial program is being performed by 88 Ingraham Realty Corp. and Popular Hand Laundry and Cleaners of Richmond Hill, Inc. under the DEC's Voluntary Cleanup Program. Site Geology and Hydrogeology: Groundwater was detected at about 15 feet below grade, and measurements of groundwater elevation indicated that groundwater flow is to the north.

Contaminants of Concern (Including Materials Disposed)

Contaminant Name/Type
Hazardous Substances
tetrachloroethene (PCE)
trichloroethene (TCE)

Site Environmental Assessment

Nature and extent of contamination: Post remediation: remediation at the site is complete. prior to remediation, the primary contaminants of concern were the chlorinated solvents tetrachloroethene and trichloroethene in soil, groundwater and soil vapor. Remediation has successfully achieved soil cleanup objectives for commercial and industrial use. Remaining contamination in soil vapor is being managed under a Site Management Plan.

Site Health Assessment

Remedial actions are complete and measures are in place to control the potential for coming in contact with residual contamination remaining at the site.

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POPULAR HAND LAUNDRY (DAR SITE ID #38)

Address:	88 Ingraham Avenue, Brooklyn, New York 11237 (also known as "Popular Uniform," "Popular Uniform Rental," "Popular Uniform Rental Service," and "Popular Hand Laundry and Cleaners of Richmond Hill, Inc.")
Tax Lot Parcel(s):	Brooklyn Block 2998, Lot 19
Latitude:	40.70716
Longitude:	-73.93008
Regulatory Programs/ Numbers/Codes:	USEPA ID No. NYD020592838, AFS No. 3604700174, NYSDEC Site Code V00170, PBS No. 2-602710
Analytical Data Status:	☐ Electronic Data Available ☒ Hardcopies only ☐ No Data Available

1 SUMMARY OF CONSTITUENTS OF POTENTIAL CONCERN (COPCs) TRANSPORT PATHWAYS TO THE CREEK

The current understanding of the transport mechanisms of COPCs from the upland portions of the Popular Hand Laundry site (site) to Newtown Creek is summarized in this section and Table 1 and supported in following sections.

Overland Transport

The site is located approximately 521 feet from Newtown Creek and associated waterways. This is not a complete historical or current pathway.

Bank Erosion

The site is not adjacent to Newtown Creek or associated waterways. This is not a complete historical or current pathway.

Groundwater

Chlorinated volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals were found at elevated concentrations at the site during investigations conducted between 1996 and 2011 (Dvirka and Bartilucci Consulting Engineers 1997; Tyree Brothers

Environmental Services, Inc. 2006a, 2006b; Tyree Environmental Corp. 2008, 2011; NYSDEC 2011). Groundwater elevation measurements indicate that groundwater flow is northward (Tyree Brothers Environmental Services, Inc. 2006b; NYSDEC 2011); in the direction of English Kills. This pathway is historically complete, and there is insufficient evidence to make a current pathway determination.

Overwater Activities

This site is not adjacent to Newtown Creek or associated waterways and has no overwater activities. This is not a complete historical or current pathway.

Stormwater/Wastewater Systems

This site is within the Newtown Creek Water Pollution Control Plant (WPCP) sewershed. Stormwater and wastewater discharges from the site flow into a combined municipal sewer system. When the combined flows exceed the system's capacity, untreated combined sewer overflows (CSOs) are discharged through Outfall NC-015, which discharges into the southeast end of English Kills, a tributary to Newtown Creek (NYCDEP 2007). Site records indicate intermittent exceedances between 1992 and 1998, including two consecutive years on New York City's Significant Noncompliance List. No current or historical industrial wastewater discharge (IWD) or other permits were found in available documents. To the extent that wastewater discharges are coincident with CSO events, this pathway is potentially historically complete. There is insufficient evidence to make a current pathway determination.

Information regarding on-site stormwater infrastructure and management was not identified in files available for review. There is insufficient evidence to make a historical or current pathway determination for direct discharge of stormwater and wastewater.

Air Releases

The site is listed in the Air Facility System (AFS) as having historical violations, though the nature and extent of these violations are not specified. The AFS also indicates the site likely held an air permit; however, no historical or current permits were located in available documents. Air releases are a potentially complete historical pathway. There is insufficient evidence to make a historical or current pathway determination.

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2 PROJECT STATUS

The site is a New York State Department of Conservation (NYSDEC) Voluntary Cleanup Program (VCP) "Class A" site (i.e., a non-registry site in a remedial program where work is underway and not yet complete). The remedial program is being performed by 88 Ingraham Realty Corp. and Popular Hand Laundry and Cleaners of Richmond Hill, Inc. (NYSDEC 2011). Records indicate that the site was a Resource Conservation and Recovery Act (RCRA) hazardous waste large quantity generator (LQG) in 1985 and, most recently, a non-generator in 2007 (EDR 2010). A summary of investigation and remedial activities at the site is provided in the following table:

Activity		Date(s)/Comments
Phase 1 Environmental Site Assessment	☐	
Site Characterization	☐	
Remedial Investigation	☒	Investigations between the years 1996 and 2011 include collection of soil vapor samples, indoor air samples, subsurface soil and groundwater samples (Dvirka and Bartilucci Consulting Engineers 1997; Tyree Brothers Environmental Services, Inc. 2006a, 2006b; Tyree Environmental Corp. 2008, 2011; NYSDEC 2011).
Remedy Selection	☒	Install an air sparging groundwater remediation/soil vapor extraction system, and a groundwater monitoring system (ENB Unknown; Tyree Environmental Corp. 2008).
Remedial Design/Remedial Action Implementation	☒	Site Environmental Assessment conducted including Remedial Investigations as described above. Remediation work is underway and is not yet complete (NYSDEC 2011).
Use Restrictions (Environmental Easements or Institutional Controls)	☐	
Construction Completion	☐	
Site Closeout/No Further Action Determination	☐	

Notes:
Corp. – corporation
ENB – Environmental Notice Bulletin
NYSDEC – New York State Department of Environmental Conservation

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3 SITE OWNERSHIP HISTORY

Respondent Member: ☐ Yes ☒ No

Owner	Years	Occupant	Type of Operation
Unknown	1933 to unknown	Unknown	Skein dyeing or dry cleaning or laundry operations
Unknown	ca. 1951	Unknown	Dry cleaners
Klink	Unknown – ca. 1962	Klink	Dry cleaning and laundry facility
Lena Zimmerman	Unknown – 1972	Unknown	Unknown
88 Ingraham Realty Corp.	ca. 1970 – ca. 2005	Unknown	Unknown
William Eisen	ca. 1970 – ca. 2005	Popular Hand Laundry and Cleaners of Richmond Hill, Inc./Popular Uniform Rental	Industrial Launderer/Dry cleaning services.
Unknown	Unknown	Vacant commercial laundry facility	Unknown
Bushwicked, LLC	ca. 2005 – present	Unknown	Storage and restoration of antique furniture and artwork

Notes:
ca. – circa

4 PROPERTY DESCRIPTION

The site occupies approximately 0.17 acre[1] within the Newtown Creek WPCP sewershed.. A two-story building with an adjoining garage comprises approximately 11,000 square feet and occupies almost the entire site.

The site and surrounding area are zoned for manufacturing. An extensive network of roads and buildings surrounds the site. The area between the site and English Kills consists entirely of impervious surface area and includes two buildings, two main roads, and a paved parking lot as shown in Figure 1. Elevation levels decrease from the site towards English Kills.

[1] Acreage is an approximation of the site tax parcel using geographic information system data.

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5 CURRENT SITE USE

The site is currently used for storage and restoration of antique furniture and artwork (NYSDOS 2011).

6 SITE USE HISTORY

Prior to the 1970s, occupants of the site included a skein dyeing operation sometime around 1933, a dry cleaner operation around 1951, and Klink, a dry cleaning and laundry facility (Sanborn 1915a, 1915b; NYSDEC 2011).

88 Ingraham Realty Corporation registered in New York State as a domestic business corporation in November 1971 (NYSDOS 2011). A deed indicated 88 Ingraham Realty Corporation owned the site in 1972 (Zimmerman 1972). Records also indicate Popular Hand Laundry occupied the site sometime around 1970 and operated a dry cleaning service (NYSDEC 2011). 88 Ingraham Realty Corporation and Popular Hand Laundry and Cleaners of Richmond Hill, Inc. operated under the same chief executive officer; therefore, it is likely Popular Hand Laundry operated at the site even though it was owned by 88 Ingraham Corporation (Zimmerman 1972; NYSDOS 2011).

Popular Hand Laundry and Cleaners of Richmond Hill, Inc. merged out of the site in November 1998 (NYSDOS 2011). The site was vacant for a period of time before its current use (EBN Unknown).

7 CURRENT AND HISTORICAL AREAS OF CONCERN AND COPCs

The current understanding of the historical and current potential upland and overwater areas of concern at the site is summarized in Table 1. The following sections provide brief discussion of the potential sources and COPCs at the site requiring additional discussion.

7.1 Uplands

Potential historical and current contaminant sources at the site include equipment and products used in skein dying, dry cleaning and laundry operations (see Attachment 1), and an underground storage tank (UST). The primary COPCs for these sources include

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chlorinated VOCs (including tetrachloroethene [PCE], dichloroethylene [DCE], trichloroethene [TCE], vinyl chloride [VC], benzene, ethylbenzene, methylene chloride and total xylenes), SVOCs (including benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[k]fluoranthene, chrysene, dibenz[a,h]anthracene and naphthalene), metals (including arsenic, barium, beryllium, copper, iron, magnesium, manganese, mercury, nickel, sodium, thallium and zinc), and petroleum products (including No. 2 fuel oil).

The site was a registered petroleum bulk storage (PBS) facility (PBS No. 2-602710; NYSDEC 2011). In 1982, a 3,000-gallon steel/carbon steel UST was installed at the site (EDR 2010). Records indicate the UST historically stored No. 2 fuel oil (NYSDEC 2011). The tank was equipped with an overfill product level gauge and secondary containment (synthetic liner); however, was lacking tank leak detection, internal and external tank protection, and external pipe protection (EDR 2010). The tank was closed in January 2001 and removed in January 2002 (EDR 2010; Tyree Environmental Corp. 2011).

The site began generating hazardous waste code F002 in June 1985 (USEPA 1985). The site was classified as a RCRA hazardous waste LQG in 1985 and a non-generator between the years of 1999 and 2007 (EDR 2010). Waste manifests were on file for the site for disposal of waste code F002 (e.g., "halogentated solvents and still bottoms from the recycling of solvent") between the years of 1986 and 1990 (EDR 2010). Available RCRA documents indicate the site received one violation in March 1987 (violation type was unspecified; EDR 2010). According to records, compliance was achieved for this violation.

7.2 Overwater Activities

This site is not adjacent to Newtown Creek or associated waterways and has no overwater activities.

7.3 Spills

Reviewed records did not indicate current or historical spills.

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8 PHYSICAL SITE SETTING

8.1 Geology

Generally, soils encountered beneath the site consisted of fill material from 0 to 2 feet below land surface (bls) followed by a glacial moraine (till) consisting of clay, sand, gravel, and boulders from 2 to 13 feet bls (Dvirka and Bartilucci Consulting Engineers 1997).

Records reviewed for this summary indicate a total of 11 soil borings have been completed at the site with limited geologic information recorded. Many of the soil borings only targeted the upper 2 feet of soil encountered beneath the building slab with the remainder terminating at the water table (Dvirka and Bartilucci Consulting Engineers 1997; Tyree Brothers Environmental Services, Inc. 2006b).

8.2 Hydrogeology

Records reviewed for this summary indicate groundwater was detected beneath the site at approximately 12 to 15 feet bls (Dvirka and Bartilucci Consulting Engineers 1997; Tyree Brothers Environmental Services, Inc. 2006b). Local instances of perched water were encountered on the site; however, were limited, and measurements of groundwater elevation indicate that groundwater flow is northward, which is the direction of regional groundwater flow (Tyree Brothers Environmental Services, Inc. 2006b; NYSDEC 2011).

9 NATURE AND EXTENT (CURRENT UNDERSTANDING OF ENVIRONMENTAL CONDITIONS)

9.1 Soil

Soil Investigations	☒ Yes ☐ No
Bank Samples	☐ Yes ☐ No ☒ Not Applicable
Soil-Vapor Investigations	☒ Yes ☐ No

9.1.1 Soil Investigations

Soil investigations were conducted at the site between the years of 1996 and 2008. Soil samples were generally collected beneath the concrete slab and at other intervals above the water table. Available documents indicate approximately 23 samples were submitted and

analyzed for VOCs, SVOCs, and metals (Dvirka and Bartilucci Consulting Engineers 1997; Tyree Environmental Corp. 2008).

Five of the total 23 soil samples were collected and analyzed prior to the installation of a remediation system at the site in October 2001. Of those samples, analytes that exceeded their respective recommended soil cleanup standards are summarized in the following table:

Analyte	Units	Minimum Soil Concentration	Maximum Soil Concentration
Surface (0 to 2 feet)			
VOCs			
PCE	µg/kg	ND	11,000
SVOCs			
Benzo(a)anthracene	µg/kg	ND	3,600
Benzo(a)pyrene	µg/kg	ND	3,800
Benzo(b)fluoranthene	µg/kg	ND	2,500
Benzo(k)fluoranthene	µg/kg	ND	3,600
Chrysene	µg/kg	ND	3,800
Dibenz(a,h)anthracene	µg/kg	ND	200
Metals			
Arsenic	mg/kg	2.9	33.8
Barium	mg/kg	38.2	404
Beryllium	mg/kg	0.34	0.51
Copper	mg/kg	13.4	329
Iron	mg/kg	15,100	29,400
Mercury	mg/kg	0.33	1.7
Nickel	mg/kg	10	19.2
Zinc	mg/kg	32.4	384
Subsurface (>2 feet)			
VOCs			
DCE	µg/kg	ND	9,500
Metals			
Beryllium	mg/kg	0.68	0.68
Copper	mg/kg	34.8	34.8
Iron	mg/kg	22,900	22,900

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Analyte	Units	Minimum Soil Concentration	Maximum Soil Concentration
Mercury	mg/kg	0.73	0.73
Nickel	mg/kg	18.5	18.5
Zinc	mg/kg	73.4	73.4

Notes:
µg/kg – microgram per kilogram
DCE – dichloroethene
mg/kg – milligram per kilogram
ND – not detected
PCE – tetrachloroethene
SVOC – semi-volatile organic compound
VOC – volatile organic compound

In general, soil samples collected at the site indicated low levels of VOCs (Dvirka and Bartilucci Consulting Engineers 1997); however, two COPCs for the site, PCE and DCE, exceeded NYSDEC recommended soil cleanup objectives in both surface and subsurface samples. SVOCs and metals were also found at elevated concentrations at the site, namely iron and zinc; however, it is possible the source of these contaminants was not a result of discharges at the site, but rather characteristic of the fill material that was used to construct the building (Dvirka and Bartilucci Consulting Engineers 1997).

Surface and subsurface soil samples collected and analyzed after installation of the remediation system at the site are discussed in the remediation section of this site summary (Section 10).

9.1.2 Soil-Vapor Investigations

Soil vapor samples and indoor air samples collected at the site during investigations conducted between 1997 and 2006 found PCE, TCE, DCE, and VC at maximum concentrations of 6,104 µg/m^3 for PCE, 2,526 µg/m^3 for TCE, 2,260 µg/m^3 for DCE, and 46 µg/m^3 for VC (Tyree Environmental Corp. 2008; NYSDEC 2011). Sub-slab vapor samples indicated that elevated chlorinated solvents and petroleum products were present, and PCE concentration was detected at maximum concentrations of 572,000 µg/m^3, TCE at 45,200 µg/m^3, and total petroleum VOCs at 15,765 µg/m^3 (NYSDEC 2011).

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9.1.3 Soil Summary

Soil investigations conducted at the site prior to the installation of the remediation system indicate exceedances of NYSDEC cleanup values for VOCs, SVOCs, and metals in surface and subsurface soil. Soil-vapor investigations indicate elevated concentrations of chlorinated solvents and petroleum products were also present at the site.

9.2 Groundwater

Groundwater Investigations	☒ Yes ☐ No
NAPL Presence (Historical and Current)	☐ Yes ☒ No
Dissolved COPC Plumes	☒ Yes ☐ No
Visual Seep Sample Data	☐ Yes ☐ No ☒ Not Applicable

9.2.1 Groundwater Investigations

Groundwater investigations were conducted at the site between the years of 1996 and 2011. Groundwater samples were collected from monitoring wells screened across and below the water table. Available documents indicate approximately 38 samples have been collected and analyzed for VOCs, SVOCs, and metals (Dvirka and Bartilucci Consulting Engineers 1997; Tyree Brothers Environmental Services, Inc. 2006a; Tyree Environmental Corp. 2008, 2011).

Nine of the total 38 groundwater samples were collected and analyzed prior to the installation of a remediation system at the site in October 2001. Of those samples, analytes that exceeded their respective recommended groundwater cleanup standards are summarized in the following table:

Analyte	Units	Minimum Groundwater Concentration	Maximum Groundwater Concentration
VOCs			
DCE	ppb	ND	5,500
Benzene	ppb	ND	2
Ethylbenzene	ppb	ND	11
Methylene Chloride	ppb	ND	7

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Analyte	Units	Minimum Groundwater Concentration	Maximum Groundwater Concentration
PCE	ppb	ND	550
Total Xylenes	ppb	ND	30
TCE	ppb	ND	470
VC	ppb	ND	460
SVOCs			
Naphthalene	ppb	ND	12
Metals[1]			
Iron	ppb	155	4,120
Magnesium	ppb	24,400	51,300
Manganese	ppb	862	7,830
Sodium	ppb	62,500	150,000
Thallium	ppb	ND	14.9

Notes:
1 – Filtered samples only.
DCE – dichloroethylene
PCE – tetrachloroethene
ppb – part per billion
ND – not detected
SVOCs – semi-volatile organic compound
TCE – trichloroethene
VC – vinyl chloride
VOC – volatile organic compound

Groundwater samples collected at the site indicate historically elevated concentrations of VOCs, SVOCs, and metals. Primary COPCs for the site (i.e., DCE, PCE, TCE and VC) exceeded their NYSDEC groundwater standards of 5 ppb, 5 ppb, 5 ppb, and 2 ppb; respectively (Dvirka and Bartilucci Consulting Engineers 1997; Tyree Environmental Corp. 2008).

Groundwater samples collected and analyzed after installation of the remediation system at the site are discussed in the remediation section of this site summary (see Section 10).

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9.2.2 Groundwater Summary

Groundwater investigations conducted at the site prior to the installation of the remediation system indicate exceedances of NYSDEC cleanup values for chlorinated VOCs and metals in groundwater.

9.3 Surface Water

Surface Water Investigation	☐ Yes	☒ No
SPDES Permit (Current or Past)	☐ Yes	☒ No
Industrial Wastewater Discharge Permit (Current or Past)	☒ Yes	☐ No
Stormwater Data	☐ Yes	☒ No
Catch Basin Solids Data	☐ Yes	☒ No
Wastewater Data	☒ Yes	☐ No

9.3.1 Stormwater and Wastewater Systems

Information regarding on-site stormwater infrastructure and management was not identified in documents available for review. This site is within the Newtown Creek Water WPCP sewershed. Stormwater and wastewater discharges from the site flow into a combined municipal sewer system. When the combined flows exceed the system's capacity, untreated CSOs are discharged through Outfall NC-015, which discharges into the southeast end of English Kills, a tributary to Newtown Creek (NYCDEP 2007).

9.3.2 Industrial Wastewater Discharge Permit

An Industrial Pretreatment Program Progress Report indicated that P-Case No. 1448 (Popular Uniform Rental Service) was issued a permit effective May 31, 1995 (NYCDEP 1996). However, no current or historical IWD or other permits were found in available documents.

Industrial Pretreatment Program Progress Reports indicate the site was classified a Tier II P-Case with directives (P-Case No. 1448) site between the years of 1992 and 1994 (NYCDEP 1992, 1993a, 1993b, 1994a). That is, the site was not subject to categorical standards (i.e., a non-significant industrial user [SIU]) and did not discharge more than

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25,000 gallons a day of process wastewater to a public sewer. However, the site was still monitored and regulated by the Industrial Wastes Control Section (IWCS) of the New York City Department of Environmental Protection (NYCDEP) Bureau of Clean Water and by the Industrial Pretreatment Program (NYCDEP 1992). "Directives"[2] were control documents requiring P-Case establishments to self-monitor their process wastewater periodically (NYCDEP 1992). Monitoring results for the years 1992 and 1993 show no exceedances at the site (NYCDEP 1992, 1993a). No data were found for 1994. The site was also listed as a Tier II P-Case in 1995 (NYCDEP 1995); no directives were specified and no exceedances for the year 1995 were found in available documents (NYCDEP 1996).

The site was re-classified as a SIU between the years of 1996 and 1998 (NYCDEP 1996, 1997, 1998). A SIU site is one whose operations involve processes that are subject to a nationwide categorical standard. SIU sites are also monitored more rigorously than non-SIU sites. Monitoring results for the years 1996 and 1998 showed no exceedences at the site (NYCDEP 1996, 1998). A 1997 report identified the site as receiving a violation(s) between January 1, 1996, and December 31, 1996, either for discharge exceedances or for late reporting (the specific nature and extent of the violation(s) was not reported in available documents; NYCDEP 1997).

In 2000, the site was reclassified back to a non-SIU (NYCDEP 2000), and in 2001 reclassified from a P-Case to a Z-Case (i.e., the site either went out of business or terminated the process of concern; NYCDEP 2001).

The site was listed on New York City's Significant Noncompliance[3] List for two consecutive years; during the periods of July 1, 1992, to June 30, 1993, and July 1, 1993, to June 30, 1994, (NYCDEP 1994a, 1995). The site was found to be in "significant noncompliance with applicable pretreatment standards and other requirements" as published by NYCDEP in accordance with Title 40 Part 403.8(f)(2) (vii) of the Code of Federal Regulations and Title 15, Section 19-10 (g) of the Rules of the City of New York (NYCDEP 1994a, 1995).

[2] The July 1990 General Pretreatment Regulation amendments, specifying 5-year control documents, transformed "directives" essentially into permits (NYCDEP 1992).
[3] Significant noncompliance is defined in 40 CFR 403.8 (f) (2) (vii) (NYCDEP 1994, 1995).

9.3.3 Wastewater Data

Minimal wastewater data were reported in Industrial Pretreatment Program Progress Reports (NYCDEP 1992, 1993a, 1996, 1997, 1998). The only noted exceedances reported did not include details of the nature or extent of the exceedances.

9.3.4 Surface Water Summary

No information on stormwater infrastructure at the site was available. This site is within the Newtown Creek WPCP sewershed. According to City records, stormwater and wastewater discharges from the site flow into a combined municipal sewer system. When the combined flows exceed the system's capacity, untreated CSOs are discharged through Outfall NC-015, which discharges into the southeast end of English Kills, a tributary to Newtown Creek. Records indicate the site was issued an IWD permit; however, no permits were found in available documents. Industrial Pretreatment Program Progress Reports indicate the site's intermittent classifications as a SIU and non-SIU site between the years of 1992 and 2001. The site has historical violations on file; however, the nature and extent of these violations are unknown. The site was found in 1992 to be in significant noncompliance with applicable pretreatment standards and other requirements.

9.4 Sediment

Creek Sediment Data ☐ Yes ☐ No ☒ Not Applicable

Sediment investigation information was not found in reviewed documents.

9.5 Air

Air Permit ☐ Yes ☒ No

Air Data ☐ Yes ☒ No

9.5.1 Air Permit

The site is listed in the AFS (AFS No. 3604700174) database as being monitored for carbon monoxide (CO), nitrogen oxides (NO_x), particulate matter (PM), sulfur dioxide (SO_2), VOCs, and "facility-wide permit requirements" (USEPA 2011). This suggests that an air permit

exists for the site; however, no historical or current air permits were found in available documents. The AFS database also indicates that the site was in violation in June 1994 and January 2006. Violation types were unspecified (USEPA 2011).

10 REMEDIATION HISTORY (INTERIM REMEDIAL MEASURES AND OTHER CLEANUPS)

Site assessments and VCP activities for the site have been conducted since December 1996. In October 2001, Miller Environmental Group installed a Soil Vapor Extraction (SVE) and Air Sparging (AS) remedial system. The SVE system was maintained by Miller Environmental Group until October 21, 2004. Miller Environmental Group also removed a 3000-gallon UST heating oil tank on January 17, 2002 (Tyree Environmental Corp. 2011).

During a site visit on June 1, 2005, Tyree Environmental Corp. inspected the existing remediation system and found it operating; however, with questionable efficiency because it appeared necessary system maintenance had not been performed (Tyree Brothers Environmental Services, Inc. 2006a).

On December 14 and 15, 2005, Tyree Environmental Corp. conducted a comprehensive subsurface investigation. Six sampling points were installed at varying depths and 18 soil samples and 6 groundwater samples were collected (Tyree Environmental Corp. 2011). Based on the results, the soil samples from 0 to 4 feet below grade (2 total) still exceeded NYSDEC soil cleanup objectives (Tyree Environmental Corp. 2011). Contaminant levels of compounds in the soil in the remaining 16 soil samples were either not detected in the samples or were found at levels below NYSDEC soil cleanup objectives (i.e., soil samples obtained below the depth of 4 feet met NYSDEC soil cleanup objectives). Groundwater samples collected exceeded NYSDEC groundwater standards at the three sampling locations (Tyree Environmental Corp. 2011). Exceedances of NYSDEC cleanup levels are summarized in the following table:

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Analyte	Units	Minimum Concentration	Maximum Concentration	NYSDEC Standard
Soil (0 to 4 feet)				
VOCs				
PCE	µg/kg	10	19,400	1,400
Groundwater				
VOCs				
DCE	ppb	47 (14 to 18 feet)	260 (16 to 20 feet)	5
TCE	ppb	5 (26 to 30 feet; 36 to 40 feet)	28 (16 to 20 feet)	5
VC	ppb	2 (24 to 28 feet)	3 (16 to 20 feet)	2

Notes:
µg/kg – microgram per kilogram
DCE – dichloroethylene
NYSDEC – New York State Department of Environmental Conservation
PCE – tetrachloroethene
ppb – parts per billion
TCE- - trichloroethene
VC – vinyl chloride
VOCs – volatile organic compound

Elevated levels of VOC contamination in the soil directly beneath the concrete floor suggest the potential for indoor air quality issues should these compounds volatilize into the interior air space of the building (Tyree Brothers Environmental Services, Inc. 2006a).

As shown in the following table, a comparison of the perched groundwater sampling data to the groundwater data compiled by Dvirka and Bartilucci Consulting Engineers in December 1996 revealed a marked reduction in the levels of VOCs at similar sampling points under the building footprint over the approximate eight year period (Tyree Brothers Environmental Services, Inc. 2006a).

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Analyte	Units	1996		June 2005		December 2005	
		Min	Max	Min	Max	Min	Max
Groundwater							
VOCs							
DCE	ppb	ND	5,500	0.2	14.2	47	260
PCE	ppb	ND	87	0.16	5.19	---	---
TCE	ppb	ND	300	---	---	5	28
VC	ppb	ND	440	---	---	0.38	3

Notes:
--- – no exceedance reported
DCE – dichloroethylene
PCE – tetrachloroethene
ppb – parts per billion
ND – not detected
ppb – parts per billion
TCE- - trichloroethene
VC – vinyl chloride

The levels of VOCs in the system wells reported in June 2005 compared with those reported beneath the building in December 2005; however, indicate the radius of influence (ROI) of the existing remediation system limits the system's ability to further reduce the levels of VOCs in the perched groundwater under the building footprint (see Attachment 2; Tyree Brothers Environmental Services, Inc. 2006a).

The AS/SVE system installation was completed in October 2009 and initially started in May 2010 (Tyree Environmental Corp. 2011).

In February 2011, Tyree Environmental Corp. collected 18 groundwater samples at the site with results indicating an overall decrease in contaminant concentrations in all wells, with the exception of one location that contained increased concentrations of breakdown compounds. NYSDEC groundwater standard exceedances were still present for key COPCs, including DCE, PCE, TCE, and VC.

Based upon the data obtained, the system is removing approximately 0.011 pounds per day of VOCs (Tyree Environmental Corp. 2011). Remediation is still ongoing at the site (NYSDEC 2011).

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12 ATTACHMENTS

Figures

Figure 1 Site Vicinity Map: Popular Hand Laundry

Tables

Table 1 Potential Areas of Concern and Transport Pathways Assessment

Attachments

Attachment 1 Site Layout and 1997 Sampling Locations

Attachment 2 Location of Remediation and Monitoring Systems

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Table 1

Potential Areas of Concern and Transport Pathways Assessment – Popular Hand Laundry

Potential Areas of Concern	Media Impacted					COPCs														Potential Complete Pathway						
						TPH			VOCs																		
Description of Areas of Concern	Surface Soil	Subsurface Soil	Groundwater	Catch Basin Solids	Creek Sediment	Gasoline-Range	Diesel – Range	Heavier – Range	Petroleum Related (e.g., BTEX)	VOCs	Chlorinated VOCs	SVOCs	PAHs	Phthalates	Phenolics	Metals	PCBs	Herbicides and Pesticides	Dioxins/Furans	Overland Transport	Groundwater	Direct Discharge – Overwater	Direct Discharge – Storm/Wastewater	Discharge to Sewer/CSO	Bank Erosion	Air Releases
Industrial dry cleaning processes and operations	√	√	√	?	?	?	?	?	?	√	√	√	?	?	?	√	?	?	?	--	√	--	?	√	--	√
Skein dyeing processes and operations	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	--	?	--	?	√	--	?
UST	?	?	?	?	?	?	√	?	?	?	?	?	?	?	?	?	?	?	?	--	?	--	?	?	--	?

Notes:
√ – COPCs are/were present in areas of concern having a current or historical pathway that is determined to be complete or potentially complete.
? – There is not enough information to determine if COPC is/was present in area of concern or if pathway is complete.
-- – Current or historical pathway has been investigated and shown to be not present or incomplete.

BTEX – benzene, toluene, ethylbenzene, and xylene
COPC – constituent of potential concern
CSO – combined sewer overflow
PAH – polycyclic aromatic hydrocarbon
PCB – polychlorinated biphenyl
SVOC – semi-volatile organic compound
TPH – total petroleum hydrocarbon
UST – underground storage tank
VOC – volatile organic compound

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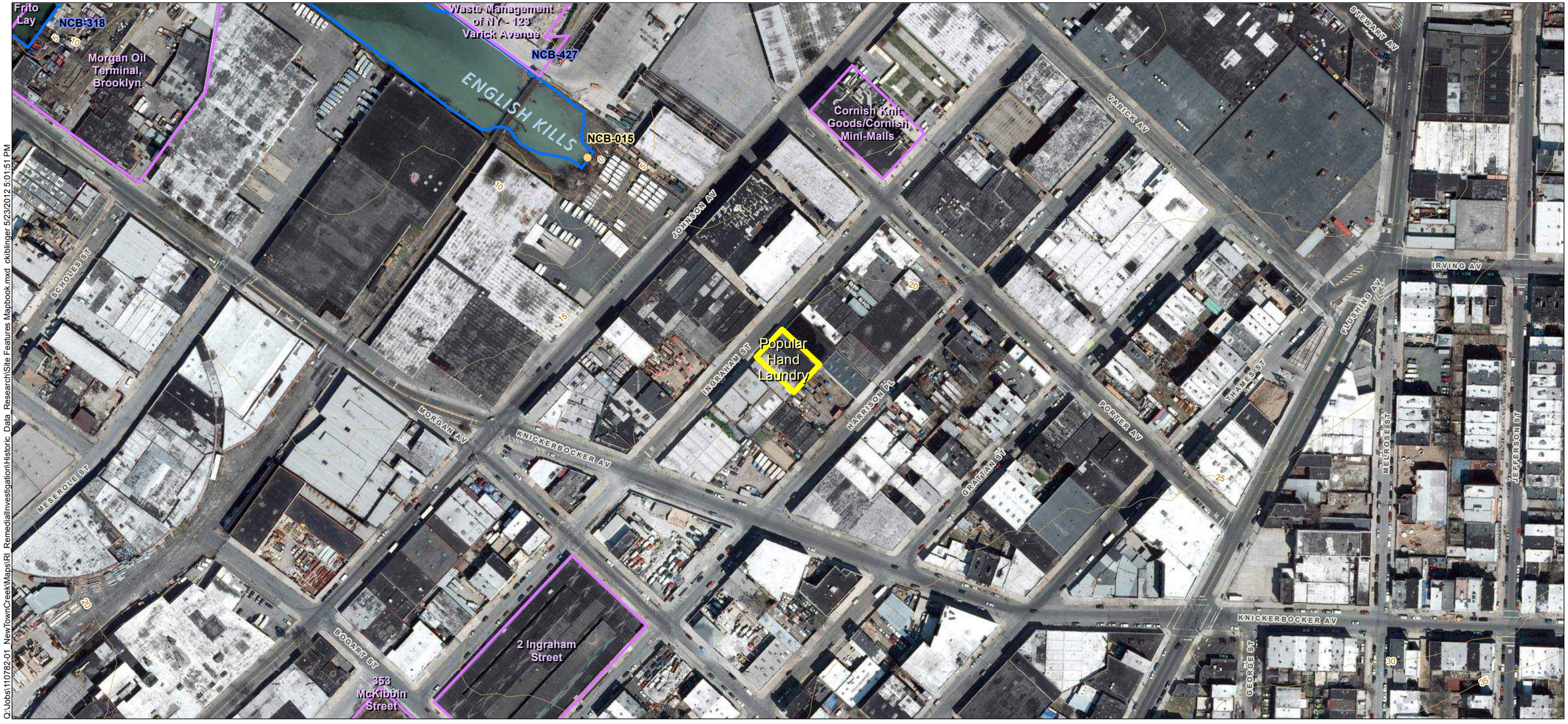

Q:\Jobs\110782-01_NewTownCreek\Maps\RI_RemedialInvestigation\Historic_Data_Research\Site Features Mapbook.mxd ckiblinger 5/23/2012 5:01:51 PM

- USEPA Sample Locations (Surface and Subsurface)
- Shoreline (NYC Dept. of Information Technology, 2006)
- USGS Nat'l Elev. Dataset 5-foot Contours
- Selected Site Property Boundary
- Neighboring Site Property Boundary

Outfall Class

- Direct Discharge
- General
- Highway Drain
- Major Stormwater Outfall
- SPDES
- Storm Drain

NOTES:

1. Outfall Labeling: BB: Bowery Bay; NC(B/Q): Newtown Creek, Brooklyn/Queens; ST: Stormwater.
2. Outfall locations are preliminary, compiled, estimated data based on New York City Department of Environmental Protection (NYCDEP) maps and tabulated data and other resources. Many outfall locations were taken from the New York City Shoreline Survey Program: Newtown Creek Water Pollution Control Plant Drainage Area, NYCDEP, March 31, 2003. Other locations were taken from an excerpt from a similar report from 2008 (the complete report was not included in files available for review). Finally, some outfall locations were inherited from previous Anchor QEA and Newtown Creek Project work. Latitudinal and longitudinal data provided in the 2003 and 2008 NYCDEP reports were rounded to the nearest second. This resulted in potential outfall location discrepancies of up to approximately 200 feet. All outfall locations are currently under field verification.
3. Aerial Photos: New York State Division of Homeland Security and Emergency Services, 2010.
4. Site Boundaries are based on New York City parcels data.
5. Coarse topographic contours are derived from U.S. Geological Survey 10-meter data.

ANCHOR QEA

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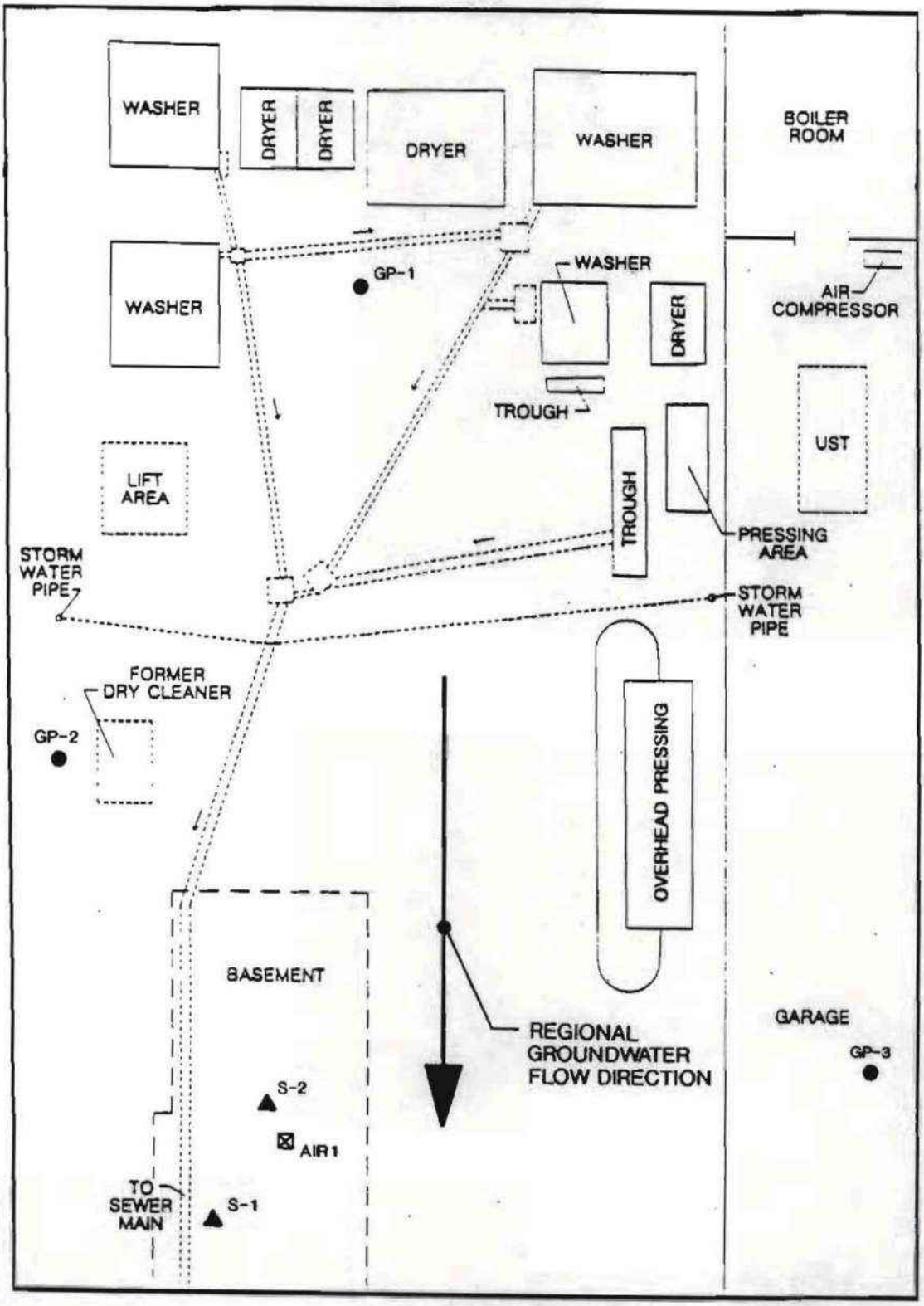
Figure 1
Site Vicinty Map
Draft Upland Site Summary: Popular Hand Laundry
Newtown Creek RI/FS

SUPPLEMENTAL ATTACHMENTS

Attachment 1



LEGEND:

- ● GEOPROBE SOIL AND GROUNDWATER SAMPLING LOCATION AND NUMBER
- ○ GEOPROBE GROUNDWATER SAMPLING LOCATION AND NUMBER
- ▲ SOIL SAMPLING LOCATION AND NUMBER
- ⊠ AMBIENT AIR SAMPLING LOCATION AND NUMBER

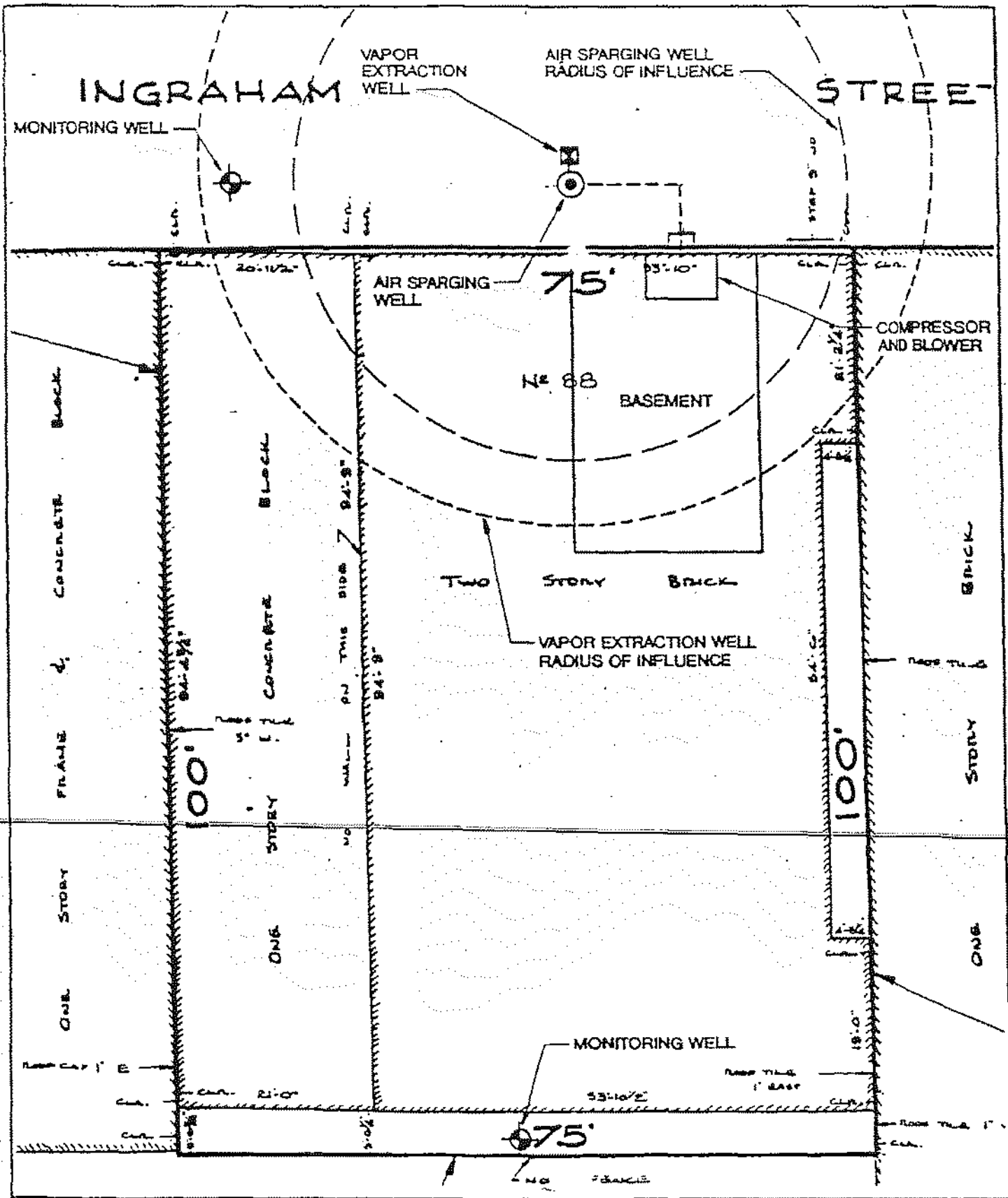
NOTE: Not to Scale

Dvirka and Bartilucci Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

SITE LAYOUT AND SAMPLING LOCATIONS
POPULAR HAND LAUNDRY
BROOKLYN, NEW YORK

Figure 1

Attachment 2



LOCATION OF REMEDIATION AND MONITORING SYSTEMS

Dvirka and Bartilucci Consulting Engineers
A Division of William F. Cosulich Associates, P.C.

FIGURE 1

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Bulk Storage Database Search Details

Tank Information

Site No: 2-602710
Site Name: POPULAR UNIFORM
Tank No: 1
Tank Location: Underground including vaulted with no access for inspection
Subpart:
Category: 1
Tank Status: Closed - In Place
Tank Install Date: 12/01/1982
Tank Closed Date: 11/01/2001
Tank Out Of Service Date:

Tank Capacity: 3000 gal.
Product Stored: #2 fuel oil (on-site consumption)
Percentage: 100%
Tank Type: 01 - Steel/Carbon Steel/Iron
Tank Internal Protection: None
Tank External Protection: None
Tank Secondary Containment: Impervious Underlayment
Tank Leak Detection: None
Overfill: Product Level Gauge (A/G)
Spill Prevention: None
Dispenser: Suction Dispenser

Pipe Location: Underground/On-ground
Pipe Type: Steel/Carbon Steel/Iron
Pipe External Protection: None
Piping Secondary Containment: None
Piping Leak Detection: None
UDC: Yes

Tank Next Test Due:
Tank Last Test: 01/01/1997
Tank Test Method: USTest 2000/P/LL plus USTest 2000/U

Line Next Test Due:
Line Last Test:
Line Test Method:

Refine This Search

Return To Facility

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Bulk Storage Database Search Details

Facility Information

Site No.: 2-602710
Status: Unregulated/Closed
Expiration Date: 06/11/2001
Site Type: PBS
Facility Type: Other
Site Name: POPULAR UNIFORM
Address: 88 INGRAHAM STREET
Locality: BROOKLYN
State: NY
Zipcode: 11237
County: Kings

Facility(Property) Owner(s) Information

Facility Owner: POPULAR HAND LAUNDRY AND CLEANERS OF RICHMOND HILL
88 INGRAHAM STREET . BROOKLYN , NY. 11237
Mail Contact: POPULAR HAND LAUNDRY AND CLEANERS OF RICHMOND HILL
88 INGRAHAM STREET . BROOKLYN , NY. 11237

Facility Operator

Facility Operator: POPULAR UNIFORM

Tank Information

1 Tanks Found

Tank No	Tank Location	Status	Capacity (Gal.)
1	Underground including vaulted with no access for inspection	Closed - In Place	3000

Refine This Search

NEW YORK STATE | Department of Environmental Conservation

FACT SHEET

Voluntary Cleanup Program

Popular Hand Laundry
88 Ingraham Street
Brooklyn, NY 11237

SITE No. V00170
NYSDEC REGION 2

December 2017

NYSDEC Certifies Cleanup Requirements Achieved at Voluntary Cleanup Site

The New York State Department of Environmental Conservation (NYSDEC) has determined that the cleanup requirements to address contamination related to Popular Hand Laundry (the "site") located at 88 Ingraham Street, Brooklyn, NY under New York State's Voluntary Cleanup Program (VCP) have been met. Please see the map for the site location.

The cleanup activities were performed by 88 Ingraham Realty Corp. and Popular Hand Laundry and Cleaners of Richmond Hill, Inc. (collectively, the "Volunteer") with oversight provided by NYSDEC. NYSDEC has issued a release letter to the Volunteer regarding the site. Copies of the release letter and Final Engineering Report (FER), which documents the completion of the site remedy, are available at the location(s) identified under "Where to Find Information."

Completion of the Project: The following activities have been completed to achieve the remedial action objectives:

- Installation, operation and maintenance of Air Sparge (AS)/Soil Vapor Extraction (SVE) to address contamination in soil and groundwater beneath the site;
- Installation and operation of a sub-slab depressurization system (SSDS) following termination of the AS/SVE system operations to prevent migration of contaminated vapor into the on-site building;
- Maintenance of a site cover system consisting of the concrete floor slab;
- Publication of a Site Management Plan (SMP) for long-term management of residual contamination as required by the Declaration of Covenants and Restrictions, including plans for: (1) Institutional and Engineering Controls (IC/ECs); (2) monitoring; (3) operation and maintenance; and (4) reporting; and
- Recording of a Deed Restriction, documenting required IC/ECs, to prevent future exposure to any residual contamination remaining at the site and to ensure implementation of the SMP.

Final Engineering Report Approved: NYSDEC has approved the FER, which:

- Describes the cleanup activities completed.
- Certifies that cleanup requirements have been achieved for the site.
- Describes any ICs/ECs to be used. An institutional control is a non-physical restriction on use of the site, such as a deed restriction, when contamination left over after the cleanup action makes the site suitable for some, but not all uses. An engineering control is a physical barrier or method to manage contamination such as a surface cap or vapor barrier.
- Certifies that an SMP for any engineering controls used at the site has been approved by NYSDEC.

Next Steps: With receipt of a release letter, the Volunteer has no liability to the State for contamination at or coming from the site, subject to certain conditions. A release letter may be modified or revoked if, for example, there is a failure to comply with the terms of the order or agreement with NYSDEC.

Where to Find Information:
Project documents are available at the following location(s) to help the public stay informed.

NYSDEC, Region 2 Office
47-40 21st Street
Long Island City, NY 11101
Call in advance: (718) 482-4900

Who to Contact:
Comments and questions are always welcome and should be directed as follows:

Project-Related Questions:
Bryan Wong, Project Manager
NYSDEC, Region 2 Office
47-40 21st Street
Long Island City, NY 11101
(718) 482-4905
yukyin.wong@dec.ny.gov

Health-Related Questions:
Stephen Lawrence
NYSDOH
Empire State Plaza
Corning Tower Room 1787
Albany, NY 12237
(518) 402-7860
beei@health.ny.gov

For additional information on the New York's Voluntary Cleanup Program, visit:
www.dec.ny.gov/chemical/8442.html

VOLUNTARY CLEANUP PROGRAM

Site Description and Background: The 0.2-acre site is located on Ingraham Street in Brooklyn, New York and is identified as Section 10, Block 2998 and Lot 19 on the City of New York Tax map. The site is located in a generally industrial neighborhood bounded by Ingraham Street to the north, a commercial property to the south, a commercial property to the east, and a commercial property to the west. The site was formerly occupied by a commercial dry cleaning business. Investigations at the site undertaken prior to the remediation identified chlorinated volatile organic compounds (including the dry cleaning solvent tetrachloroethylene) in soil, groundwater and soil vapor at the site.

Additional site details, including environmental and health assessment summaries, are available on NYSDEC's Environmental Site Remediation Database (by entering the Site ID, V00170) at:

http://www.dec.ny.gov/cfmx/extapps/derexternal/index.cfm?pageid=3

Voluntary Cleanup Program: New York's Voluntary Cleanup Program (VCP) to address the environmental, legal and financial barriers that often hinder the redevelopment and reuse of contaminated properties. The Voluntary Cleanup program was developed to enhance private sector cleanup of brownfields by enabling parties to remediate sites using private rather than public funds and to reduce the development pressures on “greenfield” Site.

For more information about the VCP, visit:

http://www.dec.ny.gov/chemical/8442.html

We encourage you to share this fact sheet with neighbors and tenants, and/or post this fact sheet in a prominent area of your building for others to see.

Receive Site Fact Sheets by Email

Have site information such as this fact sheet sent right to your email inbox. NYSDEC invites you to sign up with one or more contaminated sites county email listservs available at the following web page:

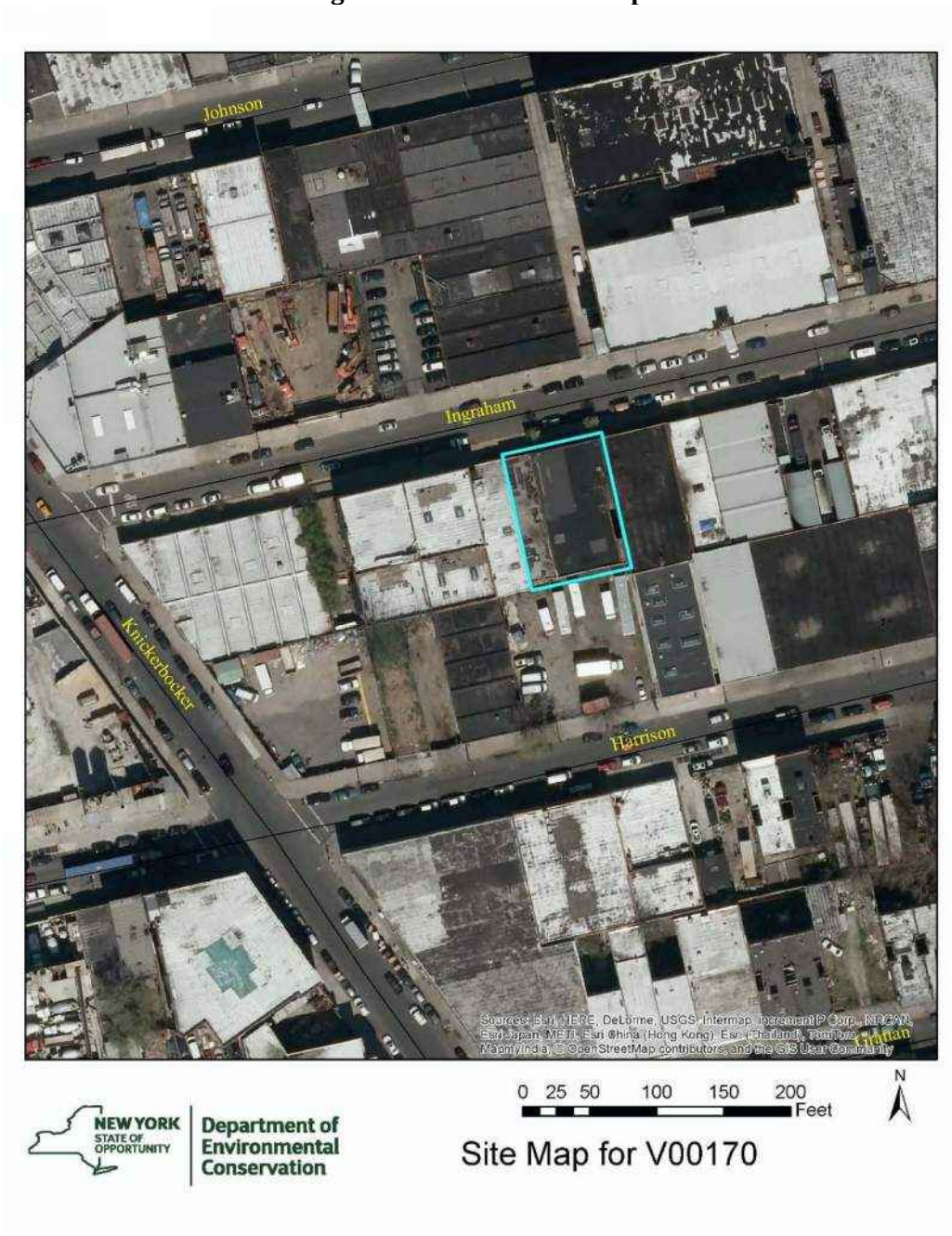
www.dec.ny.gov/chemical/61092.html

It’s quick, it’s free, and it will help keep you better informed. As a listserv member, you will periodically receive site-related information/ announcements for all contaminated sites in the county(ies) you select.

Note: Please disregard if you already have signed up and received this fact sheet electronically.

VOLUNTARY CLEANUP PROGRAM

Figure 1 – Site Location Map



Detailed Facility Report

Facility Summary

88 INGRAHAM REALTY CORP
88 INGRAHAM ST, BROOKLYN, NY 11206

FRS (Facility Registry Service) ID: 110043772708
EPA Region: 02
Latitude: 40.70735
Longitude: -73.93023
Locational Data Source: FRS
Industry:
Indian Country: N

Enforcement and Compliance Summary

Statute	RCRA
Insp (5 Years)	--
Date of Last Inspection	--
Current Compliance Status	No Violation Identified
Qtrs with NC (of 12)	0
Qtrs with Significant Violation	0
Informal Enforcement Actions (5 years)	--
Formal Enforcement Actions (5 years)	--
Penalties from Formal Enforcement Actions (5 years)	--
EPA Cases (5 years)	--
Penalties from EPA Cases (5 years)	--

Regulatory Information

Clean Air Act (CAA): No Information
Clean Water Act (CWA): No Information
Resource Conservation and Recovery Act (RCRA): Active (H) SQG (NYD020592838)
Safe Drinking Water Act (SDWA): No Information

Other Regulatory Reports

Air Emissions Inventory (EIS): No Information
Greenhouse Gas Emissions (eGGRT): No Information
Toxic Releases (TRI): No Information
Compliance and Emissions Data Reporting Interface (CEDRI): No Information

Known Data Problems

Facility/System Characteristics

Facility/System Characteristics

System	Statute	Identifier	Universe	Status	Areas	Permit Expiration Date	Indian Country	Latitude	Longitude
FRS		110043772708					N	40.70735	-73.93023
RCRAInfo	RCRA	NYD020592838	SQG	Active (H)			N	40.707324	-73.930301

Facility Address

System	Statute	Identifier	Facility Name	Facility Address
FRS		110043772708	88 INGRAHAM REALTY CORP	88 INGRAHAM ST, BROOKLYN, NY 11206
RCRAInfo	RCRA	NYD020592838	88 INGRAHAM REALTY CORP	88 INGRAHAM ST, BROOKLYN, NY 11206

Facility SIC (Standard Industrial Classification) Codes

System	Identifier	SIC Code	SIC Description
No data records returned			

Facility NAICS (North American Industry Classification System) Codes

System	Identifier	NAICS Code	NAICS Description
RCRAInfo	NYD020592838	23899	All Other Specialty Trade Contractors

Facility Tribe Information

Reservation Name	Tribe Name	EPA Tribal ID	Distance to Tribe (miles)
No data records returned			

Enforcement and Compliance

Compliance Monitoring History (5 years)

Statute	Source ID	System	Compliance Monitoring Type	Lead Agency	Date	Finding (if applicable)
No data records returned						

Entries in italics are not counted in EPA compliance monitoring strategies or annual results.

Compliance Summary Data

Statute	Source ID	Current SNC (Significant Noncompliance)/HPV (High Priority Violation)	Current As Of	Qtrs with NC (Noncompliance) (of 12)	Data Last Refreshed
RCRA	NYD020592838	No	06/22/2019	0	06/21/2019

Three-Year Compliance History by Quarter

Statute	Program/Pollutant/Violation Type	QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11	QTR 12+
RCRA (Source ID: NYD020592838)		07/01-09/30/16	10/01-12/31/16	01/01-03/31/17	04/01-06/30/17	07/01-09/30/17	10/01-12/31/17	01/01-03/31/18	04/01-06/30/18	07/01-09/30/18	10/01-12/31/18	01/01-03/31/19	04/01-06/30/19

Statute	Program/Pollutant/Violation Type	QTR 1	QTR 2	QTR 3	QTR 4	QTR 5	QTR 6	QTR 7	QTR 8	QTR 9	QTR 10	QTR 11	QTR 12+
	Facility-Level Status	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**	**No Violation Identified**

Informal Enforcement Actions (5 Years)

Statute	System	Source ID	Type of Action	Lead Agency	Date
No data records returned					

Formal Enforcement Actions (5 Years)

Statute	System	Law/Section	Source ID	Action Type	Case No.	Lead Agency	Case Name	Issued/Filed Date	Settlements/Actions	Settlement/Action Date	Federal Penalty	State/Local Penalty	SEP Cost	Comp Action Cost
No data records returned														

Environmental Conditions

Water Quality

Permit ID	Combined Sewer System?	Number of CSO (Combined Sewer Overflow) Outfalls	12-Digit WBD (Watershed Boundary Dataset) HUC (RAD (Reach Address Database))	WBD (Watershed Boundary Dataset) Subwatershed Name (RAD (Reach Address Database))	State Waterbody Name (ICIS (Integrated Compliance Information System))	Impaired Waters	Impaired Class	Causes of Impairment(s) by Group(s)	Watershed with ESA (Endangered Species Act)-listed Aquatic Species?
No data records returned									

Waterbody Designated Uses

Reach Code	Waterbody Name	Exceptional Use	Recreational Use	Aquatic Life Use	Shellfish Use	Beach Closure Within Last Year	Beach Closure Within Last Two Years
No data records returned							

Air Quality

Nonattainment Area?	Pollutant(s)	Applicable Nonattainment Standard(s)
Yes	Ozone	8-Hour Ozone (1997), 8-Hour Ozone (2008), 8-Hour Ozone (2015)
No	Lead	
Yes	Particulate Matter	PM-2.5 (1997), PM-2.5 (2006)
Yes	Carbon Monoxide	Carbon Monoxide (1971)
No	Nitrogen Dioxide	
No	Sulfur Dioxide	

Pollutants

Toxics Release Inventory History of Reported Chemicals Released in Pounds per Year at Site

TRI Facility ID	Year	Total Air Emissions	Surface Water Discharges	Off-Site Transfers to POTWs (Publicly Owned Treatment Works)	Underground Injections	Releases to Land	Total On-site Releases	Total Off-site Releases
No data records returned								

Toxics Release Inventory Total Releases and Transfers in Pounds by Chemical and Year

Chemical Name
No data records returned

Demographic Profile

EJSCREEN EJ Indexes

Eleven primary environmental justice (EJ) indexes of EJSCREEN, EPA's screening tool for EJ concerns. EPA uses these indexes to identify geographic areas that may warrant further consideration or analysis for potential EJ concerns. Note that use of these indexes does not designate an area as an "EJ community" or "EJ facility." EJSCREEN provides screening level indicators, not a determination of the existence or absence of EJ concerns. For more information, see the EJSCREEN home page.

Census Block Group EJ Indexes (percentile)	
Particulate Matter (PM 2.5)	87.2
Ozone NATA Diesel PM	86.4
NATA Air Toxics Cancer Risk	90.8
NATA Respiratory Hazard Index (HI)	92.5
Traffic Proximity	79.3
Lead Paint Indicator	97.4
Superfund Proximity	99.5
Risk Management Plan (RMP) Proximity	88.3
Hazardous Waste Proximity	99.8
Wastewater Discharge Proximity	76.1

Number of EJ Indexes Above 80th Percentile
9

View EJSCREEN Report

Demographic Profile of Surrounding Area (3 Miles)

This section provides demographic information regarding the community surrounding the facility. ECHO compliance data alone are not sufficient to determine whether violations at a particular facility had negative impacts on public health or the environment. Statistics are based upon the 2010 US Census and American Community Survey data, and are accurate to the extent that the facility latitude and longitude listed below are correct. The latitude and longitude are obtained from the EPA Locational Reference Table (LRT) when available.

General Statistics	
Total Persons	995,313
Population Density	37,544/sq.mi.
Percent Minority	70%
Households in Area	377,607
Housing Units in Area	413,426
Households on Public Assistance	18,887
Persons Below Poverty Level	452,376

Geography	
Radius of Selected Area	3 mi.
Center Latitude	40.70713
Center Longitude	-73.93008
Land Area	94%
Water Area	6%

Income Breakdown - Households (%)	
Less than $15,000	80,031 (21.72%)
$15,000 - $25,000	43,700 (11.86%)
$25,000 - $50,000	88,707 (24.07%)
$50,000 - $75,000	62,018 (16.83%)
Greater than $75,000	94,013 (25.51%)

Age Breakdown - Persons (%)	
Children 5 years and younger	68,181 (7%)
Minors 17 years and younger	226,167 (23%)
Adults 18 years and older	769,146 (77%)
Seniors 65 years and older	98,476 (10%)

Race Breakdown - Persons (%)	
White	417,296 (42%)
African-American	321,508 (32%)
Hispanic-Origin	307,546 (31%)
Asian/Pacific Islander	74,424 (7%)
American Indian	7,058 (1%)
Other/Multiracial	175,028 (18%)

Education Level(Persons 25 & older) - Persons (%)	
Less than 9th Grade	79,961 (12.63%)
9th through 12th Grade	79,537 (12.57%)
High School Diploma	173,863 (27.47%)
Some College/2-year	128,849 (20.36%)
B.S./B.A. (Bachelor of Science/Bachelor of Arts) or More	170,719 (26.97%)

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Environmental Site Remediation Database Search Details

Site Record

Administrative Information

Site Name: Ingraham Street Sidewalk GW
Site Code: 224142
Program: State Superfund Program
Classification: P *
EPA ID Number:

Location

DEC Region: 2
Address: Ingraham Street
City: Brooklyn Zip: 11237
County: Kings
Latitude: 40.707155254
Longitude: -73.93008533
Site Type:
Estimated Size: 0 Acres

Site Owner(s) and Operator(s)

Site Description

This site began as a sidewalk groundwater study based on the results of the off-site investigation for the Popular Hand Laundry site (site No.V00170) located at 88 Ingraham Street in East Williamsburg, NY. Location: The site is located in the northern public sidewalk of Ingraham Street across from the Popular Hand Laundry VCP site between Knickerbocker Avenue and Porter Avenue in Kings County, New York. Site Features: The site includes the sidewalk/street area immediately in the vicinity of three monitoring wells placed on the sidewalk across from the Popular Hand VCP site. Current Zoning and Land Use: The site area is zoned as M1-2, which allows for light manufacturing, commercial, limited residential and certain community uses. In the immediate vicinity of the site, there are manufacturing and commercial businesses. The nearest residential area is approximately two hundred feet west of the site, along Ingraham Street. Past Use of the Site: Historical uses in the immediate vicinity of the impacted wells includes paper box manufacturing, metal works, drum storage and cleaning, and a dry cleaner. Site Geology and Hydrogeology: Soil at the site consists of historic fill mixed with silty sands

to a depth of approximately 15 feet. Soils beneath the fill layer consist of a sandy silt and silt layer with well-graded sand ranging between 15 to 32 feet below grade. The sandy silt and silt layer is underlain by a sandy silt layer. Depth to groundwater is about 15 feet below grade, and groundwater flow direction based on the latest well elevation survey was determined to be toward the north.

Contaminants of Concern (Including Materials Disposed)

Contaminant Name/Type
trichloroethene (TCE)
cis-1,2-dichloroethene
tetrachloroethene (PCE)
vinyl chloride

Site Environmental Assessment

Nature and Extent of Contamination: The primary contaminants of concern at the site include volatile organic compounds (VOCs), specifically, tetrachloroethene (PCE), trichloroethene (TCE), and associated breakdown products. These chlorinated solvents are found in soil(e.g., at the water interface and saturated zone), groundwater and soil vapor at varying concentrations. While no specific contaminant source area has been identified, historical groundwater sampling suggests that the current contaminant concentrations may have migrated from multiple sources including up-gradient Popular Hand Laundry site (site No. V00170) and are migrating north/northwest. Soil: Based upon investigations to date, soil sampling did not report contaminants of concern at levels exceeding soil cleanup objectives (SCOs) in the vadose (unsaturated) zone. Initial sampling event revealed TCE and PCE in a soil sample (34-35 ft. bgs) at 5 mg/kg (ppm) and 850 ppm, respectively. Additional investigation was conducted in the vicinity of this boring and the maximum detections vs. applicable SCOs are as follows: TCE at 0.54 ppm vs. 0.47 ppm, PCE at 3.4 ppm vs. 1.3 ppm, and Cis-1,2-Dichloroethylen (DCE) at 1.7 ppm vs. 0.25 ppm. Groundwater: PCE, TCE, DCE, and vinyl chloride (VC) contamination in groundwater were generally lower in concentration in the north (south of Johnson Avenue) and reached a maximum concentration in the southern portions of the plume (north of Ingraham Street). Groundwater sampling indicates VOCs contamination above Class GA groundwater standards. Maximum groundwater detections vs. standards are as follows: PCE at 970 parts per billion (ppb) vs. 5 ppb, TCE at 2,400 ppb vs. 5 ppb, DCE at 13,000 ppb vs. 5 ppb, and VC at 770 ppb vs. 5 ppb. Soil Vapor: Elevated levels of VOCs were detected in soil vapor. In general, the highest concentrations of PCE, TCE and DCE in soil vapor were detected on the northern sidewalk of Ingraham Street at the respective concentrations of 3,865 micrograms per cubic meter (ug/m3), 806 ug/m3 and 250 ug/m3. No indoor air samples were collected in the adjacent buildings, access was denied.

Site Health Assessment

People may come into contact with contaminated groundwater or soil if they dig below the surface. Contaminated groundwater at the site is not used for drinking or other purposes and the site is served by a public water supply that obtains its water from a different source that is not affected by this contamination. Volatile organic compounds in the groundwater and soil may move into the soil vapor (air spaces within the soil), which in turn may move into the overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Additional evaluation is needed to determine whether actions are needed to address soil vapor intrusion on and off-site.

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* **Class P Sites:** "DEC offers this information with the caution that it should not be used to form conclusions about site contamination beyond what is implied by the classification of this site, namely, that there is a potential for concern about site contamination. Information regarding a Class P site (potential Registry site) is by definition preliminary in nature and unverified because the DEC's investigation of the site is not yet complete. Due to the preliminary nature of this information, significant conclusions or decisions should not be based solely upon this summary."

For more Information: E-mail Us

Refine This Search

NEW YORK STATE OF OPPORTUNITY | Department of Environmental Conservation

Environmental Site Remediation Database Search Details

Site Record

Administrative Information

Site Name: Popular Hand Laundry
Site Code: V00170
Program: Voluntary Cleanup Program
Classification: C
EPA ID Number:

Location

DEC Region: 2
Address: 88 Ingrahm Street
City: Brooklyn Zip: 11237
County: Kings
Latitude: 40.70714666
Longitude: -73.93010688
Site Type:
Estimated Size: 0 Acres

Institutional And Engineering Controls

Control Type:
Deed Restriction

Control Elements:
Ground Water Use Restriction
Vapor Mitigation
Soil Management Plan
Cover System
Landuse Restriction
Monitoring Plan
Site Management Plan
O&M Plan
IC/EC Plan

Site Owner(s) and Operator(s)

Site Description

Location: The site is located at 88 Ingraham Street in Brooklyn, NY. Site Features: It consists of a two story building with an adjoining garage. The building comprises approximately 11,000 sq ft. and occupies the entire site. Current Zoning/Use: The site is currently used as for storage and restoration of antique furniture and artwork. The surrounding area is industrial. Historical Use: Since 1933 the building has been used for skein dying, dry cleaning and laundry operations. The site was acquired by Popular Hand Laundry (circa 1970) which operated dry cleaning services. Prior to 1970, a dry cleaning and laundry facility was operated by Klink. The site remedial program is being performed by 88 Ingraham Realty Corp. and Popular Hand Laundry and Cleaners of Richmond Hill, Inc. under the DEC's Voluntary Cleanup Program. Site Geology and Hydrogeology: Groundwater was detected at about 15 feet below grade, and measurements of groundwater elevation indicated that groundwater flow is to the north.

Contaminants of Concern (Including Materials Disposed)

Contaminant Name/Type
Hazardous Substances
tetrachloroethene (PCE)
trichloroethene (TCE)

Site Environmental Assessment

Nature and extent of contamination: Post remediation: remediation at the site is complete. prior to remediation, the primary contaminants of concern were the chlorinated solvents tetrachloroethene and trichloroethene in soil, groundwater and soil vapor. Remediation has successfully achieved soil cleanup objectives for commercial and industrial use. Remaining contamination in soil vapor is being managed under a Site Management Plan.

Site Health Assessment

Remedial actions are complete and measures are in place to control the potential for coming in contact with residual contamination remaining at the site.

For more Information: E-mail Us

Refine This Search

ATTACHMENT E7 – FREEDOM OF INFORMATION ACT REQUESTS AND RESPONSES

Deirdre Casey

From: admin@foiaonline.gov
Sent: Friday, June 21, 2019 2:46 PM
To: Deirdre Casey
Subject: FOIA Request EPA-R2-2019-006719 Submitted

This message is to confirm your request submission to the FOIAonline application: View Request. Request information is as follows:

- Tracking Number: EPA-R2-2019-006719
- Requester Name: Deirdre Casey
- Date Submitted: 06/21/2019
- Request Status: Submitted
- Description: Re: Freedom of Information Request
  440-448 Johnson Avenue (Block 2992, Lot 17)
  450 Johnson Avenue (also 83-89 Ingraham Street) (Block 2992, Lot 21)
  79-81 Ingraham Street (Block 2992, Lot 55)
  Brooklyn, New York
  Langan Project No. 170588001

  Dear Sir or Madam:

  Pursuant to the Federal Freedom of Information Act (5 U.S.C 552 et seq.) dealing with the examination and duplication of documents maintained by public agencies, Langan is requesting any information or copies of files regarding environmental conditions on the above property, such as environmental permits, notices of violations, spill/discharge incidents, storage or disposal of hazardous substances, Underground Storage Tanks (USTs), Leaking Underground Storage Tanks (LTANKs), asbestos abatement, and any other environmental reports that your department may have.
  The Subject Property is located at 440-448 Johnson Avenue, 450 Johnson Avenue (also 83-89 Ingraham Street) and 79-81 Ingraham Street in Brooklyn, New York. The Subject Property comprised of three lots referenced as Block 2992, Lots 17, 21, and 55. The Subject Property is bound by parking lots for FedEx and LIRR to the north, two four-story industrial/commercial buildings to the east, a parking lot/storage area and a number of 1-2 story industrial/commercial buildings to the south, and a parking lot/storage area and a two-story industrial/commercial building to the west.

  Please contact me at 212-479-5650 with any questions or send your response to my attention at dcasey@langan.com or at the below address:

  Langan Engineering and Environmental Services, P.C.
  21 Penn Plaza
  360 West 31st Street, 8th floor
  New York, New York 10001-2727

  Thank you in advance for your cooperation.

  Sincerely,

  Langan Engineering, Environmental, Surveying

and Landscape Architecture, D.P.C.

Deirdre Casey
Staff Scientist

Request Confirmation

Request Information

Tracking Number

EPA-R2-2019-006719

Requester Name

Deirdre Casey

Submitted Date

06/21/2019

Deirdre Casey

From: foia_hq@epa.gov
Sent: Wednesday, June 26, 2019 9:06 AM
To: Deirdre Casey
Subject: Final Disposition, Request EPA-HQ-2019-006719
Attachments: Other-20190625154057-Casey 2019-006719.docx.pdf

EPA-HQ-2019-006719 has been processed with the following final disposition: Full Grant.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Washington, D.C. 20460

OFFICE OF
GENERAL COUNSEL

JUN 25 2019

Ms. Deirdre Casey
Langan Engineering, Environmental, Surveying,
Landscape Architecture and Geology, D.P.C
360 West 31st Street, 8th Floor
New York, NY 10001

RE: Request Number EPA-HQ-2019-006719

Dear Ms. Casey:

This letter is in response to your Freedom of Information Act (FOIA) request, identified above, that you submitted to the U.S. Environmental Protection Agency (EPA). Your request is seeking records concerning:

440-448 Johnson Avenue. Brooklyn, New York
450 Johnson Avenue, Brooklyn, New York
83-89 Ingraham Street, Brooklyn, New York
79-81 Ingraham Street, Brooklyn, New York

The information that you are seeking about a specific property is publicly available through the EPA's MyProperty online database.

The MyProperty database below will provide you with information concerning records the EPA has about a specific property, and it can be accessed at the website at the link below:

http://www.epa.gov/myproperty/

Because the information you requested is publicly available, your FOIA request for this information will be closed. Agencies are not required to provide FOIA requesters with records that fall within the proactive disclosure provision of the FOIA, subsection (a)(2), and which are already made available to the public, typically on the agency's website. See, 5 U.S.C. § 552(a)(3); 40 C.F.R. § 2.101(c).

If no responsive records are identified, MyProperty will generate a "No Records Certificate."

If MyProperty identifies responsive records that you cannot retrieve them through MyProperty or if you need help with the MyProperty website, please contact EPA's FOIA Public Liaison at hq.foia@epa.gov or (202) 566-1667.

This letter concludes our response to your request. You may appeal this response by email at hq.foia@epa.gov, or by mail to the EPA's National FOIA Office, U.S. EPA, 1200 Pennsylvania Avenue, N.W. (2310A), Washington, DC 20460 or through FOIAonline if you are an account holder. If you are submitting your appeal by hand delivery, courier service, or overnight delivery, you must address your correspondence to 1200 Pennsylvania Avenue, N.W., Room 5315, Washington, DC 20460. Your appeal must be in writing, and it must be received no later than 90 calendar days from the date of this letter. The Agency will not consider appeals received after the 90-calendar-day limit. Appeals received after 5:00 p.m. EST will be considered received the next business day. The appeal letter should include the FOIA tracking number listed above. For quickest possible handling, the subject line of your email, the appeal letter, and its envelope, if applicable, should be marked "Freedom of Information Act Appeal." Additionally, you may seek dispute resolution services from EPA's FOIA Public Liaison at hq.foia@epa.gov or (202) 566-1667, or from the Office of Government Information Services (OGIS). You may contact OGIS in any of the following ways: by mail, Office of Government Information Services, National Archives and Records Administration, Room 2510, 8610 Adelphi Road, College Park, MD 20740-6001; email, ogis@nara.gov; telephone, (202) 741-5770 or (877) 684-6448; or fax, (202) 741-5769.

Cordially,

Larry F. Gottesman
Agency FOIA Officer

EPA United States Environmental Protection Agency

My Environment (find.html)

450 Johnson Ave, Brooklyn, New York, 11237

Select a new Location:

GO

MyMap

To view facilities and sites regulated by EPA, click on the menu icon at upper left, select “Layers”, turn on the checkboxes for the layers you want to see, and then click the “X” to close the menu.

More Maps

MyAir

The Air Quality Index (AQI) is an index for reporting daily air quality. It tells you how clean or polluted your air is, and what associated health effects might be a concern for you. Read more about air quality (https://airnow.gov/index.cfm?action=aqibasics.index).

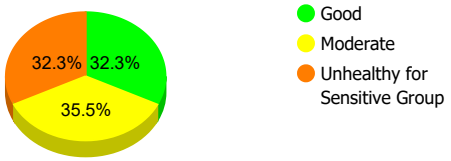
New York City Region, NY; August 23, 2019

Current: Good

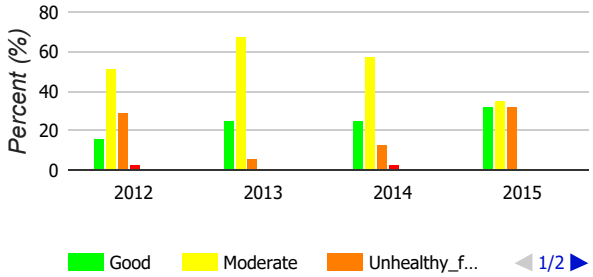
Forecast: Good

Kings County, NY

August Air Quality Average (2015)



August Historical Air Quality (2012-2015)



More Air

MyWater

The Assessment Total Maximum Daily Load (TMDL) Tracking and Implementation System (ATTAINS) provides information reported by the states to EPA about the conditions in their surface waters. This information is required every two years under Clean Water Act Sections 305(b) and 303(d). Read more about water quality (https://www.epa.gov/waterdata/assessing-and-reporting-water-quality-questions-and-answers).

The Water Quality Assessment data are not available at this map scale.

More Water

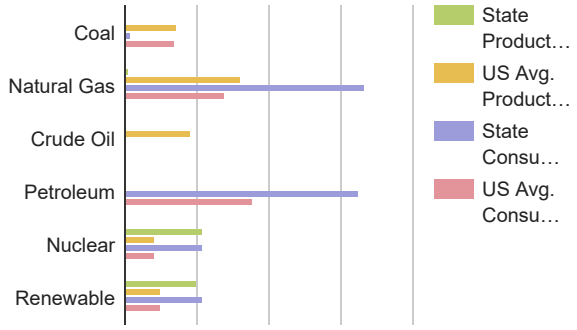
MyEnergy

The State Energy Data System (SEDS) is the U.S. Energy Information Administration's (EIA) source for comprehensive State energy statistics. Included are estimates of energy production, consumption, prices, and expenditures broken down by energy source and sector.

Select a Year: 2016 ▼

State Data Comparisons

New York: 2016 Energy Production vs. Consumption by Source



Data Source: DOE EIA

More Energy

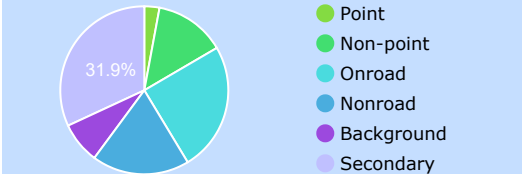
MyHealth

Toxic air pollutants, or air toxics, are those pollutants known or suspected of causing cancer or other serious health problems, such as birth defects. Not all air pollutants are considered - please visit the NATA Web site (https://www.epa.gov/national-air-toxics-assessment/2014-national-air-toxics-assessment) for more information on the 2014 NATA data.

2014 Cancer Risk Estimates (Inhalation)
Tract: 36047045300, Kings County, NY
More air toxics info...

Total Risk Per Million: 43

Source Category Breakdown of Risk



Pollutant Contributions to Risk

Pollutant	Percentage
Formaldehyde Risk	46.16
Benzene Risk	16.71
Carbon Tetrachloride Risk	7.76
1_3-Butadiene Risk	7.41
Acetaldehyde Risk	6.21

click to get the whole list

More Health

MyClimate

In response to the FY2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110--161) (https://www.gpo.gov/fdsys/pkg/PLAW-110publ161/pdf/PLAW-110publ161.pdf), EPA launched the Greenhouse Gas Reporting Program (GHGRP). The program requires annual reporting of greenhouse gas (GHG) data and other relevant information from large direct emissions sources and suppliers of certain fossil fuels and industrial gases in the United States. Read More (https://www2.epa.gov/enviro/greenhouse-gas-overview)

Loading...

More Climate

MyLand

The National Priorities List (NPL) is the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. Read more about the NPL (https://www2.epa.gov/superfund/superfund-national-priorities-list-npl).

More Land

MyCommunity

Community Resources (https://www2.epa.gov/communities) - find key resources to address local environmental challenges.

Give a shout out! Tell us what's happening that's good for the environment in your area, and we'll post it here!

More Community

MyReports

The Environmental Reports site helps people understand environmental conditions in their community. Many communities and states have analyzed environmental conditions near them and have packaged them into reports.

More Environmental Reports

LAST UPDATED ON THU JUL 05 2018

U.S. Environmental Protection Agency

MyProperty

Environmental Databases Search

The search of EPA's Facility Registry System did not locate any records for the search criteria provided below:

Search Criteria:

Street Address:	440 Johnson Avenue
City, State:	Brooklyn, NY
Query executed on:	08/23/2019 05:35 PM **EST**

Contact the appropriate state, tribal or local agencies if you seek additional information.

Disclaimer

The MyProperty reports are provided solely for informational purposes. They do not provide legal advice, have legally binding effect, or expressly or implicitly create, expand, or limit any legal rights, obligations, responsibilities, expectations, or benefits in regard to any person. EPA maintains the application to enhance public access to environmental information. This service has continual data updates, and we will correct errors brought to our attention, as appropriate.

U.S. Environmental Protection Agency

MyProperty

Environmental Databases Search

The search of EPA's Facility Registry System did not locate any records for the search criteria provided below:

Search Criteria:

Street Address:	450 Johnson Avenue
City, State:	Brooklyn, NY
Query executed on:	08/23/2019 05:33 PM **EST**

Contact the appropriate state, tribal or local agencies if you seek additional information.

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U.S. Environmental Protection Agency

MyProperty

Environmental Databases Search

The search of EPA's Facility Registry System did not locate any records for the search criteria provided below:

Search Criteria:

Street Address:	49 Ingraham Street
City, State:	Brooklyn, NY
Query executed on:	08/23/2019 05:36 PM **EST**

Contact the appropriate state, tribal or local agencies if you seek additional information.

Disclaimer

The MyProperty reports are provided solely for informational purposes. They do not provide legal advice, have legally binding effect, or expressly or implicitly create, expand, or limit any legal rights, obligations, responsibilities, expectations, or benefits in regard to any person. EPA maintains the application to enhance public access to environmental information. This service has continual data updates, and we will correct errors brought to our attention, as appropriate.

Deirdre Casey

From: New York DEC Support <newyorkdec@mycusthelp.net>
Sent: Friday, June 21, 2019 2:49 PM
To: Philip Lynch
Subject: FOIL Request :: W054358-062119

Dear Philip:

Thank you for your Freedom of Information Law (FOIL) request. Your request has been received and is being processed. Your request was received in this office on 6/21/2019 and given the reference number FOIL #W054358-062119 for tracking purposes. You may expect the Department's response to your request no later than **7/22/2019**.

Record Requested: **Re: Freedom of Information Request 440-448 Johnson Avenue (Block 2992, Lot 17) 450 Johnson Avenue (also 83-89 Ingraham Street) (Block 2992, Lot 21) 79-81 Ingraham Street (Block 2992, Lot 55) Brooklyn, New York Langan Project No. 170588001 Dear Sir or Madam: Pursuant to the Federal Freedom of Information Act (5 U.S.C 552 et seq.) dealing with the examination and duplication of documents maintained by public agencies, Langan is requesting any information or copies of files regarding environmental conditions on the above property, such as environmental permits, notices of violations, spill/discharge incidents, storage or disposal of hazardous substances, Underground Storage Tanks (USTs), Leaking Underground Storage Tanks (LTANKs), asbestos abatement, and any other environmental reports that your department may have. The Subject Property is located at 440-448 Johnson Avenue, 450 Johnson Avenue (also 83-89 Ingraham Street) and 79-81 Ingraham Street in Brooklyn, New York. The Subject Property comprised of three lots referenced as Block 2992, Lots 17, 21, and 55. The Subject Property is bound by parking lots for FedEx and LIRR to the north, two four-story industrial/commercial buildings to the east, a parking lot/storage area and a number of 1-2 story industrial/commercial buildings to the south, and a parking lot/storage area and a two-story industrial/commercial building to the west. Please contact me at 212-479-5650 with any questions or send your response to my attention at dcasey@langan.com or at the below address: Langan Engineering and Environmental Services, P.C. 21 Penn Plaza 360 West 31st Street, 8th floor New York, New York 10001-2727 Thank you in advance for your cooperation. Sincerely, Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. Deirdre Casey Staff Scientist**

You can monitor the progress of your request at the link below and you'll receive an email when your request has been completed. Again, thank you for using the FOIL Center.

https://mycusthelp.com/NEWYORKDEC/_rs/RequestLogin.aspx

New York State Department of Environmental Conservation, Record Access Office

Track the issue status and respond at:
https://mycusthelp.com/NEWYORKDEC//_rs/RequestEdit.aspx?rid=54358

Open FOIL NY (https://www.ny.gov/programs/open-foil-ny)

Thank you for submitting your request through Open FOIL NY. Here is your Open FOIL NY confirmation information for future reference:

CASEY_DEC_20190627095257208

Your FOIL request has been forwarded to the organization(s) you selected, and the respective Records Access Officer will contact you directly for further processing of your request.

Please allow up to five business days for such communication(s). For your convenience, here is additional contact information:

Department of Environmental Conservation Records Access Office
625 Broadway
Albany NY, 12233-1500
518-402-9522

SUBMIT NEW FOIL REQUEST

Accessibility (http://www.ny.gov/node/55121)
Agencies (http://www.ny.gov/agencies)
App Directory
(http://www.ny.gov/mobileapps)
Counties (http://www.ny.gov/counties)
Disclaimer (http://www.ny.gov/node/55126)
Events (http://www.ny.gov/events)
Privacy Policy
(http://www.ny.gov/node/56891)
Programs (http://www.ny.gov/programs)
Services (http://www.ny.gov/services)
Site Map (http://www.ny.gov/sitemap)

Deirdre Casey

From: New York DEC Support <newyorkdec@mycusthelp.net>
Sent: Thursday, July 25, 2019 11:04 PM
To: Deirdre Casey
Subject: Freedom of Information Law Request :: W054663-062719

--- Please respond above this line ---

Region 2 - Long Island City
P: (718) 482-3103 | F:
www.dec.ny.gov

RE: PUBLIC RECORDS REQUEST of 6/27/2019, Reference # W054663-062719

Date: 07/25/2019

Dear Ms. Casey,

Records identified as responsive to your request have been uploaded into DEC's online FOIL request system. Please visit our customer portal by clicking here to log into your DEC FOIL account, where you can view and download the records.

If you believe you have been denied access to responsive records, you have the right to appeal. Such an appeal must be submitted in writing within thirty (30) days of the date of this email, and directed to:

FOIL Appeals Officer
Office of General Counsel
New York State Department of Environmental Conservation
625 Broadway, 14th Floor
Albany, New York 12233-1500

If I can be of further assistance, please contact me at (718) 482-3103 and reference FOIL W054663-062719 or simply reply to this email.

Sincerely,
Region 2 FOIL Coordinator

Menu

FOIL Request Main Page I want to...

Contact E-Mail: dcasey@langan.com

Reference No: W054663-062719

Files:	UPLOAD DATE	DOWNLOAD ALL
	07/25/2019	letter.VCP.V00170.2017-12-13.release-letter-Assignable_Release_and_Covenant_Not_To_Sue_.pdf
	07/25/2019	report.VCP.V00170.2017-07-19.FER_Final.pdf
	07/25/2019	report.vcp.V00170.2017-09-26_Final_SMP.pdf
	06/27/2019	Agreement.HW.224142.2011-12-07.Access_Stipulation.pdf
	06/27/2019	Agreement.HW.224142.2012-03-14.access_stipulation_agreement.pdf
	06/27/2019	Agreement.HW.224142.2012-05-10.executed_stip_agreement.pdf
	06/27/2019	Agreement.HW.224142.2012-12-06.executed_stip_agreement.pdf
	06/27/2019	Agreement.HW.224142.2014-02-20.ACCESS_STIPULATION.pdf
	06/27/2019	Agreement.HW.224142.2014-05-14.85__89_Harrison_Place_-_Executed_Access_Stipulation_Agreement.pdf
	06/27/2019	Report.HW.224142.2015-02-03.Site_Characterization_Report.pdf
	06/27/2019	Site_Plan.HW.224142.2010-06-15.Boundary_GIS_maps.pdf
	06/27/2019	Work_Plan.HW.224142.2013-11-26.D006132-15_SHAW.pdf

Type of Record(s) Requested: Other

Description of Record(s) Requested: Langan Is requesting all milestone documents related to the following two sites: 1) Popular Hand Laundry (Site Code: V00170, 88 Ingraham Street, Brooklyn, NY 11237) 2) Ingraham Street Sidewalk GW (Site Code: 224142, Ingraham Street, Brooklyn NY 11237) Thank you.

NYSDEC Office processing the Request:	Region 2: (New York City) Covers the counties of: Brooklyn, Bronx, Manhattan, Queens and Staten Island **If your request pertains to just one Region, select that Region. If your request pertains to more than one Region, select Central Office. If you're unsure which Region your request pertains to, select Central Office. The Department will route your request to the appropriate Region(s)**
Preferred Method to Receive Records:	Electronic copies **NYSDEC will use its best efforts to provide records via the method you select. However, in some cases a particular delivery method is not feasible. In such cases NYSDEC will deliver the records via an alternative method**

Please note not all public documents are available in electronic format. If the document(s) requested are not available electronically, we will make them available for inspection or by paper copy in accordance with the Public Records Law.

New Message Cancel

Messages 4 Print Messages (PDF)

On 7/25/2019 11:04:25 PM, New York DEC Support wrote:

Subject: Freedom of Information Law Request :: W054663-062719
Body:
RE: PUBLIC RECORDS REQUEST of 6/27/2019, Reference # W054663-062719

Date: 07/25/2019

Dear Ms. Casey,

Records identified as responsive to your request have been uploaded into DEC's online FOIL request system. Please visit our customer portal by clicking here to log into your DEC FOIL account, where you can view and download the records.

If you believe you have been denied access to responsive records, you have the right to appeal. Such an appeal must be submitted in writing within thirty (30) days of the date of this email, and directed to:

FOIL Appeals Officer
Office of General Counsel
New York State Department of Environmental Conservation
625 Broadway, 14th Floor
Albany, New York 12233-1500

If I can be of further assistance, please contact me at (718) 482-3103 and reference FOIL W054663-062719 or simply reply to this email.

Sincerely,
Region 2 FOIL Coordinator

On 6/27/2019 11:35:38 AM, New York DEC Support wrote:

On 6/27/2019 9:59:08 AM, New York DEC Support wrote:

On 6/27/2019 9:59:07 AM, New York DEC Support wrote:

Powered by GovQA

W054663-062719 - Freedom of Information Law Request

Message History (4)

On 7/25/2019 11:04:25 PM, New York DEC Support wrote:

Subject: Freedom of Information Law Request :: W054663-062719
Body:
RE: PUBLIC RECORDS REQUEST of 6/27/2019, Reference # W054663-062719

Date: 07/25/2019

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New York State Department of Environmental Conservation
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Albany, New York 12233-1500

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Sincerely,
Region 2 FOIL Coordinator

On 6/27/2019 11:35:38 AM, New York DEC Support wrote:

Subject: Freedom of Information Law Request :: W054663-062719
Body:
RE: PUBLIC RECORDS REQUEST of 6/27/2019, Reference # W054663-062719

Date: 06/27/2019
Dear Deirdre Casey,

Records identified as responsive to your request have been uploaded into DEC's online FOIL request system. Please visit our customer portal by clicking here to log into your DEC FOIL account, where you can view and download the records.

Consider this release as a partial response to your request. Staff I the Region 2 Office are searching for additional records.

If I can be of further assistance, please contact me and reference FOIL W054663-062719.

Sincerely,
Mark Sarnacki

Mark Sarnacki
Environmental Program Specialist II, Division of Environmental Remediation

New York State Department of Environmental Conservation
625 Broadway, Albany, NY 12233
P: (518) 402-9740 | F: (518) 402-9722 | mark.sarnacki@dec.ny.gov
www.dec.ny.gov |

On 6/27/2019 9:59:08 AM, New York DEC Support wrote:

Dear Deirdre:

Thank you for your Freedom of Information Law (FOIL) request. Your request has been received and is being processed. Your request was received in this office on 6/27/2019 and given the reference number FOIL #W054663-062719 for tracking purposes. You may expect the Department's response to your request no later than **7/26/2019**.

Record Requested: **Langan Is requesting all milestone documents related to the following two sites: 1) Popular Hand Laundry (Site Code: V00170, 88 Ingraham Street, Brooklyn, NY 11237) 2) Ingraham Street Sidewalk GW (Site Code: 224142, Ingraham Street, Brooklyn NY 11237) Thank you.**

You can monitor the progress of your request at the link below and you'll receive an email when your request has been completed. Again, thank you for using the FOIL Center.

https://mycusthelp.com/NEWYORKDEC/_rs/RequestLogin.aspx

New York State Department of Environmental Conservation, Record Access Office

Track the issue status and respond at:
https://mycusthelp.com/NEWYORKDEC//_rs/RequestEdit.aspx?rid=54663

On 6/27/2019 9:59:07 AM, New York DEC Support wrote:

Request was created by staff

Deirdre Casey

From: Philip Lynch
Sent: Friday, June 21, 2019 3:54 PM
To: 'foil@health.ny.gov'
Cc: Deirdre Casey
Subject: 440-448 Johnson Avenue (Block 2992, Lot 17), 450 Johnson Avenue (also 83-89 Ingraham Street) (Block 2992, Lot 21), 79-81 Ingraham Street (Block 2992, Lot 55), Brooklyn, New York
Attachments: NYSDOH.pdf

Re: Freedom of Information Request
440-448 Johnson Avenue (Block 2992, Lot 17)
450 Johnson Avenue (also 83-89 Ingraham Street) (Block 2992, Lot 21)
79-81 Ingraham Street (Block 2992, Lot 55)
Brooklyn, New York
Langan Project No. 170588001

Dear Sir or Madam:

Pursuant to the Federal Freedom of Information Act (5 U.S.C 552 et seq.) dealing with the examination and duplication of documents maintained by public agencies, Langan is requesting any information or copies of files regarding environmental conditions on the above property, such as environmental permits, notices of violations, spill/discharge incidents, storage or disposal of hazardous substances, Underground Storage Tanks (USTs), Leaking Underground Storage Tanks (LTANKs), asbestos abatement, and any other environmental reports that your department may have.

The Subject Property is located at **440-448 Johnson Avenue, 450 Johnson Avenue (also 83-89 Ingraham Street) and 79-81 Ingraham Street** in **Brooklyn, New York**. The Subject Property comprised of three lots referenced as **Block 2992, Lots 17, 21, and 55**. The Subject Property is bound by parking lots for FedEx and LIRR to the north, two four-story industrial/commercial buildings to the east, a parking lot/storage area and a number of 1-2 story industrial/commercial buildings to the south, and a parking lot/storage area and a two-story industrial/commercial building to the west.

Please contact me at 212-479-5650 with any questions or send your response to my attention at dcasey@langan.com or at the below address:

Langan Engineering and Environmental Services, P.C.
21 Penn Plaza
360 West 31st Street, 8th floor
New York, New York 10001-2727

Thank you in advance for your cooperation.

Sincerely,

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.

Deirdre Casey
Staff Scientist

Philip Lynch
Administrative Assistant
Direct: 212.479.5469
File Sharing Link

LANGAN
Phone: 212.479.5400 Fax: 212.479.5444
21 Penn Plaza
360 West 31st Street, 8th Floor
New York, NY 10001-2727
www.langan.com

NEW YORK NEW JERSEY CONNECTICUT PENNSYLVANIA WASHINGTON, DC
VIRGINIA WEST VIRGINIA OHIO FLORIDA TEXAS COLORADO ARIZONA CALIFORNIA
ABU DHABI ATHENS DOHA DUBAI LONDON PANAMA

A Carbon-Neutral Firm | Langan's goal is to be SAFE (Stay Accident Free Everyday)

LANGAN

Technical Excellence
Practical Experience
Client Responsiveness

June 21, 2019

New York State Department of Health
Attn: Record Access Officer
Corning Tower, Room 2348
Albany, NY 12237

Re: Freedom of Information Request
440-448 Johnson Avenue (Block 2992, Lot 17)
450 Johnson Avenue (also 83-89 Ingraham Street) (Block 2992, Lot 21)
79-81 Ingraham Street (Block 2992, Lot 55)
Brooklyn, New York
Langan Project No. 170588001

Dear Sir or Madam:

Pursuant to the Federal Freedom of Information Act (5 U.S.C 552 et seq.) dealing with the examination and duplication of documents maintained by public agencies, Langan is requesting any information or copies of files regarding environmental conditions on the above property, such as environmental permits, notices of violations, spill/discharge incidents, storage or disposal of hazardous substances, Underground Storage Tanks (USTs), Leaking Underground Storage Tanks (LTANKs), asbestos abatement, and any other environmental reports that your department may have.

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Langan Engineering and Environmental Services, P.C.
21 Penn Plaza
360 West 31st Street, 8th floor
New York, New York 10001-2727

Thank you in advance for your cooperation.

Sincerely,

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.

Deirdre Casey
Staff Scientist

Deirdre Casey

From: doh.sm.BOB-FOIL <foil@health.ny.gov>
Sent: Monday, June 24, 2019 3:46 PM
To: Deirdre Casey
Subject: *19-06-331-RAO*
Attachments: Acknowledgement Letter 19-06-331.pdf

Good Afternoon,

Please see the attached concerning your FOIL request.

Thank you,

Records Access Office

New York State Department of Health
2364 Corning Tower
Albany, NY 12237

P (518) 474-8734 | F (518) 486-9144

NEW YORK STATE OF OPPORTUNITY. | Department of Health

ANDREW M. CUOMO
Governor

HOWARD A. ZUCKER, M.D., J.D.
Commissioner

SALLY DRESLIN, M.S., R.N.
Executive Deputy Commissioner

June 24, 2019

Deirdre Casey
Langan
21 Penn Plaza
360 West 31st Street, 8th Floor
New York, NY 10001

FOIL # 19-06-331
Your File # 170588001

Dear Ms. Casey:

This will acknowledge receipt of your request for records under the Freedom of Information Law, received by this office on June 21, 2019.

Your request has been forwarded to the appropriate Department program area(s) to identify documents that are responsive to your request and which may be made available pursuant to all applicable provisions of the Freedom of Information Law.

A determination as to whether your request is granted or denied will be reached in approximately 20 business days or we will notify you in writing if the responsible program area(s) should require additional time to locate, assemble, and review documents that may be responsive to your request.

Please note that, pursuant to Article 6 of the Public Officers Law, a charge may be applied to your request, including the actual cost of the medium used to respond to your Freedom of Information Law request and/or other related costs. When responsive records have been identified, you will be informed of any cost and how payment should be made.

Sincerely,

Rosemarie Hewig, Esq.
Records Access Officer

RH/sjp

Deirdre Casey

From: doh.sm.BOB-FOIL <foil@health.ny.gov>
Sent: Tuesday, July 23, 2019 5:13 PM
To: Deirdre Casey
Subject: New York State Department of Health, FOIL #19-03-331
Attachments: 19-06-331 Extension Letter.pdf

Greetings!

Please see the attached letter regarding the estimated date when this office anticipates providing a response to your request.

Regards,

Records Access Office
New York State Department of Health
2364 Corning Tower, Albany, NY 12237
(518) 474-8734 | Fax (518) 486-9144
foil@health.ny.gov

NEW YORK STATE OF OPPORTUNITY. Department of Health

ANDREW M. CUOMO
Governor

HOWARD A. ZUCKER, M.D., J.D.
Commissioner

SALLY DRESLIN, M.S., R.N.
Executive Deputy Commissioner

July 23, 2019

Deirdre Casey
Langan
21 Penn Plaza
360 West 31st Street, 8th Floor
New York, NY 10001

FOIL #: 19-06-331
Project #: 170588001

Dear Ms. Casey:

This letter is regarding your Freedom of Information Law request of June 21, 2019, which is currently being processed.

Please be advised this Office is unable to respond to your request by the date previously given to you because a diligent search for responsive documents is still being conducted.

We estimate that this Office will complete its process by August 20, 2019. The Department will notify you in writing when or if the responsive materials are available for release, or if the time needed to complete your request extends beyond the above date.

If you require additional information or wish to discuss this matter further, please do not hesitate to contact me at (518) 474-8734.

Sincerely,

Rosemarie Hewig, Esq.
Records Access Officer

RH/rmd

Deirdre Casey

From: doh.sm.BOB-FOIL <foil@health.ny.gov>
Sent: Wednesday, August 14, 2019 12:19 PM
To: Deirdre Casey
Subject: New York State Department of Health, FOIL #19-06-331
Attachments: 19-06-331 Response Letter.pdf

Greetings!

Please see the attached from the New York State Department of Health related to the above-referenced request.

Regards,

Records Access Office
New York State Department of Health
2364 Corning Tower, Albany, NY 12237
(518) 474-8734 | Fax (518) 486-9144
foil@health.ny.gov

NEW YORK STATE OF OPPORTUNITY. | Department of Health

ANDREW M. CUOMO
Governor

HOWARD A. ZUCKER, M.D., J.D.
Commissioner

SALLY DRESLIN, M.S., R.N.
Executive Deputy Commissioner

August 14, 2019

Deirdre Casey
Langan
21 Penn Plaza
360 West 31st Street, 8th Floor
New York, NY 10001

FOIL #: 19-06-331
Project #: 170588001

Dear Ms. Casey:

This letter responds to your Freedom of Information Law request of June 21, 2019, in which you requested environmental records pertaining to "440-448 Johnson Avenue, 450 Johnson Avenue (also 83-89 Ingraham Street) and 79-81 Ingraham Street in Brooklyn, New York."

Please be advised that after conducting a diligent search, no records responsive to your request have been located. Please note that this location is in the vicinity of several cleanup sites. Records of the type you have requested may be maintained by the New York State Department of Environmental Conservation. You may contact this office at:

Records Access Officer
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-1500
Phone: (518) 402-9522
Fax: (518) 402-9018
Email: access.records@dec.ny.gov

Please be further advised that records pertaining to asbestos abatement may be maintained by the New York State Department of Labor Asbestos Control Bureau. The contact information for this office is as follows:

Records Access Officer
New York State Department of Labor
State Office Campus, Building 12, Room 509
Albany, New York 12240
Fax: (518) 485-1819

Should you feel that you have been unlawfully denied access to records, you may appeal such denial in writing within 30 days to the Records Access Appeals Officer, Division of Legal Affairs, Empire State Plaza, 2438 Corning Tower, Albany, New York 12237-0026.

If you require additional information or wish to discuss this matter further, please do not hesitate to contact me at (518) 474-8734.

Sincerely,

Rosemarie Hewig, Esq.
Records Access Officer

RH/rmd

LANGAN

Technical Excellence
Practical Experience
Client Responsiveness

June 21, 2019

Attn: Records Access Officer
New York City Department of Environmental Protection
Bureau of Legal Affairs
59-17 Junction Boulevard, 19th Floor
Corona, New York 11368

Re: Freedom of Information Request
440-448 Johnson Avenue (Block 2992, Lot 17)
450 Johnson Avenue (also 83-89 Ingraham Street) (Block 2992, Lot 21)
79-81 Ingraham Street (Block 2992, Lot 55)
Brooklyn, New York
Langan Project No. 170588001

Dear Sir or Madam:

Pursuant to the Federal Freedom of Information Act (5 U.S.C 552 et seq.) dealing with the examination and duplication of documents maintained by public agencies, Langan is requesting any information or copies of files regarding environmental conditions on the above property, such as environmental permits, notices of violations, spill/discharge incidents, storage or disposal of hazardous substances, Underground Storage Tanks (USTs), Leaking Underground Storage Tanks (LTANKs), asbestos abatement, and any other environmental reports that your department may have.

The Subject Property is located at **440-448 Johnson Avenue, 450 Johnson Avenue (also 83-89 Ingraham Street) and 79-81 Ingraham Street** in **Brooklyn, New York**. The Subject Property comprised of three lots referenced as **Block 2992, Lots 17, 21, and 55**. The Subject Property is bound by parking lots for FedEx and LIRR to the north, two four-story industrial/commercial buildings to the east, a parking lot/storage area and a number of 1-2 story industrial/commercial buildings to the south, and a parking lot/storage area and a two-story industrial/commercial building to the west.

Please contact me at 212-479-5650 with any questions or send your response to my attention at dcasey@langan.com or at the below address:

Langan Engineering and Environmental Services, P.C.
21 Penn Plaza
360 West 31st Street, 8th floor
New York, New York 10001-2727

Thank you in advance for your cooperation.

Sincerely,

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.

Deirdre Casey
Staff Scientist

Deirdre Casey

From: donotreply@records.nyc.gov
Sent: Monday, June 24, 2019 10:38 AM
To: Deirdre Casey
Subject: [OpenRecords] Request FOIL-2019-826-02734 Acknowledged

The Department of Environmental Protection (DEP) has **acknowledged** your FOIL request FOIL-2019-826-02734.

You can expect a response on or about Thursday, November 7, 2019.

Please visit FOIL-2019-826-02734 to view additional information and take any necessary action.

Request Information:
Request Title: Files re: environmental conditions

Request Description: Re: Freedom of Information Request 440-448 Johnson Avenue (Block 2992, Lot 17) 450 Johnson Avenue (also 83-89 Ingraham Street) (Block 2992, Lot 21) 79-81 Ingraham Street (Block 2992, Lot 55) Brooklyn, New York Langan Project No. 170588001 Dear Sir or Madam: Pursuant to the Federal Freedom of Information Act (5 U.S.C 552 et seq.) dealing with the examination and duplication of documents maintained by public agencies, Langan is requesting any information or copies of files regarding environmental conditions on the above property, such as environmental permits, notices of violations, spill/discharge incidents, storage or disposal of hazardous substances, Underground Storage Tanks (USTs), Leaking Underground Storage Tanks (LTANKs), asbestos abatement, and any other environmental reports that your department may have. The Subject Property is located at 440-448 Johnson Avenue, 450 Johnson Avenue (also 83-89 Ingraham Street) and 79-81 Ingraham Street in Brooklyn, New York. The Subject Property comprised of three lots referenced as Block 2992, Lots 17, 21, and 55. The Subject Property is bound by parking lots for FedEx and LIRR to the north, two four-story industrial/commercial buildings to the east, a parking lot/storage area and a number of 1-2 story industrial/commercial buildings to the south, and a parking lot/storage area and a two-story industrial/commercial building to the west. Please contact me at 212-479-5650 with any questions or send your response to my attention at dcasey@langan.com or at the below address: Langan Engineering and Environmental Services, P.C. 21 Penn Plaza 360 West 31st Street, 8th floor New York, New York 10001-2727 Thank you in advance for your cooperation. Sincerely, Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. Deirdre Casey Staff Scientist

Deirdre Casey

From: donotreply@records.nyc.gov
Sent: Friday, June 21, 2019 2:51 PM
To: Deirdre Casey
Subject: [OpenRecords] Request FOIL-2019-826-02734 Submitted to Department of Environmental Protection (DEP)

Your request FOIL-2019-826-02734 has been successfully submitted to the Department of Environmental Protection (DEP). The details of your request are shown below.

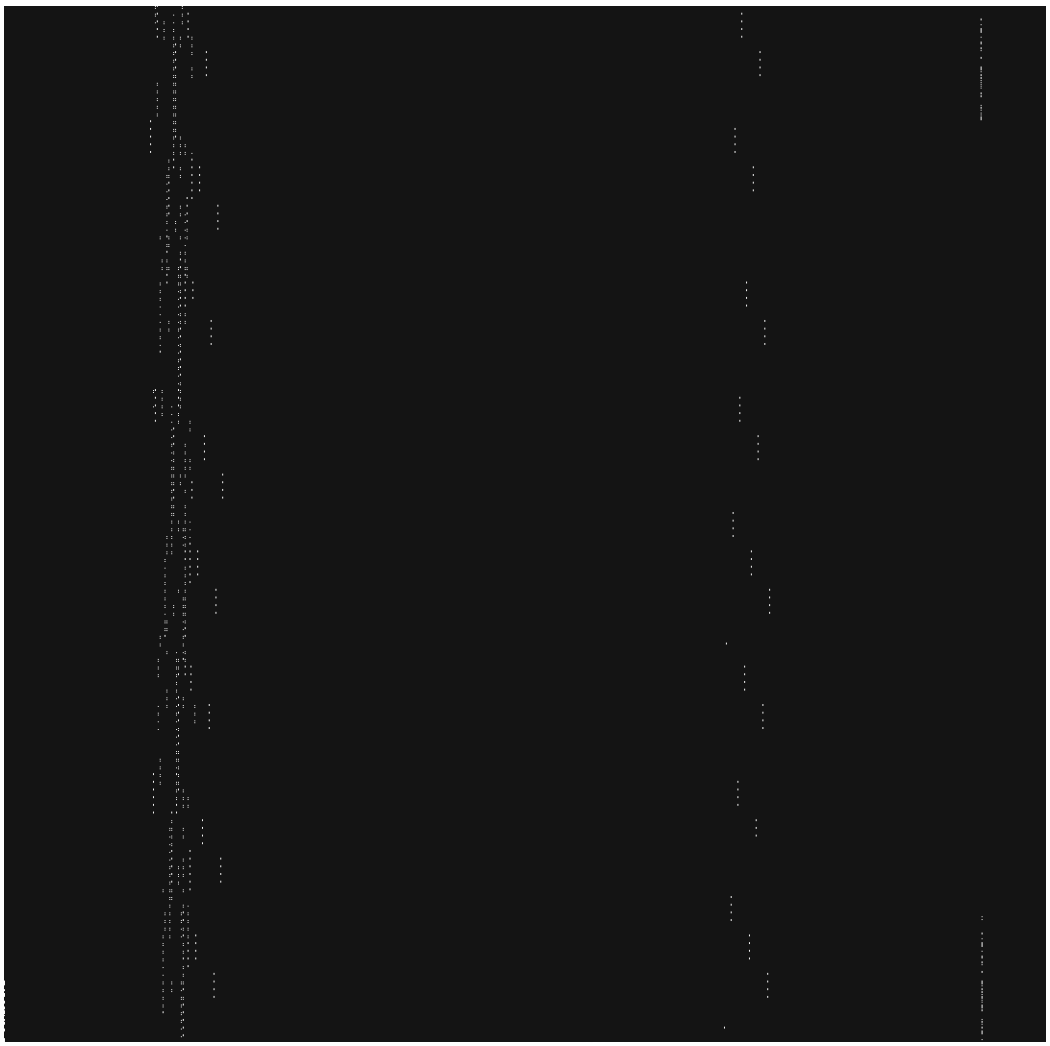
Request Title: Files re: environmental conditions

Request Description: Re: Freedom of Information Request 440-448 Johnson Avenue (Block 2992, Lot 17) 450 Johnson Avenue (also 83-89 Ingraham Street) (Block 2992, Lot 21) 79-81 Ingraham Street (Block 2992, Lot 55) Brooklyn, New York Langan Project No. 170588001 Dear Sir or Madam: Pursuant to the Federal Freedom of Information Act (5 U.S.C 552 et seq.) dealing with the examination and duplication of documents maintained by public agencies, Langan is requesting any information or copies of files regarding environmental conditions on the above property, such as environmental permits, notices of violations, spill/discharge incidents, storage or disposal of hazardous substances, Underground Storage Tanks (USTs), Leaking Underground Storage Tanks (LTANKs), asbestos abatement, and any other environmental reports that your department may have. The Subject Property is located at 440-448 Johnson Avenue, 450 Johnson Avenue (also 83-89 Ingraham Street) and 79-81 Ingraham Street in Brooklyn, New York. The Subject Property comprised of three lots referenced as Block 2992, Lots 17, 21, and 55. The Subject Property is bound by parking lots for FedEx and LIRR to the north, two four-story industrial/commercial buildings to the east, a parking lot/storage area and a number of 1-2 story industrial/commercial buildings to the south, and a parking lot/storage area and a two-story industrial/commercial building to the west. Please contact me at 212-479-5650 with any questions or send your response to my attention at dcasey@langan.com or at the below address: Langan Engineering and Environmental Services, P.C. 21 Penn Plaza 360 West 31st Street, 8th floor New York, New York 10001-2727 Thank you in advance for your cooperation. Sincerely, Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C. Deirdre Casey Staff Scientist

Requester's Contact Information

Name:
Deirdre Casey
Title:
Staff Scientist
Organization:
Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
Email:
dcasey@langan.com
Phone Number:
(212) 479-5650
Fax Number:
Not provided
Street Address (line 1):
360 W 31st Street, 8th Floor
Street Address (line 2):
Not provided
City:
New York
State:
NY
Zip Code:
10001

You can view the request and take any necessary action at the following webpage: https://a860-openrecords.nyc.gov/request/view/FOIL-2019-826-02734.



LANGAN

Technical Excellence
Practical Experience
Client Responsiveness

June 21, 2019

Fire Department, City of New York
Bureau of Revenue Management
9 MetroTech East
Brooklyn, New York 11201-3857

Re: Freedom of Information Request
440-448 Johnson Avenue (Block 2992, Lot 17)
450 Johnson Avenue (also 83-89 Ingraham Street) (Block 2992, Lot 21)
79-81 Ingraham Street (Block 2992, Lot 55)
Brooklyn, New York
Langan Project No. 170588001

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Langan Engineering and Environmental Services, P.C.
21 Penn Plaza
360 West 31st Street, 8th floor
New York, New York 10001-2727

Thank you in advance for your cooperation.

Sincerely,

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.

Deirdre Casey
Staff Scientist

FIRE DEPARTMENT – CITY OF NEW YORK

Public Records Unit / Tanks Section

9 MetroTech Center
Brooklyn, New York 11201-3857
(718) 999-2441 or 2442

Fuel Tank Special Report Request Form

SECTION A **CUSTOMER INFORMATION**

Please print the required information below.

DEIRDRE CASEY c/o LANGAN ENGINEERING
Name

360 WEST 31ST ST., 8th FLR
Address

NEW YORK, NY 10001
State Zip Code

212-479-5650
Telephone Number

OFFICE USE ONLY

Cashier / Search No.

PRU Staff
Accepted By/Initials:

Searched By:

Total Amount:

Note: Please make sure you complete this form and attach all required documents. Enclose a check or money order made payable to the **NYC Fire Department and a stamped self-addressed envelope (with postage).** Mail checks or money orders directly to the address and unit listed above. **DO NOT MAIL CASH.**

SECTION B **FUEL TANK REPORT - FEE $10.00 / PER REPORT**

440-448 Johnson Ave Block 2992, Lot 17
450 Johnson Ave, Block 2992, Lot 21
House Number Street Name

Brooklyn
Borough

79-81 Ingraham St, Block 2992, Lot 55

- [X] THE TOTAL AMOUNT AND SIZE OF EXISTING FUEL OIL / HEATING TANKS
- [X] THE TOTAL AMOUNT AND SIZE OF REMOVED OR SEALED FUEL OIL / HEATING TANKS
- [X] THE TOTAL AMOUNT AND SIZE OF EXISTING BURIED MOTOR VEHICLE TANKS
- [X] THE TOTAL AMOUNT AND SIZE OF REMOVED OR SEALED BURIED MOTOR VEHICLE TANKS
- [X] MOST RECENT TANK / PIPING TEST RESULTS
- [X] HISTORY OF BURIED TANKS LEAKS

Note: Requests will be responded to within 10 business days.

FIRE DEPARTMENT

9 METROTECH CENTER BROOKLYN, N.Y. 11201-3857

PUBLIC RECORDS UNIT
TANKS SECTION

Ref No: T- 58285

DEIRDRE CASEY
LANGAN ENGINEERING
360 WEST 31ST ST (8TH FL)
NEW YORK, NY 10001

Dear Customer / Representative,

We have completed a search for address and the requsted information listed below. In the "Status" box below, we have listed the results and any additional comments we may have regarding the search.

*Search Type Customer Requested	$40 - (Both) Fuel / Motor - Existing & Removed		
*Search Address	440 - 448 JOHNSON AVE		
*Borough	04 - Brooklyn		
*Payment Type	02-Check	*Payment No.	2884
*Data Entered	8/7/2019	*Entered By	AD
Account Number	06149207	Requested Folder	

No. of Tanks	No. of Gallons	Tank Type	Fuel Type	Conversion
01	1,080 Gallons	Fuel	FO-2	From Fuel to Gas

***Additional Information**

HISTORICAL SEARCH-SEE ATTACHMENT FOR MORE INFORMATION

***Status** Completed - Record found

IMPORTANT NOTICE: THIS REPORT IS NOT VALID IF ALTERED, CORRECTED OR WITHOUT FDNY CERTIFICATION STAMP AND UNIT EMPLOYEE'S SIGNATURE.

Place FDNY Certification Stamp Below

I CERTIFY THAT THIS IS A TRUE COPY OF AN ORIGINAL FIRE DEPT. RECORD, KEPT IN THE NORMAL COURSE OF BUSINESS
SIGN:_____

If you need further assistance or additional information, please call (718) 999-2441; 8 am - 4pm (Monday - Friday).

Thank you,

Public Records Representative

E- 8/7/2019 AD
C- 8/7/2019 AD

Date : 08/07/19 FPIMS Time : 08:48:29

****

* ACCOUNT RELATED DATA INQUIRY - ACCOUNT COVERAGE *

****

Account Number : 06149207 Owner Name : ENVELOPE MANUFACTURING
Date : 09/15/84 See List : 0
Comments : FUEL OIL 1080G #2 BURIED

Equipment Type	Equipment Sub Code	Number of Items	Floor
202	02	001	0

DATE: 08/07/19 F.P.I.M.S. TIME: 08:47:37

****

* I N Q U I R Y: A C C O U N T S B Y B U I L D I N G *

****

TYPE (B OR P): P - ACCOUNTS' ADDRESS>>> BORO: 4 BLDG #: 440
STREET == PREFIX: NAME: JOHNSON TYPE: AVE SUFFIX:
########## BIN: ##########

DO	P	ADMN	ACCT NO.	VO	OWNER NAME	TOTAL BAL. DUE	PRMT EXPDT
11	C	E237	6149207	1	ENVELOPE MANUFACTURING	$90.00	01/28/98
11	C	E237	6149207		DOOGLE ASS INC		06/30/85

DATE : 08/07/19 F.P.I.M.S. H I S T O R Y I N Q U I R Y TIME : 08:48:19

****

ACCOUNT NUMBER : 06149207 DISTRICT OFFICE : 11 ADMINISTRATIVE CO. : E237
ACCOUNT TYPE : 20 HAZARD RANK : ALPHA PREFIX : C NO FEE : N
Moved on: 02/03/98 Reason code: 0508 (VOID CONVERTED TO GAS-AFFIDAVIT PROVIDED)
<<<<< WRITE OFF INFORMATION >>>>>
Date : N/A Reason code: **** (<<< ACCOUNT NOT WRITTEN OFF >>>)

Owner Name : ENVELOPE MANUFACTURING No of Items : 01 Owner est : 05/28/86
Account Est : 06/29/84 Permit Exp Dt : 01/28/98 Last insp : 01/05/98
Last Billed : 01/15/98 Last Paid : 03/18/97 Paym Clear : N/A
Date Printed ---> Permit : 04/09/97 Insp Order : 10/15/97
Balance Due : 90.00 Fines Owed : 0.00 Yearly Fee : 90.00
Spr/Stp Typ : Violations : 1 Lien Excptn: 0 Return Mail : 0 Dup Bill : 0
Cash Aging : > 0 Out of Town : 0 See List : 0 Inspection Status : 6
Acctng Stat : A Permit Status : 2 N.G. Check : 0

Premises Address :	440	JOHNSON	AVE	112370000
Additional Info :	CO.			
Billing Address :	450	JOHNSON	AVE	112370000
Additional Info :				

DATE : 08/07/19 F.P.I.M.S. H I S T O R Y I N Q U I R Y TIME : 08:48:05

****

ACCOUNT NUMBER : 06149207 DISTRICT OFFICE : 11 ADMINISTRATIVE CO. : E237
ACCOUNT TYPE : 20 HAZARD RANK : ALPHA PREFIX : C NO FEE : N
Moved on: 07/22/86 Reason code: 0599 (CHANGE OF OWNER)
<<<<< WRITE OFF INFORMATION >>>>>
Date : N/A Reason code: **** (<<< ACCOUNT NOT WRITTEN OFF >>>)

Owner Name : DOOGLE ASS INC No of Items : 01 Owner est : 09/15/84
Account Est : 06/29/84 Permit Exp Dt : 06/30/85 Last insp : 06/30/81
Last Billed : N/A Last Paid : 06/22/84 Paym Clear : N/A
Date Printed ---> Permit : N/A Insp Order : N/A
Balance Due : 0.00 Fines Owed : 0.00 Yearly Fee : 35.00
Spr/Stp Typ : Violations : 0 Lien Excptn: 0 Return Mail : 0 Dup Bill : 0
Cash Aging : Out of Town : 0 See List : 0 Inspection Status : 5
Acctng Stat : 0 Permit Status : 1 N.G. Check : 0

Premises Address :	440	JOHNSON	AVE	112110000
Additional Info :				
Billing Address :	970	GRAND	ST	112110000
Additional Info :				

Function : 00

THERE ARE MULTIPLE HISTORY ACCOUNTS FOR THIS ACCT # : HIT XMIT FOR THE NEXT

I CERTIFY THAT THIS IS A TRUE COPY OF AN ORIGINAL FIRE DEPT. RECORD, KEPT IN THE NORMAL COURSE OF BUSINESS
SIGN:_____

FIRE DEPARTMENT

9 METROTECH CENTER BROOKLYN, N.Y. 11201-3857

PUBLIC RECORDS UNIT
TANKS SECTION

Ref No: T- 58286

DEIRDRE CASEY
LANGAN ENGINEERING
360 WEST 31ST ST (8TH FL)
NEW YORK, NY 10001

Dear Customer / Representative,

We have completed a search for address and the requsted information listed below. In the "Status" box below, we have listed the results and any additional comments we may have regarding the search.

*Search Type Customer Requested	$40 - (Both) Fuel / Motor - Existing & Removed		
*Search Address	450 JOHNSON AVE (B:2992/LOT:21)		
*Borough	04 - Brooklyn		
*Payment Type	02-Check	*Payment No.	2884
*Data Entered	8/7/2019	*Entered By	AD
Account Number	05681010	Requested Folder	

No. of Tanks	No. of Gallons	Tank Type	Fuel Type	Conversion
01	2,500 Gallons	Fuel	FO-2	From Fuel to Gas

***Additional Information**

HISTORICAL SEARCH-SEE ATTACHMENT FOR MORE INFORMATION

***Status** Completed - Record found

IMPORTANT NOTICE: THIS REPORT IS NOT VALID IF ALTERED, CORRECTED OR WITHOUT FDNY CERTIFICATION STAMP AND UNIT EMPLOYEE'S SIGNATURE.

Place FDNY Certification Stamp Below

I CERTIFY THAT THIS IS A TRUE COPY OF AN ORIGINAL FIRE DEPT. RECORD, KEPT IN THE NORMAL COURSE OF BUSINESS
SIGN:_____

If you need further assistance or additional information, please call (718) 999-2441; 8 am - 4pm (Monday - Friday).

Thank you,

_____
Public Records Representative

E- 8/7/2019 AD
C- 8/7/2019 AD

Date : 08/07/19 FPIMS Time : 09:04:07

****

* ACCOUNT RELATED DATA INQUIRY - ACCOUNT COVERAGE *

****

Account Number : 05681010 Owner Name : ENVELOPE MANUFACTURING
Date : 09/15/84 See List : 0
Comments : FO NO 2 LESS 2500G

Equipment Type	Equipment Sub Code	Number of Items	Floor
202	01	001	0

DATE: 08/07/19 F.P.I.M.S. TIME: 09:05:51

* I N Q U I R Y: A C C O U N T S B Y B U I L D I N G *

TYPE (B OR P): P - ACCOUNTS' ADDRESS>>> BORO: 4 BLDG #: 450
STREET == PREFIX: NAME: JOHNSON TYPE: AVE SUFFIX:
BIN: ##########

DO	P	ADMN	ACCT NO.	VO	OWNER NAME	TOTAL BAL. DUE	PRMT EXPDT
11	C	E237	5681010	1	ENVELOPE MANUFACTURING		01/28/93
11	C	E237	5681010		DOOGLE ASSOCIATES		01/31/86

DATE : 08/07/19 F.P.I.M.S. H I S T O R Y I N Q U I R Y TIME : 09:03:57

ACCOUNT NUMBER : 05681010 DISTRICT OFFICE : 11 ADMINISTRATIVE CO. : E237
ACCOUNT TYPE : 20 HAZARD RANK : ALPHA PREFIX : C NO FEE : N
Moved on: 01/08/93 Reason code: 0508 (VOID CONVERTED TO GAS-AFFIDAVIT PROVIDED)
<<<<< WRITE OFF INFORMATION >>>>>
Date : N/A Reason code: **** (<<< ACCOUNT NOT WRITTEN OFF >>>)

Owner Name : ENVELOPE MANUFACTURING No of Items : 01 Owner est : 05/28/86
Account Est : 03/30/84 Permit Exp Dt : 01/28/93 Last insp : 11/18/92
Last Billed : 12/16/92 Last Paid : 01/20/93 Paym Clear : 02/03/93
Date Printed ---> Permit : 02/12/92 Insp Order : 10/14/92
Balance Due : 0.00 Fines Owed : 0.00 Yearly Fee : 90.00
Spr/Stp Typ : Violations : 1 Lien Excptn: 0 Return Mail : 0 Dup Bill : 0
Cash Aging : >30 Out of Town : 0 See List : 0 Inspection Status : 6
Acctng Stat : A Permit Status : 0 N.G. Check : 0

Premises Address : 450 JOHNSON AVE 112370000
Additional Info : CORP.
Billing Address : 450 JOHNSON AVE 112370000
Additional Info :

DATE : 08/07/19 F.P.I.M.S. H I S T O R Y I N Q U I R Y TIME : 09:03:50

ACCOUNT NUMBER : 05681010 DISTRICT OFFICE : 11 ADMINISTRATIVE CO. : E237
ACCOUNT TYPE : 20 HAZARD RANK : ALPHA PREFIX : C NO FEE : N
Moved on: 06/24/86 Reason code: 0599 (CHANGE OF OWNER)
<<<<< WRITE OFF INFORMATION >>>>>
Date : N/A Reason code: **** (<<< ACCOUNT NOT WRITTEN OFF >>>)

Owner Name : DOOGLE ASSOCIATES No of Items : 01 Owner est : 09/15/84
Account Est : 03/30/84 Permit Exp Dt : 01/31/86 Last insp : 04/15/85
Last Billed : 04/25/85 Last Paid : 05/21/85 Paym Clear : N/A
Date Printed ---> Permit : N/A Insp Order : N/A
Balance Due : 0.00 Fines Owed : 0.00 Yearly Fee : 40.00
Spr/Stp Typ : Violations : 0 Lien Excptn: 0 Return Mail : 0 Dup Bill : 0
Cash Aging : Out of Town : 0 See List : 0 Inspection Status : 5
Acctng Stat : 0 Permit Status : 1 N.G. Check : 0

Premises Address : 450 JOHNSON AVE 112060000
Additional Info :
Billing Address : 314 WHITMAN DR 112110000
Additional Info :

Function : 00

THERE ARE MULTIPLE HISTORY ACCOUNTS FOR THIS ACCT # : HIT XMIT FOR THE NEXT

I CERTIFY THAT THIS IS A TRUE COPY OF AN ORIGINAL FIRE DEPT. RECORD, KEPT IN THE NORMAL COURSE OF BUSINESS
SIGN:

FIRE DEPARTMENT

9 METROTECH CENTER BROOKLYN, N.Y. 11201-3857

PUBLIC RECORDS UNIT
TANKS SECTION

Ref No: T- 58289

DEIRDRE CASEY
LANGAN ENGINEERING
360 WEST 31ST ST (8TH FL)
NEW YORK, NY 10001

Dear Customer / Representative,

We have completed a search for address and the requsted information listed below. In the "Status" box below, we have listed the results and any additional comments we may have regarding the search.

*Search Type Customer Requested	$40 - (Both) Fuel / Motor - Existing & Removed		
*Search Address	79 - 81 INGRAHAM STREET		
*Borough	04 - Brooklyn		
*Payment Type	02-Check	*Payment No.	2884
*Data Entered	8/7/2019	*Entered By	AD
Account Number	*None	Requested Folder	

No. of Tanks	No. of Gallons	Tank Type	Fuel Type	Conversion

***Additional Information**

HISTORICAL SEARCH-

***Status** Completed - Record not found

IMPORTANT NOTICE: THIS REPORT IS NOT VALID IF ALTERED, CORRECTED OR WITHOUT FDNY CERTIFICATION STAMP AND UNIT EMPLOYEE'S SIGNATURE.

Place FDNY Certification Stamp Below

I CERTIFY THAT THIS IS A TRUE COPY OF AN ORIGINAL FIRE DEPT. RECORD, KEPT IN THE NORMAL COURSE OF BUSINESS
SIGN: _____

If you need further assistance or additional information, please call (718) 999-2441; 8 am - 4pm (Monday - Friday).

Thank you,

_____
Public Records Representative

E- 8/7/2019 AD
C- 8/7/2019 AD

```
        DATE:  08/07/19          F.P.I.M.S.          TIME:  09:24:02
**********************************************************************************
*          I N Q U I R Y:    A C C O U N T S   B Y   B U I L D I N G           *
**********************************************************************************
 TYPE (B OR P): P -              ACCOUNTS' ADDRESS>>>   BORO: 4    BLDG #: 79
 STREET == PREFIX:       NAME: INGRAHAM               TYPE: ST     SUFFIX:
################################################    BIN:                ##########
DO  P  ADMN  ACCT NO. VO          OWNER NAME          TOTAL BAL. DUE   PRMT EXPDT
##################################################################################
```

FUNCTION CODE:

NO MORE ACCOUNTS FOR THIS BUILDING - USE FUNCTION KEYS OR TRANSMIT TO CONTINUE

I CERTIFY THAT THIS IS A TRUE
COPY OF AN ORIGINAL FIRE
DEPT. RECORD KEPT IN THE
NORMAL COURSE OF BUSINESS
SIGN:_____

FDNY Building Information Profile

08/07/19 09:21:49

Bin: 3070616

Total AKA Found: 1

BLOCK	LOT	BIN	LHND	HHND	STREET NAME	BOROUGH
02992	0055	3070616	79	81	INGRAHAM STREET	BROOKLYN

Summary

Num Siam Sprinkler	:	Sprinkler Type	:
Num Siam Standpipe	:	Sprinkler Type	:
Last BISP Insp Date	:	Last BISP Insp Status	:
Num of Violation Notices	: 0	Num of Violation Order	: 0
Has BISP Asbestos Abatement	: No		

Accounts

No Permit Accounts Found.

NOV

No Violation Notices Found.

Vio Orders

No Violation Orders Found.

I CERTIFY THAT THIS IS A TRUE COPY OF AN ORIGINAL FIRE DEPT. RECORD, KEPT IN THE NORMAL COURSE OF BUSINESS
SIGN:

Deirdre Casey

From: Philip Lynch
Sent: Friday, June 21, 2019 3:52 PM
To: 'recordsaccess@health.nyc.gov'
Cc: Deirdre Casey
Subject: 440-448 Johnson Avenue (Block 2992, Lot 17), 450 Johnson Avenue (also 83-89 Ingraham Street) (Block 2992, Lot 21), 79-81 Ingraham Street (Block 2992, Lot 55) Brooklyn, NY
Attachments: NYCDOH.pdf

Re: Freedom of Information Request
440-448 Johnson Avenue (Block 2992, Lot 17)
450 Johnson Avenue (also 83-89 Ingraham Street) (Block 2992, Lot 21)
79-81 Ingraham Street (Block 2992, Lot 55)
Brooklyn, New York
Langan Project No. 170588001

Dear Sir or Madam:

Pursuant to the Federal Freedom of Information Act (5 U.S.C 552 et seq.) dealing with the examination and duplication of documents maintained by public agencies, Langan is requesting any information or copies of files regarding environmental conditions on the above property, such as environmental permits, notices of violations, spill/discharge incidents, storage or disposal of hazardous substances, Underground Storage Tanks (USTs), Leaking Underground Storage Tanks (LTANKs), asbestos abatement, and any other environmental reports that your department may have.

The Subject Property is located at **440-448 Johnson Avenue, 450 Johnson Avenue (also 83-89 Ingraham Street) and 79-81 Ingraham Street** in **Brooklyn, New York**. The Subject Property comprised of three lots referenced as **Block 2992, Lots 17, 21, and 55**. The Subject Property is bound by parking lots for FedEx and LIRR to the north, two four-story industrial/commercial buildings to the east, a parking lot/storage area and a number of 1-2 story industrial/commercial buildings to the south, and a parking lot/storage area and a two-story industrial/commercial building to the west.

Please contact me at 212-479-5650 with any questions or send your response to my attention at dcasey@langan.com or at the below address:

Langan Engineering and Environmental Services, P.C.
21 Penn Plaza
360 West 31st Street, 8th floor
New York, New York 10001-2727

Thank you in advance for your cooperation.

Sincerely,

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.

Deirdre Casey
Staff Scientist

Philip Lynch
Administrative Assistant
Direct: 212.479.5469
File Sharing Link

LANGAN
Phone: 212.479.5400 Fax: 212.479.5444
21 Penn Plaza
360 West 31st Street, 8th Floor
New York, NY 10001-2727
www.langan.com

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A Carbon-Neutral Firm | Langan's goal is to be SAFE (Stay Accident Free Everyday)

LANGAN

Technical Excellence
Practical Experience
Client Responsiveness

June 21, 2019

New York City Department of Health and Mental Hygiene
Attn: Chari Anhouse, Esq.
42-09 28th Street, CN31
Long Island City, New York 11101

Re: Freedom of Information Request
440-448 Johnson Avenue (Block 2992, Lot 17)
450 Johnson Avenue (also 83-89 Ingraham Street) (Block 2992, Lot 21)
79-81 Ingraham Street (Block 2992, Lot 55)
Brooklyn, New York
Langan Project No. 170588001

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Please contact me at 212-479-5650 with any questions or send your response to my attention at dcasey@langan.com or at the below address:

Langan Engineering and Environmental Services, P.C.
21 Penn Plaza
360 West 31st Street, 8th floor
New York, New York 10001-2727

Thank you in advance for your cooperation.

Sincerely,

Langan Engineering, Environmental, Surveying and Landscape Architecture, D.P.C.

Deirdre Casey
Staff Scientist

FAX

To: **Philip Lynch**
Company:
Fax: 212-479-5444
Phone:

From: **bdelperc@health.nyc.gov**
Fax:
Phone:
E-mail: bdelperc@health.nyc.gov

NOTES:

FOIL # 2019FR01806

Date and time of transmission: Tuesday, June 25, 2019 3:45:42 PM
Number of pages including this cover sheet: 03

ATTN: PHILIP LYNCH

NEW YORK CITY DEPARTMENT OF
HEALTH AND MENTAL HYGIENE
Oxiris Barbot, MD
Acting Commissioner

Date: June 25, 2019

F.O.I.L. Requestor: Langan Engineering

Attention / File Number: Philip Lynch/ Deirdre Casey

Control Number: 2019FR01806

Name and Address Requested: Not Permitted
440-448 Johnson Avenue
Brooklyn, New York

Supplemental Address(es): **450 Johnson Avenue, Brooklyn, N.Y.**
79-81 Ingraham Street, Brooklyn, N.Y.

Dear Sir / Madam:

After a thorough search of our files, we did not find records for the following reason:

☐ A) No Records for the (Child / ren) have been located on the Lead Poisoning Prevention Programs's record system.

☒ B) No Environmental Records were found for the address and / or apartment requested.

☐ C) Printout of child's blood lead level, (copy attached), is the only information in the Lead Poisoning Prevention Program's record system.

Sincerely,

Ben Del Percio
Record Services Unit Coordinator

BD

ATTACHMENT E8 – NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION CLEAN AIR TRACKING SYSTEM RECORDS

Environmental Protection

Register with CATS
Login into CATS

NYC.gov always open

NYC DEP CATS Information

SEARCH INFORMATION

Searching For Data...

Contacting Database...Please Wait

Search By :	Premise Address
***Premise House# :**	450
***Premise Street :**	JOHNSON AVENUE
***Premise Borough :**	Brooklyn
***Captcha :**	Refresh Enter the text you see above:

Search Clear

7 records found.

House	Street	Borough	Premise	Owner	Status	ApplicationID
450	JOHNSON AVENUE	BROOKLYN		ROBERT HARPER	Cancelled	CA217593
450	JOHNSON AVENUE	BROOKLYN		ROBERT C. HARPER	Cancelled	PA068181
450	JOHNSON AVENUE	BROOKLYN		ENVELOPE MANUFACTURING, CO.	EXPIRED	PA076288
450	JOHNSON AVENUE	BROOKLYN	ENVELOPE MANUFACUTRERS CORP.	ENVELOPE MANUFACTURERS CORP.	CURRENT	CB206903
450	JOHNSON AVENUE	BROOKLYN		ENVELOPE MANUFACTURERS CO	Cancelled	CA167597

450	JOHNSON AVENUE	BROOKLYN		ENVELOPE MANUFACTURERS CO	Cancelled	CA258986
450	JOHNSON AVENUE	BROOKLYN		ENVELOPE MANUFACTURERS CO	Cancelled	PA066688

Please be advised that application numbers starting with 'C' are associated to boilers, 'P' are associated with industrials and 'G' are associated with Gas stations.

Environmental Protection

Register with CATS
Login into CATS

.gov always open

NYC DEP CATS Information

PREMISES: 450 JOHNSON AVENUE BROOKLYN BIN: 070612 BLOCK: 02992 LOT: 0021				
Owner: ENVELOPE MANUFACTURING, CO.	**Application #:** PA076288	**Type:** CERTIFICATE TO OPERATE - INDUSTRIAL	**Expiration Date:** 4/28/2018	
Business Type: PAPERANDPRINTINGPROCESSING	**Request Type:** Industrial Request Renewal CO	**Status:** EXPIRED	**Submitted Date:** NA	**Decision Date:** 8/18/1988
Boiler Make / Model: NA	**Fuel Type 1:** NA	**Fuel Type 2:** NA	**Heat Input (Million BTU/Hr.):** NA	
Burner Make / Model: NA	**Number of Identical Units:** 6			
	AKA : 89 INGRAHAM STREET BROOKLYN			

Environmental Protection

Register with CATS
Login into CATS

.gov always open

NYC DEP CATS Information

PREMISES: 450 JOHNSON AVENUE BROOKLYN BIN: 070612 BLOCK: 02992 LOT: 0021				
Owner: ROBERT C. HARPER	**Application #:** PA068181	**Type:** CERTIFICATE TO OPERATE - INDUSTRIAL	**Expiration Date:** 4/22/1988	
Business Type: NONE	**Request Type:** Cancellation - Industrial	**Status:** CANCELLED	**Submitted Date:** NA	**Decision Date:** 1/1/1900
Boiler Make / Model: NA	**Fuel Type 1:** NA	**Fuel Type 2:** NA	**Heat Input (Million BTU/Hr.):** NA	
Burner Make / Model: NA	**Number of Identical Units:** 25			
	AKA : 89 INGRAHAM STREET BROOKLYN			

Environmental Protection

Register with CATS
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NYC DEP CATS Information

PREMISES: 450 JOHNSON AVENUE BROOKLYN BIN: 070612 BLOCK: 02992 LOT: 0021				
Owner: ENVELOPE MANUFACTURERS CO	**Application #:** CA167597	**Type:** REGISTRATION - BOILER	**Expiration Date:** 9/18/2006	
Business Type: NA	**Request Type:** Cancellation - Boiler Registration	**Status:** CANCELLED	**Submitted Date:** NA	**Decision Date:** 9/11/1997
Boiler Make / Model: PEERLESS, JOT-9-FDA / PEERLESS, JOT-9-FDA	**Fuel Type 1:** NATURALGAS	**Fuel Type 2:** NONE	**Heat Input (BTU/Hr.):** 722000	
Burner Make / Model: ECONOMITE, F-400-33 / ECONOMITE, F-400-33	**Number of Identical Units:** 1			
	AKA : 89 INGRAHAM STREET BROOKLYN			

Environmental Protection

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NYC DEP CATS Information

PREMISES: 450 JOHNSON AVENUE BROOKLYN BIN: 070612 BLOCK: 02992 LOT: 0021				
Owner: ENVELOPE MANUFACTURERS CO	**Application #:** PA066688	**Type:** CERTIFICATE TO OPERATE - INDUSTRIAL	**Expiration Date:** 9/19/1998	
Business Type: NONE	**Request Type:** Cancellation - Industrial	**Status:** CANCELLED	**Submitted Date:** NA	**Decision Date:** 7/11/1988
Boiler Make / Model: NA	**Fuel Type 1:** NA	**Fuel Type 2:** NA	**Heat Input (Million BTU/Hr.):** NA	
Burner Make / Model: NA	**Number of Identical Units:** 25			
	AKA : 89 INGRAHAM STREET BROOKLYN			

Register with CATS
Login into CATS

NYC DEP CATS Information

PREMISES: 450 JOHNSON AVENUE BROOKLYN BIN: 070612 BLOCK: 02992 LOT: 0021				
Owner: ROBERT HARPER	**Application #:** CA217593	**Type:** REGISTRATION - BOILER	**Expiration Date:** 8/13/1999	
Business Type: NA	**Request Type:** Cancellation - Boiler Registration	**Status:** CANCELLED	**Submitted Date:** NA	**Decision Date:** 8/10/1993
Boiler Make / Model: PEERLESS UNKNOWN / PEERLESS UNKNOWN	**Fuel Type 1:** NO2FUEL	**Fuel Type 2:** NONE	**Heat Input (BTU/Hr.):** 0	
Burner Make / Model: CARLIN 201 CRD / CARLIN 201 CRD	**Number of Identical Units:** 1			
	AKA : 89 INGRAHAM STREET BROOKLYN			

Environmental Protection

Register with CATS
Login into CATS

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NYC DEP CATS Information

PREMISES: 450 JOHNSON AVENUE BROOKLYN BIN: 070612 BLOCK: 02992 LOT: 0021				
Owner: ENVELOPE MANUFACTURERS CO	**Application #:** CA258986	**Type:** REGISTRATION - BOILER	**Expiration Date:** 8/4/1990	
Business Type: NA	**Request Type:** Cancellation - Boiler Registration	**Status:** CANCELLED	**Submitted Date:** NA	**Decision Date:** 6/25/1986
Boiler Make / Model: U.S. RADIATOR-CAST IRON 7 SECTIONS / U.S. RADIATOR-CAST IRON 7 SECTIONS	**Fuel Type 1:** NO2FUEL	**Fuel Type 2:** NONE	**Heat Input (BTU/Hr.):** 0	
Burner Make / Model: CARLIN 501 CRD / CARLIN 501 CRD	**Number of Identical Units:** 1			
	AKA : 89 INGRAHAM STREET BROOKLYN			

Environmental Protection

Register with CATS
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NYC DEP CATS Information

PREMISES: 450 JOHNSON AVENUE BROOKLYN BIN: 070612 BLOCK: 02992 LOT: 0021				
Owner: ENVELOPE MANUFACTURERS CORP.	**Application #:** CB206903	**Type:** REGISTRATION - BOILER	**Expiration Date:** 11/10/2021	
Business Type: NA	**Request Type:** Renewal - Boiler	**Status:** CURRENT	**Submitted Date:** 8/3/2018	**Decision Date:** 8/6/2018
Boiler Make / Model: PEERLESS / SC-09	**Fuel Type 1:** NATURALGAS	**Fuel Type 2:** NONE	**Heat Input (BTU/Hr.):** 722000	
Burner Make / Model: POWERFLAME / J15A-10	**Number of Identical Units:** 1			
	AKA : 89 INGRAHAM STREET BROOKLYN			

Environmental Protection

Register with CATS
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NYC DEP CATS Information

SEARCH INFORMATION

Searching For Data...

Contacting Database...Please Wait

Search By :	Premise Address ▼
***Premise House# :**	440
***Premise Street :**	JOHNSON AVENUE
***Premise Borough :**	Brooklyn ▼
***Captcha :**	Refresh Enter the text you see above:

Search Clear

1 records found.

House	Street	Borough	Premise	Owner	Status	ApplicationID
440	JOHNSON AVENUE	BROOKLYN		ENVELOPE MFRS., CORP.	EXPIRED	PA039996

Please be advised that application numbers starting with 'C' are associated to boilers, 'P' are associated with industrials and 'G' are associated with Gas stations.

Environmental Protection

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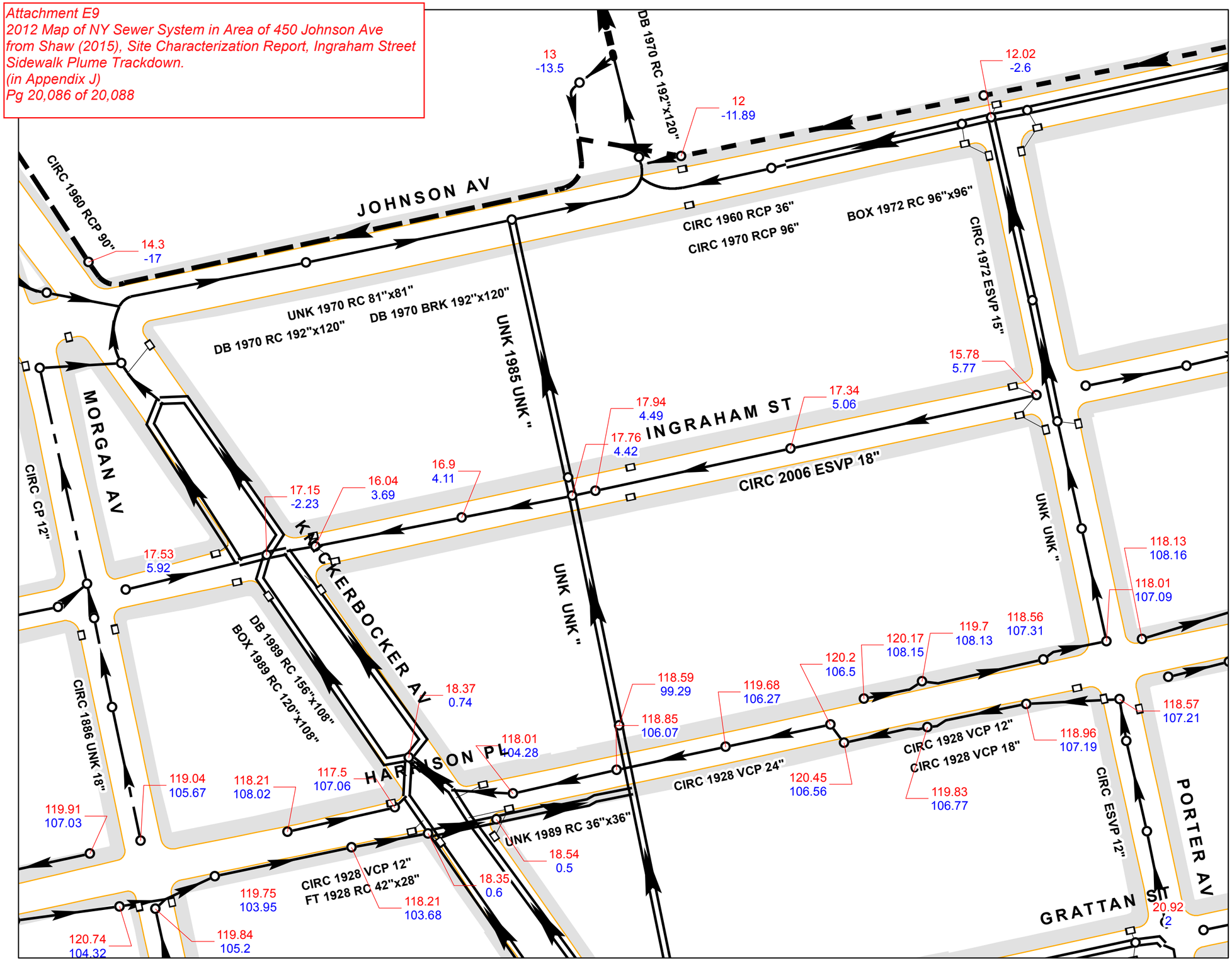
PREMISES: 440 JOHNSON AVENUE BROOKLYN BIN: 325627 BLOCK: 02992 LOT: 0017				
Owner: ENVELOPE MFRS., CORP.	**Application #:** PA039996	**Type:** CERTIFICATE TO OPERATE - INDUSTRIAL	**Expiration Date:** 4/28/2018	
Business Type: PAPERANDPRINTINGPROCESSING	**Request Type:** Industrial Request Renewal CO	**Status:** EXPIRED	**Submitted Date:** NA	**Decision Date:** 10/18/1996
Boiler Make / Model: NA	**Fuel Type 1:** NA	**Fuel Type 2:** NA	**Heat Input (Million BTU/Hr.):** NA	
Burner Make / Model: NA	**Number of Identical Units:** 1			
	AKA : 448 JOHNSON AVENUE BROOKLYN			

ATTACHMENT E9 – 2012 MAP OF NY SEWER SYSTEM, 450 JOHNSON AVE AREA

Attachment E9
2012 Map of NY Sewer System in Area of 450 Johnson Ave from Shaw (2015), Site Characterization Report, Ingraham Street Sidewalk Plume Trackdown.
(in Appendix J)
Pg 20,086 of 20,088



LEGEND:

NYC DEP

- Sanitary Sewer
- Storm Sewer
- Combined Sewer
- Combined Sewer Overflow
- Relief Storm Sewer
- Relief Combined Sewer
- Highway Drain
- Intercepting Sewer
- Intercepting Collector
- Branch Intercepting
- Intercepting Force Main
- Force Main
- Emergency Construction Sewer
- Catch Basin Connector
- Unknown Sewer
- Manhole
- Catch Basin
- Chamber
- Weir Chamber
- Regulator
- Tide Gate
- Outfall
- Headwall
- Culvert
- Bulkhead
- Pumping Station

NYS DOT

- Sewer
- Trough
- Catch Basin\Scupper Connector
- Temporary Connection and Plumber's Drain
- Manhole
- Catch Basin
- Chamber
- Outfall
- Headwall
- Culvert
- Bulkhead
- Pumping Station

Sewer Shape	Abbreviation
Double Circular	DCIR
Egg	EGG
Elliptical	ELP
Vertical Elliptical	VELP
Horizontal Elliptical	HELP
Box	BOX
Double Barrel	DB
Triple Barrel	TB
Quadruple Barrel	QB
Circular Barrel	CIRB
Oval	OVL
Flat Top	FT
Double Flat Top	DFT
Tunnel	TUN
Double Tunnel	DTUN
Circular Pipe	CIRC
Arch	ARCH
Irregular	IRRG
Unknown	UNK

Sewer Ownership	Abbreviation
Private	Pvt
Temporary Connection	TC
Plumber's Drain	PID
Triborough Bridge & Tunnel Authority	TBTA
Work Progress Administration	WPA

PIPE ANNOTATION
Pipe shown as shape, year of installation, material and pipe diameter.
Example; CIRC 1945 VCP 24"
Pipes with a second or height dimension will be displayed with the height dimension, in inches, directly after the diameter
Example BOX 1955 CIP 48" x 32"

RESPECTIVE BOROUGH HIGHWAY AND SEWER DATUMS
(ABOVE MEAN SEA LEVEL AT SANDY HOOK, NEW JERSEY)

BOROUGH	SEWER DATUM	HIGHWAY DATUM
BRONX	2.608 FEET	2.608 FEET
BROOKLYN	1.720 FEET	2.560 FEET
MANHATTAN	2.750 FEET	2.750 FEET
QUEENS	2.725 FEET	2.725 FEET
STATEN ISLAND	3.192 FEET	3.192 FEET

MANHOLE RIM AND INVERT ELEVATIONS,
WHERE AVAILABLE, ARE DISPLAYED BY COLOR

25.67 = Manhole Rim elevation

25.67 = Manhole Invert elevation

Sewer Mapping

NYC Department of Environmental Protection
Bureau of Water and Sewer Operations
59-17 Junction Boulevard, 3rd Floor
Corona, NY 11373-5108

Map Print Date: 3/9/2012

50 25 0 50 100 150 200 250 300
Feet

N W E S

Sewer Material	Abbreviation														
Brick	BRK	*Concrete Pipe*	CRTP	*Reinforced Concrete Culvert Pipe*	RCCP	*Wood*	WD	*Steel*	STL	*Liner Plate*	LRPL	*Block*	BLK
Reinforced Concrete Brick	RC/BR	*Reinforced Concrete*	RC	*Corrugated Metal Pipe*	CMP	*Wood Pipe*	WDP	*Steel Pipe*	STLP	*Reinforced Concrete Liner Plate*	RC LRPL	*Tile*	TILE
Cement Pipe	CMTP	*Reinforced Concrete Pipe*	RCP	*High Density Polyethylene Pipe*	HDPEP	*Clay Pipe*	CP	*Cast Iron*	CI	*Steel Liner Plate*	STL LRPL	*Stone*	STON
Asbestos Cement Pipe	ASBCMTP	*Precast Reinforced Concrete*	PRC	*Corrugated High Density Polyethylene Pipe*	CHDPEP	*Vitrified Clay Pipe*	VCP	*Cast Iron Pipe*	CIP	*Cast Iron Liner Plate*	CI LRPL	*Fiberglass*	FBGL
Concrete	CRT	*Precast Reinforced Concrete Pipe*	PRCP	*Polyvinyl Chloride Pipe*	PVCP	*Extra Strength Vitrified Clay Pipe*	ESVP	*Ductile Iron Pipe*	DIP	*Ductile Liner Plate*	DI LRPL	*Unknown*	UNK

This map is intended to be a schematic representation of the sewer system ONLY, and is not warranted to be accurate for construction and/or surveying purposes.

All warranties, UCC and otherwise, express or implied, including, warranties as to accuracy of data shown hereon and merchantability and fitness for a particular purpose are expressly disclaimed. All incidental, consequential or special damages arising out of or in connection with the use or performance of the data shown on the map are expressly disclaimed.
Map is not for public dissemination and is agreed by recipient to be destroyed upon completion of project

APPENDIX F

ASBESTOS CONTAINING MATERIAL AND LEAD BASED PAINT SURVEY REPORT

LANGAN

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Memorandum

300 Kimball Drive Parsippany, NJ 07054 T: 973.560.4900 F: 973.560.4901

To: Janet Frentzel, Prologis, Inc

From: Vijay Patel
Harsh Patel
Darshan Desai

Date: July 30, 2019

Re: Asbestos Containing Materials and Lead Containing Paint Survey Memo
450 Johnson Ave
440 & 450 Johnson Ave, Brooklyn, New York
Langan Project No.: 170588001

INTRODUCTION

The field survey of the subject sites (440/450 Johnson Ave, Brooklyn, NY) was conducted on July 10, 2019 by Langan's Harsh Patel, NYCDEP-certified asbestos investigator and NYSDOL-certified asbestos inspector. The objective of this limited survey was to identify the presence/absence of asbestos containing materials (ACM) and lead containing paint (LCP) that would have potential impact in connection with the purchase of the property. The following summarizes our findings.

The contracted and completed scope of services included sampling of building interior and external wall surface; Langan's scope of work did not include building's roofs and destructive sampling.

Certifications and Accreditations, Asbestos Laboratory Analytical Report and Chain of Custody are provided in the Attachments.

SUMMARY OF SURVEY AND FINDINGS

The findings of our survey are discussed below.

ACM Results

Twenty-five (25) representative bulk samples of suspect ACM were collected during the survey. Materials determined or assumed to be ACM are summarized in the table below:

Material	Material Location	Results	Estimated Quantity of ACM	
Pipe insulation (observed)	1st Floor - 440 Johnson Ave (2 Story Bld.)	ACM	4	LF
Pipe insulation (Estimated concealed)	440 & 450 Johnson Ave – all 3 Buildings	ACM	200	LF

Material	Material Location	Results	Estimated Quantity of ACM	
Door insulation	440 Johnson Ave (2 Story Bld.)	Assumed ACM	100	SF
Mastic/glue behind wooden wall panel	440 Johnson Ave (2 Story Bld.)	Assumed ACM	1,200	SF
Suspect flooring materials concealed below plywood (i.e. additional layers of floor tile, mastic, vapor barrier, etc.)	2nd Fl - 440 Johnson Ave (2 Story Bld.)	Assumed ACM	2,150	SF
Window caulking/glazing	Exterior	Assumed ACM	11	Unit
Built-up roofing/flashing/mastic materials	Main Roofs - 440 & 450 Johnson Ave - All 3 Buildings	Assumed ACM	36,000	SF

Materials determined to be non-ACM are summarized in Table 1 (attached).

LCP Results

Limited LCP screening of painted surfaces was conducted during our site visit. As per 40 CFR Part 745, Toxic Substances Control Act (TSCA), Title IV (Lead Exposure Reduction), the term ''lead-based paint'' means paint or other surface coatings that contain lead in excess of 0.5 percent by weight. Based on the lab results, all paint samples collected and analyzed were below 0.5 percent by weight; therefore, Non-LCP.

Refer to Table 2 in the attachments for a summary of test results.

RECOMMENDATIONS

ACM

Asbestos Control Program (ACP), Title 15, Chapter 1 of the New York City Department of Environmental Protection (NYCDEP) regulates all asbestos abatement activities occurring within the City of New York. The ACP regulations also require asbestos surveys and abatement work to be performed by a NYCDEP certified asbestos investigator and asbestos workers, respectively.

The New York City Department of Building (NYCDOB) requires an ACP notification to be included with the renovation/demolition permit applications. The notification is performed using ACP 5 or ACP 20/21 forms.

Asbestos containing materials were identified in buildings space. Refer to Table 1 for summary of asbestos survey findings.

LCP

Limited samples of painted surfaces were collected during our site visit. Based on the lab results, all paint samples collected and analyzed were below 0.5 percent by weight; therefore, Non-LCP. Overall, the painted surfaces were in fair to poor conditions.

Please note that although as per 40 CFR Part 745, TSCA, Title IV (Lead Exposure Reduction), the term ''lead-based paint'' means paint or other surface coatings that contain lead in excess of 1.0 milligrams per centimeter square or 0.5 percent by weight, the Occupational Safety and Health Administration (OSHA) considers any concentration of lead in paint to be lead containing paint. Regardless of the lead concentrations in paint, the contractor shall comply with 29 CFR 1926.62, OSHA regulations, and take precautionary measures for dust control and limit employee exposure to lead dust during the renovations/demolition.

Painted surfaces that would be impacted by planned activities such as drilling, cutting, scrapping, etc. and create dust should be properly addressed by following safe work practices, good housekeeping procedures and/or following proper abatement procedures. Grinding and sanding of paint without HEPA filter exhaust, open flame gas fired torch, unconfined abrasive blasting, and chemical strippers containing methylene chloride or other human carcinogenic chemicals are not recommended.

LIMITATIONS AND EXCEPTIONS

A full protocol ACM and LCP paint survey was not performed as part of our scope of work. Prior to performing any planned renovation and/or redevelopment activities, a full protocol asbestos survey of the buildings will be necessary to confirm the ACM findings.

ATTACHMENTS:

Table 1	Summary of Asbestos Survey Findings
Table 2	Summary of Bulk Paint Chip Sample Analysis

Attachments	Certifications and Accreditations, Asbestos Laboratory Analytical Report and Chain of Custody

\\langan.com\data\NYC\Data0\170588001\Project Data_Discipline\Environmental\Reports\ACM Due Diligence\2019-07-30 - 450 Johnson Ave - Preliminary Hazmat Survey Report.docx

TABLES

Table 1 - SUMMARY OF PRELIMINERY ASBESTOS ASSESSMENT FINDINGS
Prologis - 450 Johnson Ave
440 & 450 Johnson Ave, Brooklyn, NY

Material	Location	Survey Results	Estimated Quantity of ACM		Notes/Comments
ACM/Assumed FINDINGS					
Pipe insulation	1st Fl - 440 Johnson Ave (2 Story Bld)	ACM	4	LF	--
Pipe insulation estimated concealed within wall and ceiling cavities	440 & 450 Johnson Ave - All 3 Buildings	Assumed ACM	200	LF	Exposed heating pipes were either bare metal or were wrapped with fiberglass insulation. Pipe insulation is estimated concealed in wall, floor and ceiling cavities.
Door insulation	440 Johnson Ave (2 Story Bld)	Assumed ACM	100	SF	~ 5 doors
Mastic/glue behind wooden wall panel		Assumed ACM	1,200	SF	--
Suspect flooring materials concealed below plywood (i.e. additional layers of floor tile, mastic, vapor barrier, etc.)	2nd Fl - 440 Johnson Ave (2 Story Bld)	Assumed ACM	2,150	SF	Although FT-1, FT-2 & FT-3 were confirmed to be non-ACM, additional suspect materials may exist below plywood.
Window caulking/glazing	Exterior	Assumed ACM	11	Unit	Approximately eleven (11) window opening
Built-up roofing/flashing/mastic materials	Main Roofs - 440 & 450 Johnson Ave - All 3 Buildings	Assumed ACM	36,000	SF	--
Non-ACM FINDINGS					
Wall plaster patch (1 layer)	1st Fl - 440 Johnson Ave (2 Story Bld)	Non-ACM	--	--	The materials identified as Non-ACM are based on analysis of one sample of each material. A full protocol sampling as her EPA and NYSDOL regulations will be necessary inorder to deem a material as Non-ACM.
Sair wall plaster (1 layer)		Non-ACM	--	--	
Gypsum board		Non-ACM	--	--	
Joint compound		Non-ACM	--	--	
Ceiling plaster (2 layer)	2nd Fl - 440 Johnson Ave (2 Story Bld)	Non-ACM	--	--	
Wall plaster (2 layer)		Non-ACM	--	--	
12'' sq. grey ft		Non-ACM	--	--	
Glue associated with 12'' sq. grey ft		Non-ACM	--	--	
12'' sq. white ft		Non-ACM	--	--	
Glue associated with 12'' sq. white ft		Non-ACM	--	--	
Beige ft & mastic below		Non-ACM	--	--	
2' x 4' Ceiling panels with pin holes & grooves		Non-ACM	--	--	

Table 1 - SUMMARY OF PRELIMINERY ASBESTOS ASSESSMENT FINDINGS Prologis - 450 Johnson Ave 440 & 450 Johnson Ave, Brooklyn, NY					
Material	**Location**	**Survey Results**	**Estimated Quantity of ACM**		**Notes/Comments**
2' x 4' Ceiling panels with pin holes & large grooves	450 Johnson Ave (1 Story Bld)	Non-ACM	--	--	The materials identified as Non-ACM are based on analysis of one sample of each material. A full protocol sampling as her EPA and NYSDOL regulations will be necessary inorder to deem a material as Non-ACM.
Gypsum board		Non-ACM	--	--	
Joint compound		Non-ACM	--	--	
12'' sq. Brown ft & mastic		Non-ACM	--	--	
Wall plaster (2 layer)		Non-ACM	--	--	
Flue patch cement		Non-ACM	--	--	
Exterior stucco plaster		Non-ACM	--	--	

A material with asbestos content greater than one percent (>1.0%) is considered as an asbestos-containing material (ACM). Concentrations in weight percent.

Table 2 - SUMMARY OF BULK PAINT CHIP SAMPLE ANALYSIS Prologis - 450 Johnson Ave 440 & 450 Johnson Ave, Brooklyn, NY			
SAMPLE ID NUMBER	**DESCRIPTION OF HOMOGENEOUS MATERIAL**	**SAMPLE LOCATION**	**RESULTS**
ACM/Assumed FINDINGS			
P-1	Yellow paint chip sample on brick wall	1st Fl - 440 Johnson Ave (2 Story Bld)	0.014% WT
P-2	Beige paint chip sample on plaster wall	2nd Fl - 440 Johnson Ave (2 Story Bld)	0.033% WT
P-3	Yellow paint chip sample brick wall	440 Johnson Ave (1 Story Bld)	0.018% WT
P-4	Yellow paint chip sample on brick wall	450 Johnson Ave (1 Story Bld)	0.046% WT
P-5	Beige paint chip sample on plaster wall		<0.0080% WT

Notes: AS per 40 CFR Part 745, Title IV (Lead Exposure Reduction), lead based paint means lead in excess of 0.5% by weight. Occupational Safety and Health Administration (OSHA) considers any concentrations of lead in paint as lead containing paint.

WT = Concentractions is weight percent.

ATTACHMENTS

Certifications and Accreditations, Asbestos

Laboratory Analytical Report and Chain of Custody

LANGAN

Atlas Environmental Lab, Corp.
255 West 36th Street, Suite# 1503
New York, NY 10018
Phone:(212) 563-0400 Fax:(212) 563-0401
www.atlasenvironmentallab.com

Bulk Asbestos Report by PLM-TEM

Client: Langan Engineering and Environmental Services, Inc.
Project Name: Prologis - 450 Johnson Avenue
Project Number: 170588001
Project Address: 450 & 440 Johnson Avenue, Brooklyn, NY
Collected by: Client

AEL ID# BK0719225
Date Received: 7/13/2019
PLM Date Analyzed: 7/17/2019
TEM Date Analyzed: 7/18/2019
Report Date: 7/18/2019

Client ID#	Lab ID#	Description/ Location	Analyst Description	ORG%	All%	ASI%	PLM			TEM
							Fibrous%	Non Fibrous%	Asbestos% &Type	Asbestos% &Type
PI-1	BK0719225-1	Pipe Insulation - 1st Floor - 2 Story Building (440 Johnson Ave)	Grey, Homogeneous, Friable	Not Applicable			80%CELL	3%	**17%CHRY**	
PWA-1	BK0719225-2	Wall Plaster Patch (1 Layer) - 1st Floor - 2 Story Building (440 Johnson Avenue)	Grey, Homogeneous, Friable	Not Applicable			0%	100%	**NAD**	
SWP-1	BK0719225-3	Stair Wall Plaster (1 Layer) - 1st Floor - 2 Story Building (440 Johnson Avenue)	Grey, Homogeneous, Friable	Not Applicable			0%	100%	**NAD**	
SR-1	BK0719225-4	Gypsum Board - 1st Floor - 2 Story Building (440 Johnson Avenue)	Brown, Homogeneous, Friable	Not Applicable			5%CELL	95%	**NAD**	
SRJC-1	BK0719225-5	Joint Compound - 1st Floor - 2 Story Building (440 Johnson Avenue)	White, Homogeneous, Friable	Not Applicable			0%	100%	**NAD**	
CP-1	BK0719225-6A	Ceiling Plaster (2 Layers) - 2nd Floor - 2 Story Building (440 Johnson Ave)	Beige, Homogeneous, Friable	Not Applicable			0%	100%	**NAD**	
CP-1	BK0719225-6B	Ceiling Plaster (2 Layers) - 2nd Floor - 2 Story Building (440 Johnson Ave)	Grey, Homogeneous, Friable	Not Applicable			0%	100%	**NAD**	
WP-1	BK0719225-7A	Wall Plaster (2 Layers) - 2nd Floor - 2 Story Building (440 Johnson Ave)	White, Homogeneous, Friable	Not Applicable			0%	100%	**NAD**	
WP-1	BK0719225-7B	Wall Plaster (2 Layers) - 2nd Floor - 2 Story Building (440 Johnson Ave)	Grey, Homogeneous, Friable	Not Applicable			0%	100%	**NAD**	
FT-1	BK0719225-8A	12" Sq. Grey ft & Glue - 2nd Floor - 2 Story Building (440 Johnson Ave)	Grey, Homogeneous, Non-Fibrous	15.4	36.0	48.6	0%	100%	**NAD** Inconclusive	**NAD**

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Bulk Asbestos Report by PLM-TEM

Client: Langan Engineering and Environmental Services, Inc.
Project Name: Prologis - 450 Johnson Avenue
Project Number: 170588001
Project Address: 450 & 440 Johnson Avenue, Brooklyn, NY
Collected by: Client

AEL ID# BK0719225
Date Received: 7/13/2019
PLM Date Analyzed: 7/17/2019
TEM Date Analyzed: 7/18/2019
Report Date: 7/18/2019

Client ID#	Lab ID#	Description/ Location	Analyst Description	ORG%	All%	ASI%	PLM			TEM
							Fibrous%	Non Fibrous%	Asbestos% &Type	Asbestos% &Type
FT-1	BK0719225-8B	12" Sq. Grey ft & Glue - 2nd Floor - 2 Story Building (440 Johnson Ave)	Yellow, Homogeneous, Non-Fibrous	19.1	6.5	74.4	0%	100%	**NAD** Inconclusive	**TRACE CHRY**
FT-2	BK0719225-9A	12" Sq. White ft & Glue - 2nd Floor - 2 Story Building (440 Johnson Ave)	Grey, Homogeneous, Non-Fibrous	17.2	31.6	51.2	0%	100%	**NAD** Inconclusive	**NAD**
FT-2	BK0719225-9B	12" Sq. White ft & Glue - 2nd Floor - 2 Story Building (440 Johnson Ave)	Yellow, Homogeneous, Non-Fibrous	36.9	10.1	53.0	0%	100%	**NAD** Inconclusive	**TRACE CHRY**
FT-3	BK0719225-10A	Beige ft & Mastic Below FT-1 & FT-2 - 2nd Floor - 2 Story Building (440 Johnson Ave)	Grey, Homogeneous, Non-Fibrous	23.4	46.5	30.0	0%	100%	**NAD** Inconclusive	**NAD**
FT-3	BK0719225-10B	Beige ft & Mastic Below FT-1 & FT-2 - 2nd Floor - 2 Story Building (440 Johnson Ave)	Black, Homogeneous, Non-Fibrous	23.9	29.7	46.4	0%	100%	**NAD** Inconclusive	**NAD**
CPP-1	BK0719225-11	2' x 4' Ceiling Panel with Pin Holes and Grooves - 2nd Floor - 2 Story Building (440 Johnson Ave)	White/ Grey, Homogeneous, Non-Fibrous	24.8	73.4	1.9	0%	100%	**NAD** Inconclusive	**NAD**
CPP-2	BK0719225-12	2' x 4' Ceiling Panel with Pin Holes and Large Grooves - 1st Story Building (450 Johnson Avenue)	White/ Grey, Homogeneous, Non-Fibrous	20.1	62.6	17.3	0%	100%	**NAD** Inconclusive	**NAD**
SR-2	BK0719225-13	Gypsum Board - 1st Story Building (450 Johnson Avenue)	Grey, Homogeneous, Friable	Not Applicable			5%CELL	95%	**NAD**	
SRJC-2	BK0719225-14	Joint Compound - 1st Story Building (450 Johnson Avenue)	White, Homogeneous, Friable	Not Applicable			0%	100%	**NAD**	
FT-4	BK0719225-15	12" Sq. Brown ft & Mastic - 1st Story Building (450 Johnson Avenue)	Brown, Homogeneous, Friable	Not Applicable			0%	100%	**NAD**	

Atlas Environmental Lab, Corp.
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www.atlasenvironmentallab.com

Bulk Asbestos Report by PLM-TEM

Client:	Langan Engineering and Environmental Services, Inc.	**AEL ID#**	BK0719225
Project Name:	Prologis - 450 Johnson Avenue	**Date Received:**	7/13/2019
Project Number:	170588001	**PLM Date Analyzed:**	7/17/2019
Project Address:	450 & 440 Johnson Avenue, Brooklyn, NY	**TEM Date Analyzed:**	7/18/2019
Collected by:	Client	**Report Date:**	7/18/2019

Client ID#	Lab ID#	Description/ Location	Analyst Description	ORG%	AII%	ASI%	PLM			TEM
							Fibrous%	Non Fibrous%	Asbestos% &Type	Asbestos% &Type
WWP-1	BK0719225-16A	Wall Plaster (2 Layers) - 1st Story Building (450 Johnson Avenue)	White, Homogeneous, Friable	Not Applicable			0%	100%	**NAD**	
WWP-1	BK0719225-16B	Wall Plaster (2 Layers) - 1st Story Building (450 Johnson Avenue)	Brown, Homogeneous, Friable	Not Applicable			0%	100%	**NAD**	
FPC-1	BK0719225-17	Flue Patch Cement - 1st Story Building (450 Johnson Avenue)	Grey, Homogeneous, Friable	Not Applicable			0%	100%	**NAD**	
STC-1	BK0719225-18	Exterior Stucco Plaster - Exterior - 440 & 450 Johnson	Grey, Homogeneous, Friable	Not Applicable			0%	100%	**NAD**	

Quantitative Analysis (Semi/Full):Bulk Asbestos Analysis-PLM by EPA 600/M4-82-020 per 40 CFR or ELAP198.1 (friable) and 198.6 (NOB) samples for New York.

NAD=no asbestos detected, NA/PS=Not Analyzed/Positive Stop, Trace=<1%,FBGL=Fiberglass, CELL=Cellulose,CHRY=Chrysotile,Amo=Amosite,CRO=Crocidolite,ANTH=Anthophylite, TRE=Tremolite, ACT=Actinolite, NA=not applicable.

PLM is not consistently reliable in detecting Asbestos in floor coverings and similar non friable organically bound materials. NAD or Trace results by PLM are inconclusive.

TEM is currently the only method that can be used to determine if this material can be considered or treated as non asbestos containing in NY State.

All samples were prepared and analyzed in accordance with the EPA "TEM Method for Identifying and Quantifying Asbestos in Non-Fibrous Organically Bound Bulk Samples" ELAP 198.4".

ORG%=Ashed Organic%, AII= Acid Insoluble Inorganic%, ASI= Acid Soluble Inorganic%

This "Summary of Analytical Results "shall not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, ELAP or any agency of the U.S Government. The results relate only to the items tested. This report may not be reproduced, except in full, without the written approval of AEL .Atlas Environmental lab did not collect the analyzed samples and thus accepts no liability with regard to their collection and/or maintenance . AEL relies on client's data. The liability of Atlas Environmental Lab corp with respect to the services charged, shall in no event exceed the amount of the invoice.

NYSDOH ELAP#11999, NVLAP Lab Code: 500092-0 PLM Analyst: DK TEM Analyst: VR Approved by:

Bk0719225

LANGAN

300 Kimball Drive, Parsippany, NJ 07054
Phone: 973-560-4900 Fax: 973-560-4901

BULK SAMPLE
CHAIN OF CUSTODY RECORD / ANALYSIS REQUEST

Project Name: Prologis - 450 Johnson Ave
Address: 450 & 440 Johnson Ave, Brooklyn, NY
Sampled By / License # Harsh Patel / NYC153352
Langan Job No.: 170588001
Project Manager: Vijay Patel
Phone No: 973-560-4983
Sampling Date: 7/10/2019

	Sample ID Number	Description of Sample	Sample Location	Analysis Requested for Asbestos: PLM	PLM-NOB	TEM	Analysis Requested for Lead: AAS	TCLP	Analysis Requested for PCB: EPA Method 8082	Results
1	PI-1	Pipe insulation	1st FL - 2 Story Bld (440 Johnson Ave)	X						
2	PWP-1	Wall plaster patch (1 layer)		X						
3	SWP-1	Stair wall plaster (1 layer)		X						
4	SR-1	Gypsum board		X						
5	SRJC-1	Joint compound		X						
6	CP-1	Ceiling plaster (2 layers)	2nd FL - 2 Story Bld (440 Johnson Ave)	X						
7	WP-1	Wall plaster (2 layers)		X						
8	FT-1	12" sq. grey ft & glue			X	X				
9	FT-2	12" sq. white ft & glue			X	X				
10	FT-3	Beige ft & mastic below FT-1 & FT-2			X	X				
11	CPP-1	2' x 4' Ceiling panel with pin holes and grooves			X	X				
12	CPP-2	2' x 4' Ceiling panel with pin holes and large grooves	1 Story Bld (450 Johnson Ave)		X	X				

Comments: **Email results to: vpatel@langan.com,ddesai@langan.com, hpatel@langan.com**

Requested TAT for Asbestos /LBP	1 hr	6 hr	24 hr	48 hr	72 hr	5 days
						X

Requested TAT for PCB	12 hr	24 hr	48 hr	5+ days

Total No of Samples: 12

Laboratory Instructions: **Stop analysis @ 1st positive** (>1% by weight) for each homogenous sample group. Please analyze first floor tile mastic. If floor tile **mastic is positive (>1%) do not analyze the associated floor tile sample. Email results to: vpatel@langan.com**

Relinquished By:	Samples Received By:	Samples Analyzed By:
Signature: Harsh Patel	Signature: ST	Signature:
Date: 7/13/19	Date: 7/13/19 5:15PM	Date: 07/18/19
Time:	Time:	Time:
Company: LANGAN	Company:	

Bk0719225

LANGAN

300 Kimball Drive, Parsippany, NJ 07054
Phone: 973-560-4900 Fax: 973-560-4901

BULK SAMPLE
CHAIN OF CUSTODY RECORD / ANALYSIS REQUEST

Project Name: Prologis - 450 Johnson Ave
Address: 450 & 440 Johnson Ave, Brooklyn, NY
Sampled By / License # Harsh Patel / NYC153352

Langan Job No.: 170588001
Project Manager: Vijay Patel
Phone No: 973-560-4983
Sampling Date: 7/10/2019

Sample ID Number	Description of Sample	Sample Location	Analysis Requested for Asbestos: PLM	PLM-NOB	TEM	Analysis Requested for Lead: AAS	TCLP	Analysis Requested for PCB: EPA Method 8082	Results
13 SR-2	Gypsum board	1 Story Bld (450 Johnson Ave)	X						
14 SRJC-2	Joint compound		X						
15 FT-4	12" sq brown ft & mastic			X	X				
16 WWP-1	Wall plaster (2 layers)		X						
17 FPC-1	Flue patch cement		X						
18 STC-1	Exterior stucco plaster	Exterior - 440 & 450 Johnson	X						

Comments: **Email results to: vpatel@langan.com,ddesai@langan.com, hpatel@langan.com**

Requested TAT for Asbestos /LBP	1 hr	6 hr	24 hr	48 hr	72 hr	5 days
						X

Requested TAT for PCB	12 hr	24 hr	48 hr	5+ days

Total No. of Samples: 6

Laboratory Instructions: **Stop analysis @ 1st positive (>1% by weight) for each homogenous sample group. Please analyze first floor tile mastic. If floor tile mastic is positive (>1%) do not analyze the associated floor tile sample. Email results to: vpatel@langan.com**

Relinquished By:	Samples Received By:	Samples Analyzed By:
Signature: Harsh Patel	Signature:	Signature:
Date: 7/13/19	Date: 7/13/19	Date: 7/18/19
Time:	Time: 5:15PM	Time:
Company: LANGAN	Company	

EMSL Analytical, Inc.
528 Mineola Avenue, Carle Place, NY 11514
Phone/Fax: (516) 997-7251 / (516) 997-7528
http://www.EMSL.com carleplacelab@emsl.com

EMSL Order:	061915738
CustomerID:	LANG49
CustomerPO:	
ProjectID:	

Attn: **Vijay Patel**
Langan Engineering
300 Kimball Drive
Parsippany, NJ 07054

Phone:	(973) 560-4900
Fax:	(201) 794-7501
Received:	07/15/19 9:05 AM
Collected:	7/10/2019

Project: **Prologis-450 Johnson Ave, 450 & 440 Johnson Ave, Brooklyn,NY, Job # 170588001**

Test Report: Lead in Paint Chips by Flame AAS (SW 846 3051A/7000B)*

Client Sample Description	*Lab ID*	*Collected*	*Analyzed*	*Weight*	*Lead Concentration*
P-1	*061915738-0001*	7/10/2019	7/20/2019	0.2565 g	0.014 % wt
	Site: 1st Fl-2 Story Bld (440 Johnson Ave) Desc: Yellow Paint on Brick Wall				
P-2	*061915738-0002*	7/10/2019	7/20/2019	0.2629 g	0.033 % wt
	Site: 2nd Fl-2 Story Bld (440 Johnson Ave) Desc: Beige Paint on Plaster Wall				
P-3	*061915738-0003*	7/10/2019	7/20/2019	0.2778 g	0.018 % wt
	Site: 1 Story Bld (440 Johnson Ave) Desc: Yellow Paint on Brick Wall				
P-4	*061915738-0004*	7/10/2019	7/20/2019	0.2645 g	0.046 % wt
	Site: 1 Story Bld (440 Johnson Ave) Desc: Yellow Paint on Brick Wall				
P-5	*061915738-0005*	7/10/2019	7/20/2019	0.2658 g	<0.0080 % wt
	Site: 1 Story Bld (440 Johnson Ave) Desc: Beige Paint on Plaster Wall				

Alger Liang, Lead Laboratory Manager
or other approved signatory

*Analysis following Lead in Paint by EMSL SOP/Determination of Environmental Lead by FLAA. Reporting limit is 0.010% wt based on the minimum sample weight per our SOP. Unless noted, results in this report are not blank corrected. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities. Samples received in good condition unless otherwise noted. "<" (less than) result signifies the analyte was not detected at or above the warning limit. Measurement of uncertainty is available upon request. The QC data associated with the sample results included in this report meet the recovery and precision requirements unless specifically indicated otherwise. Definitions of modifications are available upon request.

Samples analyzed by EMSL Analytical, Inc. Carle Place, NY Lab ID 102344 is accredited by the AIHA LAP, LLC in the Environmental Lead accred. program for Lead in Dust, CT PH-0249, NYS ELAP 11469, CA 2339.

Initial report from 07/20/2019 12:13:26

LANGAN

300 Kimball Drive, Parsippany, NJ 07054
Phone: 973-560-4900 Fax: 973-560-4901

BULK SAMPLE
CHAIN OF CUSTODY RECORD / ANALYSIS REQUEST

RW

Project Name:	Prologis - 450 Johnson Ave	**Langan Job No.:**	170588001
Address:	450 & 440 Johnson Ave	**Project Manager:**	Vijay Patel
	Brooklyn, NY	**Phone No:**	973-560-4983
Sampled By / License #	Harsh Patel / NYC153352	**Sampling Date:**	7/10/2019

Sample ID Number	Description of Sample	Sample Location	Analysis Requested for Asbestos: PLM	PLM-NOB	TEM	Analysis Requested for Lead: AAS (RW)	TCLP	Analysis Requested for PCB: EPA Method 8082	Results
P-1	Yellow paint on brick wall	1st FL - 2 Story Bld (440 Johnson Ave)				X			
P-2	Beige paint on plaster wall	2nd FL - 2 Story Bld (440 Johnson Ave)				X			
P-3	Yellow paint on brick wall	1 Story Bld (440 Johnson Ave)				X			
P-4	↓	1 Story Bld (450 Johnson Ave)				X			
P-5	Beige paint on plaster wall	↓				X			

RECEIVED
EMSL ANALYTICAL, INC.
CARLE PLACE, NY
19 JUL 15 AM 9:05

Comments: **Email results to: vpatel@langan.com,ddesai@langan.com, hpatel@langan.com**

Requested TAT for Asbestos /LBP	1 hr	6 hr	24 hr	48 hr	72 hr	5 days X (RW)
Requested TAT for PCB	12 hr	24 hr	48 hr	5+ days		

Total No. of Samples: 5

Laboratory Instructions: **Stop analysis @ 1st positive (>1% by weight) for each homogenous sample group. Please analyze first floor tile mastic. If floor tile mastic is positive (>1%) do not analyze the associated floor tile sample. Email results to: vpatel@langan.com**

Relinquished By:	Harsh Patel	Samples Received By:		Samples Analyzed By:	Alicia Er
Signature		Signature		Signature	
Date	7/12/19	Date	7/13/19	Date	7/25/19
Time		Time	9:08 AM	Time	11:30 AM
Company. LANGAN		Company:			

OrderID: 061915738

061915738

APPENDIX G

RESUMES OF ENVIRONMENTAL PROFESSIONALS

MIMI RAYGORODETSKY

SENIOR ASSOCIATE / VICE PRESIDENT

ENVIRONMENTAL ENGINEERING

Ms. Raygorodetsky sources and directs large, complex environmental remediation and redevelopment projects from the earliest stages of pre-development diligence, through the remediation/construction phase, to long-term operation and monitoring of remedial systems and engineering controls. She has a comprehensive understanding of federal, state and local regulatory programs and she uses this expertise to guide her clients through a preliminary cost benefit analysis to select the right program(s) given the clients' legal obligations, development desires and risk tolerance. She is particularly strong at integrating the requirements of selected programs and client development needs to develop and design targeted and streamlined diligence programs and remediation strategies. Ms. Raygorodetsky is also highly skilled in integrating remediation with construction on large urban waterfront projects, which tend to more complex than landside projects.

EDUCATION

B.A., Biology and Spanish Literature
Colby College

AFFILIATIONS

New York Women Executives in Real Estate (WX), Member

New York Building Congress, Council of Industry Women, Committee Member

New York City Brownfield Partnership, Founding Member and President

NYC Office of Environmental Remediation Technical Task Force, Committee Member

SELECTED PROJECTS

- Battery Maritime Building (10 South Street), Phase I ESA, New York, NY
- 264 Fifth Avenue, Phase I ESA, New York, NY
- 262 Fifth Avenue, Phase I ESA, New York, NY
- Residential Development at 351-357 Broadway, Phase 1 ESA, New York, NY
- 450 Union Street, Phase I and Phase II Remediation (NYS DEC Brownfield Cleanup Program), New York, NY
- Residences at 100 Barrow Street, Phase I ESA, New York, NY
- Residences at 2253-2255 Broadway, Phase I and Phase II Services, New York, NY
- Prince Point, Phase I ESA, Staten Island, NY
- 787 Eleventh Avenue (Office Building Renovation), Phase I UST Closure, New York, NY
- 42-02 Crescent Street Redevelopment, Phase I and II Environmental, Long Island City, NY
- 25 Kent Avenue, Due Diligence for Purchase of a Brownfields Location, Brooklyn, NY
- Ferry Point Waterfront Park, Redevelopment of a Former Landfill into a Park, Bronx, NY
- Echo Bay Center, NYS DEC Brownfield Cleanup Program, New York, NY
- 420 Kent Avenue, NYS DEC Brownfield Cleanup Program, Brooklyn, NY
- 416 Kent Avenue, NYS DEC Brownfield Cleanup Program, Brooklyn, NY
- ABC Blocks 25-27 (Mixed-Use Properties), Brownfield Cleanup Program, Long Island City, NY
- Residences at 22-12 Jackson Avenue, Due Diligence for Building Sale, Long Island City, NY
- 218 Front Street/98 Gold Street, Planning and Brownfield Consulting, Brooklyn, NY
- 39 West 23rd Street, E-Designation Brownfield, New York, NY

ROBERT (RORY) S. JOHNSTON, PE, BCEE

PRINCIPAL/VICE PRESIDENT

ENVIRONMENTAL & GEOTECHNICAL ENGINEERING

Mr. Johnston's consulting career spans over 30 years ranging from geotechnical engineering on large industrial projects to environmental investigation and remediation. At Langan a key part of his role is to lead client development in various market sectors, including an emphasis on the oil and gas markets.

Mr. Johnston's consulting career spans over 30 years ranging from geotechnical engineering on large industrial projects to environmental investigation and remediation, including over 20 years of experience with with the PANYNJ managing large multi- disciplinary environmental and engineering projects. His experience includes all aspects of geotechnical engineering for a wide range of industrial, commercial, private, and government clients. He has been involved in the geotechnical design and construction management of a wide range of infrastructure projects around the nation, major improvements at all NYC airports, baseball stadiums, landfills, refineries, LNG facilities, industrial developments, and more. Mr. Johnson has conducted and directed extensive site investigations, developed geotechnical and environmental solutions, and provided oversight of the implementation of these solutions.

SELECTED PROJECTS

- 33-35 Wycoff Ave and 267 Starr Street, Brooklyn, NY
- 521-539 4th Ave, Brooklyn, NY
- Amerada Hess: Hess Brooklyn Terminal, Brooklyn, NY
- Gowanus Canal Northside, Brooklyn, NY
- Harbor Charlie Pier Rehabilitation, Brooklyn NY
- 558 Grand Concourse, Bronx, NY
- American Airlines - Hangar 5 Spill, Flushing, NY
- American Airlines Terminal 8&9 Redevelopment, JFK Airport, New York, NY
- American Airlines: LaGuardia Airport Redevelopment, New York, NY
- British Airways - Terminal 7 Remediation, Jamaica, NY
- Geotechnical Investigations at Baseball Stadium, Staten Island NY
- New York City Water Tunnel Claims Contract, New York, NY
- Bayway Refinery Lagoon, Linden NJ
- Broes Superfund Project: Gloucester County, NJ
- City of Jersey City: Linden Avenue Site, Jersey City, NJ
- City of Newark: Albert Steel Drum, Newark NJ
- City of Newark: Environmental Services, Newark NJ
- Conoco/Phillips 66: Bayway Refinery, Linden, NJ
- Exxon: Bayway Geotechnical Evaluation, Linden, NJ
- Hanger 10 Project at JFK Airport, New York, NY
- Hudson River Waterfront Park, New York, NY
- Jersey City v. Honeywell: Study Area SA6-N Jersey City, NJ
- John F. Kennedy Airport: Terminal 4 Redevelopment Project, New York, NY

EDUCATION

M. S., Civil Engineering
University of California

B.S., Civil Engineering
Rutgers University

B.A., English
Rutgers University

PROFESSIONAL REGISTRATION

Professional Engineer (PE) in CA, NJ, NY, PA, KS, CO, TX, AZ, ND, WV

Registered Geotechnical Engineer in CA

AFFILIATIONS

American Concrete Institute

American Society of Civil Engineers

Association of Firms Practicing in Geosciences, Past President

American Academy of Environmental Engineers

American Water Works Association

Chi Epsilon

JULIA LEUNG, PE

PROJECT ENGINEER

ENVIRONMENTAL ENGINEERING & WATER RESOURCES

Ms. Leung is an environmental engineer working in the New York Metro area. Her projects involve the investigation and assessment of environmental systems including physical/chemical processes, water chemistry, environmental system analysis, solid waste and water resources engineering, stormwater design and hydrology.

SELECTED PROJECTS

- Phase I ESA, Various Locations, NYC and Westchester County, NY
- 420 Kent Avenue, Brooklyn, NY
- BAM North Tower, Brooklyn, NY
- Phase II ESI, FedEx Distribution Facility (830 Fountain Avenue), Brooklyn, NY
- Phase II ESI (627 Smith Street), Brooklyn, NY
- 340 Court Street, Brooklyn, NY
- Greenpoint Landing, Brooklyn, NY
- 80 Flatbush Avenue, Brooklyn, NY
- Phase II ESI, 412 East 90th Street, New York, NY
- West and Watts Development, New York, NY
- 203 East 92nd Street, Mixed-Use Building, New York, NY
- Waste Classification and Lead Delineation Investigation (261 Hudson Street), New York, NY
- Waste Classification Investigation (41-43 East 22nd Street), New York, NY
- Columbia University, Manhattanville Campus, New York, NY
- Riverside Building 5, New York, NY
- Condominium at 200 East 79th Street, New York, NY
- Mercedes Benz of Manhattan (536 West 41st Street), New York, NY
- 460 Washington Street, New York, NY
- 208 East 79th Street, New York, NY
- 320 Fordham Landing, Bronx, NY
- ABC Block 25, ABC Block 26, ABC Block 27, Long Island City, NY
- 2409 Jerome Avenue, Bronx, NY
- Bronx Point, Bronx, NY
- 4650 Broadway, New York, NY
- 445 Gerard Avenue and 414 Gerard Avenue, Bronx, NY

EDUCATION

M.E., Environmental Engineering
Cornell University

B.S., Biological Engineering (Environmental Studies Concentration)
Cornell University

PROFESSIONAL REGISTRATION

Professional Engineer (PE) in NY

10-Hour OSHA

AFFILIATIONS

American Society of Civil Engineers (ASCE)

DEIRDRE CASEY

STAFF SCIENTIST

ENVIRONMENTAL ENGINEERING

Deirdre Casey is an environmental engineer with experience in environmental field investigations, data summary and evaluation, and remedial phases report writing.

SELECTED PROJECTS

- Brooklyn Navy Yard Dry Dock, Brooklyn, NY
- 64 University Place, New York, NY
- NYCHPD 705 10th Avenue, Affordable Housing Development, New York, NY
- 50 Hudson Yards, New York, NY
- Former Texaco Refinery, Bayonne, NJ
- Langer Transport Corporation, Jersey City, NJ
- 350 Warren Street, Jersey City, NJ
- Parcel G Elizabeth, NJ
- The Greens at Florham Park, Florham Park, NJ
- 10 US Route 46 Due Diligence, Hackettstown, NJ
- 175 Jersey Avenue, Lake Hopatcong, NJ
- Axiall Sale, Piscataway, NJ
- Barnish, Dover, NJ
- Berry Plastics, Piscataway NJ
- Block 4001, Asbury Park, NJ
- Campbells World Headquarters Daycare Facility, Camden, NJ
- CCIA Parking Garage, Camden, NJ
- Chevron/Ortho, South Plainfield, NJ
- Collegiate Development, New Brunswick, NJ
- Comar Glass Vineland Compliance Services, Vineland, NJ
- Equus/CarterRdWWTPSandBeds/Hopewell NJ
- Former Horseman Doll Factory, Trenton, NJ
- Former Schmid Labs Woodland Park, Little Falls, NJ
- Georgia Gulf, Piscataway, NJ
- Haddon Redevelopment, Haddon Township, NJ
- Honeywell Highland Park, Highland Park, NJ
- Industrial Property Trust, Piscataway, NJ
- K Hov Vintage Park Due Diligence, East Brunswick, NJ
- Market Street Shopping Center, Saddle Brook, NJ
- Marpal Landfill Pilot Test, West Long Branch, NJ
- Metro Packaging ISRA Services, Wayne, NJ
- Millhill Biennial Certification, Ewing, NJ
- Modern Trend Auto Body, Sayreville, NJ
- Monmouth Consumer Staples, Eatontown, NJ
- NJESH Early Removal and Demolition, Trenton, NJ
- Palisades Park, Palisades Park, NJ
- Penny Plate Inc. Remedial Investigation, Berlin Township, NJ
- Pulte Group, Highlands, NJ
- Red Bank Charter School, Red Bank, NJ
- Robert Wood Johnson AMBI Building, New Brunswick, NJ

EDUCATION

B.S., Environmental Science
Rutgers University

PROFESSIONAL REGISTRATION

10-Hour OSHA

AFFILIATIONS

New Jersey Licensed Site Remediation Professionals Association

New Jersey Society of Women Environmental Professionals

New Jersey Water Environmental Association

Phase II Environmental Site Investigation
450 Johnson Avenue
Brooklyn, New York

Prepared for:

Prologis, Inc.
Pier 1, Bay 1
San Francisco, California

Prepared by:

Langan Engineering, Environmental, Surveying,
Landscape Architecture and Geology, D.P.C.
21 Penn Plaza
360 West 31st Street, 8th Floor
New York, New York 10001

Mimi S. Raygorodetsky
Senior Associate/Vice President

Robert (Rory) S. Johnston, PE
Vice President

24 September 2019
170588001

24 September 2019

Ms. Janet Frentzel
Prologis, Inc.
Pier 1, Bay 1
San Francisco, California 94111

Subject: Phase II Environmental Site Investigation
450 Johnson Avenue
Brooklyn, New York
Langan Project: 170588001

Dear Ms. Frentzel:

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan) is submitting the enclosed *Phase II Environmental Site Investigation (ESI) – 450 Johnson Avenue, Brooklyn, New York*. Our scope of services for this project consisted of advancing exploratory soil borings to 21 feet below ground surface and collecting and analyzing soil, groundwater, sub-slab soil vapor and indoor air samples.

We appreciate the opportunity to assist you with this project. If you have questions or need information clarified, please call Mr. Andrew Kerr at (510) 874-7015.

Sincerely,

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.

Andrew Kerr, P.G. (Calif)
Associate

Robert (Rory) S. Johnston, P.E.
Principal/Vice President

170588001

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Appendix E	Analytical Laboratory Reports

PHASE II ENVIRONMENTAL SITE INVESTIGATION
450 Johnson Avenue
Brooklyn, New York

1.0 INTRODUCTION

This Phase II Environmental Site Investigation (ESI) was performed for the property referred to as 450 Johnson Avenue (the Site). The Site is a 0.80-acre parcel of land in the East Williamsburg neighborhood of Brooklyn, New York. The Site is located on the city block bound by Johnson Avenue to the north, Porter Avenue to the east, Ingraham Street to the south, and Knickerbocker Avenue to the west. A site location map is provided as **Figure 1** and a sampling location plan is provided as **Figure 2.**

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C (Langan) conducted a Phase I Environmental Site Assessment (ESA) for the Site in July 2019. The results of the assessment identified two Recognized Environmental Conditions (RECs) and two Business Environmental Risks (BERs).

This Phase II ESI was performed to obtain additional environmental information regarding the two RECs. This summary report describes the scope of services conducted and the results of the investigation. Background information is presented below, with additional information available in the Phase I ESA report (Langan, 2019).

2.0 BACKGROUND

2.1 Site

The Site is comprised of Kings County Tax Block 2992, Lots 17, 21, and 55 and is located in an industrial and commercial section of the East Williamsburg neighborhood of Brooklyn. The Site is developed with three inter-connected buildings and a parking lot:

Lot 17: a two-story, 2,500 square foot (ft^2) warehouse and office building and one-story, 7,500 ft^2 warehouse

Lot 21: a one-story, 20,000 ft^2 warehouse

Lot 55: a 5,000 ft^2 asphalt-paved parking lot

The warehouses at the Site are interconnected and used for envelope manufacturing.

2.2 Phase I ESA Findings

The Phase I ESA for Site was conducted in July 2019 as referenced above. The findings of the assessment included the identification of two RECs and two BERs as summarized below:

REC 1 – Current and Historical Site Use

REC 2 – Current and Historical Operations of Surrounding Properties

BER 1 – Historic Fill

BER 2 – Asbestos Containing Material (ACM) and Lead Based Paint (LBP)

Additional detail regarding these findings is provided in the Phase I ESA report, dated August 23, 2019 (Langan, 2019).

This Phase II ESI was designed to collect additional information regarding the RECs.

3.0 PHASE II EVALUATIONS

3.1 Scope and Timing

Langan completed the following scope of services as part of this Phase II ESI:

- Investigated the floor drain network, the potential subsurface municipal sewer line on-property, and potential presence underground storage tanks (USTs).
- Collected 19 soil samples from 16 exploratory soil borings advanced to a maximum depth of 21 feet below ground surface (bgs).
- Collected seven groundwater samples from six temporary wells.
- Collected three co-located sub-slab vapor and indoor air samples.

The Phase II ESI scope of services was completed between July 15 and 19, 2019.

A summary of the analysis performed on soil, groundwater, soil vapor and indoor air samples is presented in **Table 1**, with the location of completed investigation points shown on **Figure 2.**

3.2 Field Investigation Methods

The field investigation methods used to complete the Phase II ESI are summarized below. The activities are described in the general order of completion.

Pre-investigation Tasks

The soil and groundwater sampling was completed after the following pre-investigation tasks:

- Eastern Environmental Solutions, Inc. (Eastern) of Manorville, New York submitted a New York State One Call ticket prior to the initiation of drilling activities. Utility mark outs were limited to public property (i.e. the street and sidewalk immediately adjoining the Site to the north and south).
- Proposed boring locations were located to investigate RECs identified in the Phase I ESA and to evaluate the subsurface conditions on each of the different lots. The tentative locations of each boring were spray-painted on the surface of the Site.

Geophysical

Prior to intrusive drilling activities, Subsurface Environmental Technologies Inc. (SET) of Pennington, New Jersey conducted a geophysical survey on July 15, 2019. The geophysical survey was observed by a Langan field scientist and included the use of ground penetrating radar (GPR) and electromagnetic (EM) detectors to attempt to locate potential subsurface utilities, USTs and/or subsurface structures and to clear proposed boring locations. Borings were relocated as necessary to avoid buried structures. The geophysical report prepared by SET is included in **Appendix A**.

Exploratory Borings and Soil Sampling

Sixteen (16) exploratory borings were drilled between July 16 and 19, 2019. Borings were advanced by Eastern using a portable Geoprobe 420M direct push machine rig. The boreholes were advanced by hydraulically pushing a 2.25-inch diameter stainless steel sampler containing 3-foot-long acetate liners into the subsurface. The boreholes were advanced to between 6 and 21 feet bgs. Groundwater was typically encountered at 8 to 15 feet bgs.

Soils were logged based on the Unified Soil Classification System (USCS) system, with completed boring logs are included in **Appendix B**. Soils retrieved from the acetate liner were screened for the presence of volatile organic compounds (VOCs) using a photo-ionization detector (PID) with a 10.6 eV bulb and calibrated with 100 parts per million (ppm) isobutylene reference gas.

Nineteen (19) soil samples were collected, including 17 samples from the historic fill layer and one sample and a duplicate from the native soil. Samples were collected by removing the soil in the acetate liner from the chosen sample depth and placing the soil into laboratory-provided containers. Sample jars were sealed and stored in a cooler with ice for transport to the analytical laboratory.

Temporary Monitoring Wells and Groundwater Sampling

Six borings were converted to temporary monitoring wells by inserting a 1-inch diameter poly-vinyl chloride (PVC) casing into select soil boreholes. The temporary well annulus was packed with No. 2 sand. The wells were gauged with a precleaned oil/water interface probe to the nearest 0.01 foot to measure static groundwater levels prior to sampling. Prior to sampling, a peristaltic pump fitted with dedicated, disposable polyethylene tubing was used to purge each groundwater monitoring well. Monitoring well effluent was pumped into a flow-through cell with a water quality monitoring probe attached. The probe was used to monitor pH, conductivity, turbidity, dissolved oxygen, temperature, and oxidation-reduction potential. Groundwater samples were collected into laboratory-supplied sample jars using low flow techniques.

Sample jars were secured in plastic bags or laboratory-provided, bubble-wrap pouches, and stored in a cooler with ice for transport to the analytical laboratory. Dissolved metals samples were filtered in the field using a 10 micron filter and appropriately denoted on the chain of custody. Groundwater sampling logs are provided in **Appendix C**.

Sub-slab Vapor and Indoor Air Sampling

Three sub-slab soil vapor points were installed using the New York State Department of Health (NYSDOH) Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006) and its subsequent updates. Sub-slab vapor points were installed using a portable Geoprobe 420M direct push machine rig to about 2 inches beneath the base of the foundation slab. The vapor collection points consisted of 2-inch-long probes and inert polyethylene. The annulus (i.e., the sampling zone) around the probe was filled with a No. 2 sand followed by a hydrated bentonite seal to the top of the floor slab.

Before collecting vapor samples, a minimum of three implant volumes (i.e., the volume of the sample probe and tubing) was purged from each sample port at a rate of less than 0.2 liters per minute while monitoring for VOCs using a RAE Systems MultiRAE® meter.

A helium tracer gas was used consistent the NYSDOH protocols to confirm the integrity of each soil vapor sampling point seal before and after sampling. The tracer gas was introduced into a container, which shrouded the vapor point and seal. Helium was measured from the sampling tube and inside the container. If the sample tubing contained more than 10% of the tracer gas concentration that was introduced into the container, then the seal was considered compromised. Sub-slab vapor construction and sampling logs are provided in **Appendix D**.

The co-located indoor air samples were collected at a height above the ground to represent the breathing zone (about 3 to 5 feet). Sub-slab vapor and indoor air samples were collected over an 8-hour sampling period.

Laboratory Analysis

The soil, groundwater, sub-slab vapor, and indoor air samples were transported to a NYSDOH Environmental Laboratory Approval Program (ELAP)-certified laboratory (Alpha Analytical, Inc. of Westborough, MA [ELAP ID #11148]). Soil analysis included target compound list (TCL) VOCs, TCL semivolatile organic compounds (SVOCs), target analyte list (TAL) metals and/or polychlorinated biphenyls (PCBs). Groundwater analysis included TCL VOCs, TCL SVOCs, and dissolved metals. Sub-slab vapor and indoor air samples were analyzed for VOCs.

4.0 RESULTS

4.1 Geophysical Survey

The geophysical survey was conducted across the Site, with the exception of areas blocked by manufacturing equipment. The geophysical survey revealed the following:

- Inferred subsurface conveyance piping connecting the floor drains in the northeast portion of Lot 21.
- A septic tank in a subsurface vault in the northeast portion of Lot 21, with subsurface drain lines from the nearby floor drains in the area appearing to trace toward and connecting to the tank.
- No indicators of the potential sewer or combined sewer relief line discussed in the Phase I ESA (Langan, 2019). The sewer relief line may still exist onsite as the vertical extent of the geophysical survey was limited to about 5 feet bgs given the presence of a reinforced concrete slab and fill material.
- No observed geophysical patterns or anomalies indicative of a UST.

4.2 Lithology and Presence of Groundwater

The lithology encountered at the Site included a surficial layer of 5-inch thick asphalt or 6-inch thick concrete, underlain by historic fill to depths of about 8 to 17 feet bgs. Historic fill generally consisted of gray, orange brown, and brown silt and sand with varying amounts of brick, glass, coal, coal ash,

and tile pieces. Petroleum-like odors and/or elevated PID readings were encountered/measured in SB03 from 10 to 14 feet bgs, SB04 from 8 to 15 feet bgs, and SB16 from 0.5 to 6 feet bgs.

Native soil underlying historic fill was identified from about 8 feet to 21 feet bgs (deepest boring terminus) and generally consisted of brown, orange brown, brown and gray silty fine sand with varying amounts of gravel, clay, organics and silt. Bedrock was not encountered during this investigation.

Groundwater was encountered between about 8 and 15 feet bgs.

4.3 Soil Analytical Results

Soil analytical results from 19 soil samples, including one duplicate, are summarized in **Table 2**. The table includes applicable reference soil cleanup objectives. A copy of the laboratory analytical reports is attached in **Appendix E**.

The following is a summary of the results:

- Selected VOCs were detected, but only one result (vinyl chloride at 15 mg/kg) was at a concentration above the Restricted Use Commercial (RUC) or Restricted Use Industrial (RUI) Soil Cleanup Objectives (SCOs).
- Periodic SVOCs were also detected, but only benzo(a)pyrene and dibenzo(a,h)anthracene in samples from soil borings SB08, SB09, SB10, and SB15 were at concentrations above the RUC or RUI SCOs.
- Metal detections, but with only four compounds (arsenic, barium, lead, and mercury) detected at concentrations above the RUC SCOs. Also, the detections above the RUC SCO were in only five of the 19 samples, including the samples from soil borings SB07, SB09, SB11, SB13 and SB16. Only one metal (arsenic) in one sample (SB07_4.5-5.0), was detected at a concentration above the RUI SCO.
- PCBs not detected in any of the collected soil samples.

4.4 Groundwater Analytical Results

Groundwater analytical results from the seven groundwater samples, including one duplicate, are summarized in **Table 3**. The tables include applicable reference standards and guidance values. A copy of the laboratory analytical reports is attached in **Appendix E**.

The following is a summary of the results:

- Eleven VOCs, including 1,2,4,5-tetramethylbenzene, chloroform, cis-1,2-dichloroethene, isopropylbenzene, n-butylbenzene, n-propylbenzene, sec-butylbenzene, tert-butyl methyl ether, tetrachloroethene (PCE), trichloroethene (TCE), and vinyl chloride, were detected at concentrations above the New York State Department of Environmental Conservation (NYSDEC) Technical and Operation Guidance Series (TOGS) 1.1.1. Ambient Water Quality Standards and Guidance Values for Class GA Groundwater (SGVs). The detections above SGVs were in four of the seven temporary groundwater monitoring wells, including wells TMW03, TMW04, TMW07, and TMW08.

- Six SVOCs, including benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and indeno(1,2,3-c,d)pyrene, were detected at concentrations above the SGVs. The detections above SGVs were in six of the seven temporary groundwater monitoring wells, including wells TMW02, TMW03, TMW04, TMW07, and TMW08.

- Four dissolved metals, including iron, magnesium, manganese, and sodium, were detected at concentrations above the SGVs. The detections above SGVs were in each of temporary groundwater monitoring wells.

4.5 Sub Slab Soil Vapor and Indoor Air Analytical Results

Air analytical results from the three co-located sub-slab vapor and indoor air samples are summarized in **Table 4**. The tables include applicable reference guidance values. A copy of the laboratory analytical reports is attached in **Appendix E**.

A summary of the sub-slab vapor and indoor results is the following:

- Petroleum-related and chlorinated VOCs were detected in sub-slab soil vapor samples. Total VOCs were detected at concentrations ranging from 2,907 micrograms per cubic meter (µg/m^3) in SSV03 to 5,593 µg/m^3 in SSV01. Total VOCs were detected in indoor air samples at concentrations ranging from 305 µg/m^3 in IA01 to 989 µg/m^3 in IA02.

- VOCs in indoor air were not detected above the NYSDOH Air Guidance Values (AGVs).

New York State currently does not have standards or criteria for allowable concentrations of VOCs in soil vapor. In lieu of regulatory standards, Decision Matrices published in the 2006 NYSDOH Soil

Vapor Intrusion Guidance, updated in 2017, were used to evaluate sub-slab vapor and indoor air concentrations. NYSDOH Decision Matrices (Matrices A, B, and C) address the compounds PCE, TCE, 1,1,1-trichloroethane (1,1,1-TCA), 1,1-dichloroethene, cis-1,2-dichloroethene, vinyl chloride, methylene chloride and carbon tetrachloride. The comparison indicate the following items:

- Sub-slab and indoor air concentrations of PCE, 1,1,1-TCA, 1,1-dichloroethene, cis-1,2-dichloroethene, vinyl chloride, and carbon tetrachloride yield recommendations ranging from "no further action" to "identify source and resample or mitigate".

- Sub-slab and indoor air concentrations of carbon tetrachloride in SSV01 and IA01 yields a recommendation of "monitor".

- Sub-slab and indoor air concentrations of TCE in SSV02 and IA02 yields a recommendation of "monitor".

- Sub-slab and indoor air concentrations of methylene chloride in SSV03 and IA03 yields a recommendation of "identify sources and resample or mitigate".

5.0 FINDINGS

The following is a summary of findings from the Phase II ESI:

- Floor drains with a network of subsurface conveyance piping area present in the northeast portion of Lot 21. A septic tank was identified in this same area, with the geophysical surveys suggesting the conveyance piping of the floor drains route to the tank.

- Historical fill is present from surface grade to approximately 8 feet bgs, with groundwater present at a depth of approximately 8 to 15 feet bgs. The presumed groundwater flow direction is to the north, based on the location of the English Kills waterway and groundwater maps from the Ingraham St Sidewalk site.

- An area of weathered petroleum appears located in the northeast portion of Lot 21 based on field observations and the presence of petroleum related compounds identified in groundwater samples from wells TMW03 and TMW04. The source is unknown, but the proximity of this area to the nearby partial cellar is noted, given that it houses the existing facility boiler and formerly housed an oil-powered boiler.

- Impacts typically associated with urban fill including periodic detections of SVOCs (specifically PAHs) and metals are present in surficial soils at the Site. Detections of SVOCs ranged from 0.28 mg/kg to 4.3 mg/kg, but with only four results of benzo(a)pyrene (2, 2, 2.3, and 4.3 mg/kg) being over the RUI SCO. Detections of metals were variable, but with only the detection of arsenic in one sample at 67 mg/kg being above the RUI SCO.

- Chlorinated VOC impacts appear to principally be PCE, TCE, vinyl chloride, and breakdown products in groundwater, with some detections of vinyl chloride and the cis and trans 1,2-dichloroethethene (DCE) compounds in a water –bearing zone depth soil sample in the boring SB08 area. There is a known historic presence of CVOCs in groundwater in the Ingraham Street Sidewalk project, which adjoin the Site to the south[1]. Generally, concentrations of CVOCs in groundwater at the Site were highest in TMW07 and TMW08 along the southern boundary, appearing to grade to lower or not detected at TMW04 located in the northeast part of the Site. Concentrations of CVOCs in TMW07 and TMW08 ranged from 32 ug/L to 250 ug/L, one to two orders of magnitude lower than concentrations of CVOCs observed in wells in the Ingraham Sidewalk site, which had detections of 620 ug/L of PCE and 13,000 ug/L of cis 1,2-DCE in 2012, and 540 ug/L of vinyl chloride and 1,800 ug/L of cis 1,2-DCE in 2014. The soil CVOC results were more limited, with only one exceedance of the RUC SCO (vinyl chloride at 15 mg/kg) and each of the detections being in a 14 to 14.5 foot sample from boring SB08, which was co-located with temporary well TMW08. The detected CVOC concentrations in both soil and groundwater likely represent the known CVOCs from an off-site source rather than a source within the Site, given the concentration gradient of CVOCs and the historic northward direction of groundwater flow.

- Petroleum-related and chlorinated VOCs were detected in sub-slab soil vapor and indoor air samples, but with none of the indoor air results being in excess of NYSDOH AGVs. The total VOCs detected in sub-slab vapor ranged from 2,907 µg/m^3 in SSV03 to 5,593 µg/m^3 in SSV01, with detections in indoor air ranging from 305 µg/m^3 in IA01 to 989 µg/m^3 in IA02. When applying sub-slab vapor and indoor air samples to the NYSDOH Decision Matrices, the resulting recommendations range from "no further action" to

[1] Regulatory site Ingraham Street Sidewalk GW (case ID No. 224142) is an active site in the New York State Hazardous Waste Program. This listing includes groundwater identified in the Ingraham Street sidewalk as impacted with CVOCs exceeding applicable groundwater standards.

"monitor". Detected concentrations of VOCs in indoor air did not exceed NYSDOH AGVs.

REFERENCES

Langan, 2019. Phase I Environmental Site Assessment 450 Johnson Avenue, Brooklyn, New York. 23 August 2019.

The Shaw Group Inc, 2015. Final Site Characterization Report, Rev. 2; Ingraham Street Sidewalk Plume Trackdown. 1 February 2015

TABLES

Table 1
Phase II Environmental Site Investigation
Sample Summary Table

450 Johnson Avenue
Brooklyn, New York
Langan Project No.: 170588001

Sample No.	Lot	Sample Location	Sample ID	Sample Depth/ Screened Interval (feet bgs)	Sample Date	Analyses
Soil						
1	Lot 17	SB01	SB01_1.0-1.5	1 - 1.5	7/17/2019	VOCs, SVOCs, PCBs, Total Metals
2			SB01_8.0-8.5	8 - 8.5		
3		SB02	SB02_8.0-8.5	8 - 8.5		VOCs, SVOCs, Total Metals
4		SB11	SB11_5.0-5.5	5 - 5.5		
5		SB12	SB12_6.5-7.0	6.5 - 7	7/18/2019	
6		SB14	SB14_4.5-5.0	4.5 - 5		VOCs, SVOCs, PCBs, Total Metals
7		SB18	SB18_4.0-4.5	4 - 4.5	7/19/2019	VOCs, SVOCs, Total Metals
8	Lot 21	SB03	SB03_14.0-14.5	14 - 14.5	7/16/2019	VOCs, SVOCs, PCBs, Total Metals
9		SB04	SB04_11.0-11.5	11 - 11.5		VOCs, SVOCs, Total Metals
10		SB08	SB08_5.0-5.5	5 - 5.5	7/18/2019	
11			SB08_14.0-14.5	14 - 14.5		
12		SB09	SB09_3.0-3.5	3 - 3.5	7/17/2019	
13		SB13	SB13_8.0-8.5	8 - 8.5	7/16/2019	
14	Lot 55	SB07	SB07_4.5-5.0	4.5 - 5	7/18/2019	VOCs, SVOCs, PCBs, Total Metals
15		SB10	SB10_5.0-5.5	5 - 5.5	7/19/2019	VOCs, SVOCs, Total Metals
16		SB15	SB15_8.0-8.5	8 - 8.5		
17		SB16	SB16_3.0-3.5	3 - 3.5		VOCs, SVOCs, PCBs, Total Metals
18		SB17	SB17_13.0-13.5	13 - 13.5		
Groundwater						
1	Lot 17	TMW01	TMW01_071719	5 - 20	7/17/2019	VOCs, SVOCs, Dissolved Metals
2		TMW02	TMW02_071819	5 - 15	7/18/2019	
3	Lot 21	TMW03	TMW03_071719	5 - 20	7/17/2019	
4		TMW04	TMW04_071719	5 - 20		
5		TMW08	TMW08_071819	10 - 20	7/18/2019	
6	Lot 55	TMW07	TMW07_071919	5 - 25	7/19/2019	
Soil Vapor						
1	Lot 17	IA01	IA01_071819	-	7/18/2019	VOCs
2		IA02	IA02_071919	-	7/19/2019	
3		SSV01	SSV01_071819	1.5 - 2.5	7/18/2019	
4		SSV02	SSV02_071919	1.5 - 2.5	7/19/2019	
5	Lot 21	IA03	IA03_071919	-		
6		SSV03	SSV03_071919	1.5 - 2.5		
Quality Assurance/Quality Control						
1	Lot 17	TMW02	DUP02_071819	5 - 15	7/18/2019	VOCs, SVOCs, Dissolved Metals
2	Lot 21	SB03	DUP01_071619	14 - 14.5	7/16/2019	VOCs, SVOCs, PCBs, Total Metals
3	N/A	Trip Blank	TB_071919	N/A		VOCs

Notes:

1. VOC = volatile organic compound
2. SVOC = semivolatile organic compound
3. PCB = polychlorinated biphenyl
4. N/A = Not applicable
5, IA = Indoor air
6. Indoor air samples were colleced at about 3 to 5 feet above the ground surface

Table 2
Phase II Environmental Site Investigation
Soil Sample Analytical Results Summary
450 Johnson Avenue
Brooklyn, New York
Langan Project No.: 170588001

Lot	NYSDEC Part 375 Restricted Use Commercial SCOs	NYSDEC Part 375 Restricted Use Industrial SCOs	Lot 17											
Location			SB01		SB01		SB02		SB11		SB12		SB14		SB18	
Sample ID			SB01_1.0-1.5		SB01_8.0-8.5		SB02_8.0-8.5		SB11_5.0-5.5		SB12_6.5-7.0		SB14_4.5-5.0		SB18_4.0-4.5	
Laboratory ID			L1931524-01		L1931524-03		L1931524-02		L1931524-05		L1931803-06		L1931803-08		L1932118-06	
Sample Date			7/17/2019		7/17/2019		7/17/2019		7/17/2019		7/18/2019		7/18/2019		7/19/2019	
Sample Depth (feet bgs)			1-1.5		8-8.5		8-8.5		5-5.5		6.5-7		4.5-5		4-4.5	
Volatile Organic Compounds (mg/kg)																
1,2,4,5-Tetramethylbenzene	- -	- -	0.0022	U	0.0019	U	0.0023	U	0.0022	U	0.0021	U	0.0018	U	0.0025	U
1,2,4-Trimethylbenzene	190	380	0.0022	U	0.0019	U	0.0023	U	0.0022	U	0.0021	U	0.0018	U	0.0025	U
1,3,5-Trimethylbenzene (Mesitylene)	190	380	0.0022	U	0.0019	U	0.0023	U	0.0022	U	0.0021	U	0.0018	U	0.0025	U
1,4-Diethyl Benzene	- -	- -	0.0022	U	0.0019	U	0.0023	U	0.0022	U	0.0021	U	0.0018	U	0.0025	U
4-Ethyltoluene	- -	- -	0.0022	U	0.0019	U	0.0023	U	0.0022	U	0.0021	U	0.0018	U	0.0025	U
Acetone	500	1,000	0.011		0.0062	J	0.012	U	0.015		0.022		0.0083	J	0.012	U
Benzene	44	89	0.00055	U	0.00048	U	0.00058	U	0.00054	U	0.00053	U	0.00045	U	0.00062	U
Chloroform	350	700	0.0017	U	0.0014	U	0.0017	U	0.0016	U	0.0016	U	0.0014	U	0.00089	J
Chloromethane	- -	- -	0.0044	U	0.0038	U	0.0046	U	0.0043	U	0.0043	U	0.0036	U	0.005	U
Cis-1,2-Dichloroethene	500	1,000	0.0011	U	0.00095	U	0.0012	U	0.0011	U	0.0011	U	0.00091	U	0.0012	U
Cymene	- -	- -	0.0011	U	0.00095	U	0.0012	U	0.0011	U	0.0011	U	0.00091	U	0.0012	U
Ethylbenzene	390	780	0.0011	U	0.00095	U	0.0012	U	0.0011	U	0.0011	U	0.00091	U	0.0012	U
Isopropylbenzene (Cumene)	- -	- -	0.0011	U	0.00095	U	0.0012	U	0.0011	U	0.0011	U	0.00091	U	0.0012	U
Methyl Ethyl Ketone (2-Butanone)	500	1,000	0.011	U	0.0095	U	0.012	U	0.011	U	0.011	U	0.0091	U	0.012	U
Naphthalene	500	1,000	0.0044	U	0.0038	U	0.0046	U	0.0043	U	0.0043	U	0.0036	U	0.005	U
n-Butylbenzene	500	1,000	0.0011	U	0.00095	U	0.0012	U	0.0011	U	0.0011	U	0.00091	U	0.0012	U
n-Propylbenzene	500	1,000	0.0011	U	0.00095	U	0.0012	U	0.0011	U	0.0011	U	0.00091	U	0.0012	U
o-Xylene (1,2-Dimethylbenzene)	- -	- -	0.0011	U	0.00095	U	0.0012	U	0.0011	U	0.0011	U	0.00091	U	0.0012	U
Sec-Butylbenzene	500	1,000	0.0011	U	0.00095	U	0.0012	U	0.0011	U	0.0011	U	0.00091	U	0.0012	U
T-Butylbenzene	500	1,000	0.0022	U	0.0019	U	0.0023	U	0.0022	U	0.0021	U	0.0018	U	0.0025	U
Tert-Butyl Methyl Ether	500	1,000	0.0022	U	0.0002	J	0.0023	U	0.00023	J	0.00028	J	0.0018	U	0.0025	U
Tetrachloroethene (PCE)	150	300	0.00055	U	0.00048	U	0.00058	U	0.00054	U	0.0021		0.00045	U	0.0022	
Toluene	500	1,000	0.0011	U	0.00095	U	0.0012	U	0.0011	U	0.0011	U	0.00091	U	0.0012	U
Total 1,2-Dichloroethene (Cis and Trans)	- -	- -	0.0011	U	0.00095	U	0.0012	U	0.0011	U	0.0011	U	0.00091	U	0.0012	U
Total Xylenes	500	1,000	0.0011	U	0.00095	U	0.0012	U	0.0011	U	0.0011	U	0.00091	U	0.0012	U
Trans-1,2-Dichloroethene	500	1,000	0.0017	U	0.0014	U	0.0017	U	0.0016	U	0.0016	U	0.0014	U	0.0019	U
Trichloroethene (TCE)	200	400	0.00055	U	0.00048	U	0.00019	J	0.0024		0.00053	U	0.013		0.00062	U
Vinyl Chloride	13	27	0.0011	U	0.00095	U	0.0012	U	0.0011	U	0.0011	U	0.0004	J	0.0012	U
Semivolatile Organic Compounds (mg/kg)																
2,4-Dinitrotoluene	- -	- -	0.19	U	0.19	U	0.2	U	0.22	U	0.19	U	0.18	U	0.19	U
2-Methylnaphthalene	- -	- -	0.03	J	0.23	U	0.24	U	0.16	J	0.22	U	0.22	U	0.032	J
2-Methylphenol (o-Cresol)	500	1,000	0.19	U	0.19	U	0.2	U	0.22	U	0.19	U	0.18	U	0.19	U
3 & 4 Methylphenol (m&p Cresol)	- -	- -	0.27	U	0.28	U	0.29	U	0.31	U	0.27	U	0.26	U	0.27	U
Acenaphthene	500	1,000	0.11	J	0.15	U	0.16	U	0.48		0.15	U	0.036	J	0.28	
Acenaphthylene	500	1,000	0.077	J	0.15	U	0.16	U	0.034	J	0.15	U	0.14	U	0.029	J
Anthracene	500	1,000	0.32		0.11	U	0.12	U	0.86		0.048	J	0.074	J	0.54	
Benzo(a)Anthracene	5.6	11	0.88		0.11	U	0.022	J	1.3		0.14		0.21		1.2	
Benzo(a)Pyrene	1	1.1	0.78		0.15	U	0.16	U	0.96		0.16		0.23		0.92	
Benzo(b)Fluoranthene	5.6	11	0.96		0.11	U	0.12	U	1.2		0.17		0.25		1.1	
Benzo(g,h,i)Perylene	500	1,000	0.44		0.15	U	0.16	U	0.43		0.081	J	0.1	J	0.52	
Benzo(k)Fluoranthene	56	110	0.34		0.11	U	0.12	U	0.45		0.054	J	0.091	J	0.43	
Benzyl Butyl Phthalate	- -	- -	0.19	U	0.19	U	0.2	U	0.22	U	0.19	U	0.18	U	0.19	U
Biphenyl (Diphenyl)	- -	- -	0.43	U	0.44	U	0.46	U	0.49	U	0.42	U	0.42	U	0.43	U
Bis(2-Ethylhexyl) Phthalate	- -	- -	0.19	U	0.19	U	0.2	U	0.22	U	0.19	U	0.18	U	0.19	U
Carbazole	- -	- -	0.1	J	0.19	U	0.2	U	0.41		0.02	J	0.043	J	0.18	J
Chrysene	56	110	0.81		0.11	U	0.12	U	1.1		0.13		0.2		0.97	
Dibenz(a,h)Anthracene	0.56	1.1	0.1	J	0.11	U	0.12	U	0.14		0.023	J	0.034	J	0.14	
Dibenzofuran	350	1,000	0.076	J	0.19	U	0.2	U	0.35		0.19	U	0.03	J	0.12	J
Fluoranthene	500	1,000	1.9		0.11	U	0.041	J	2.9		0.31		0.51		2.3	
Fluorene	500	1,000	0.09	J	0.19	U	0.2	U	0.42		0.19	U	0.034	J	0.21	
Indeno(1,2,3-c,d)Pyrene	5.6	11	0.46		0.15	U	0.16	U	0.5		0.091	J	0.13	J	0.6	
Naphthalene	500	1,000	0.058	J	0.19	U	0.2	U	0.21	J	0.19	U	0.027	J	0.043	J
Phenanthrene	500	1,000	1.4		0.11	U	0.03	J	3.5		0.22		0.4		2.2	
Phenol	500	1,000	0.19	U	0.19	U	0.2	U	0.22	U	0.19	U	0.18	U	0.19	U
Pyrene	500	1,000	1.7		0.11	U	0.035	J	2.4		0.28		0.42		2	
Polychlorinated Biphenyls (mg/kg)																
PCB-1260 (Aroclor 1260)	- -	- -	0.0368	U	0.0372	U	NA		NA		NA		0.0355	U	NA	
PCB-1268 (Aroclor 1268)	- -	- -	0.0368	U	0.0372	U	NA		NA		NA		0.0355	U	NA	
Total PCBs	1	25	0.0368	U	0.0372	U	NA		NA		NA		0.0355	U	NA	
Inorganics (mg/kg)																
Aluminum	- -	- -	6,610		7,760		6,150		6,150		5,340		6,400		6,310	
Antimony	- -	- -	1.3	J	0.764	J	1.02	J	1.36	J	2.01	J	2.03	J	0.648	J
Arsenic	16	16	5.75		2.5		4.15		6.5		11.2		5.18		5.9	
Barium	400	10,000	68.4		33.6		60.8		84.8		94.9		81.8		260	
Beryllium	590	2,700	0.336	J	0.355	J	0.411	J	0.385	J	0.331	J	0.436		0.228	J
Cadmium	9.3	60	1.49		1.09		1.7		1.67		0.896	U	0.871	U	0.394	J
Calcium	- -	- -	2,820		570		1,200		1,690		4,270		1,880		55,700	
Chromium, Total	- -	- -	15.5		14		17.6		12.1		13.8		14.6		12.2	
Cobalt	- -	- -	7.5		7.79		9.86		6.49		5.76		6.57		5.28	
Copper	270	10,000	44.9		12.8		30		43.7		38.2		32.5		23.8	
Iron	- -	- -	16,100		15,400		17,200		18,700		16,800		27,000		13,200	
Lead	1000	3,900	172		5.75		95.9		369		193		170		167	
Magnesium	- -	- -	1,900		2,050		1,330		1,210		1,640		2,530		1,880	
Manganese	10,000	10,000	317		395		212		231		321		466		415	
Mercury	2.8	5.7	1.96		0.073	U	0.411		**3.57**		0.772		0.725		0.742	
Nickel	310	10,000	15.1		12.8		20.8		13.5		12.2		24.2		10.6	
Potassium	- -	- -	887		764		602		452		588		715		555	
Selenium	1,500	6,800	0.849	J	0.533	J	0.888	J	0.894	J	1.79	U	1.74	U	1.75	U
Silver	1,500	6,800	0.884	U	0.888	U	0.935	U	1.04	U	0.896	U	0.871	U	0.876	U
Sodium	- -	- -	87.6	J	48	J	64.3	J	66	J	163	J	86.4	J	154	J
Thallium	- -	- -	1.77	U	1.78	U	1.87	U	2.08	U	1.79	U	1.74	U	1.75	U
Vanadium	- -	- -	25.2		23.8		26.7		20.1		20		33.5		17.6	
Zinc	10,000	10,000	178		24.7		431		502		158		416		97.5	
General Chemistry (%)																
Total Solids	- -	- -	88.5		86.1		82.2		75.7		89.3		90.3		85.8	

Notes:

1. Soil sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (NYCRR) Part 375 Restricted Use Commercial and Restricted Use Industrial Soil Cleanup Objectives (SCO).
2. Only detected analytes are shown in the table.
3. Analytes detected with concentrations above Restricted Use Commercial SCOs are **bolded.**
4. Analytes detected with concentrations above Restricted Use Industrial SCOs are shaded.
5. Analytical results with reporting limits (RL) above the lowest applicable criteria are italicized.
6. Sample DUP01_071619 is a duplicate sample of SB03_14.0-14.5.
7. - - = Regulatory limit for this analyte does not exist
8. bgs = below grade surface
9. mg/kg = milligrams per kilogram
10. % = percent
11. NA = Not analyzed

Qualifiers:

J = The analyte was detected above the Method Detection Limit (MDL), but below the RL; therefore, the result is an estimated concentration.

U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.

Table 2
Phase II Environmental Site Investigation
Soil Sample Analytical Results Summary
450 Johnson Avenue
Brooklyn, New York
Langan Project No.: 170588001

Lot	NYSDEC Part 375 Restricted Use Commercial SCOs	NYSDEC Part 375 Restricted Use Industrial SCOs	Lot 21						
Location			SB03	SB03	SB04	SB08	SB08	SB09	SB13
Sample ID			SB03_14.0-14.5	DUP01_071619	SB04_11.0-11.5	SB08_5.0-5.5	SB08_14.0-14.5	SB09_3.0-3.5	SB13_8.0-8.5
Laboratory ID			L1931245-02	L1931245-01	L1931245-03	L1931803-04	L1931803-05	L1931524-04	L1931245-04
Sample Date			7/16/2019	7/16/2019	7/16/2019	7/18/2019	7/18/2019	7/17/2019	7/16/2019
Sample Depth (feet bgs)			14-14.5	14-14.5	11-11.5	5-5.5	14-14.5	3-3.5	8-8.5
Volatile Organic Compounds (mg/kg)									
1,2,4,5-Tetramethylbenzene	--	--	2.9	2.4	11	0.0014 U	0.18 U	0.0021 U	0.0029 U
1,2,4-Trimethylbenzene	190	380	1.1 U	0.17 U	0.2 U	0.0014 U	0.18 U	0.0021 U	0.0029 U
1,3,5-Trimethylbenzene (Mesitylene)	190	380	1.1 U	0.17 U	0.2 U	0.0014 U	0.18 U	0.0021 U	0.0029 U
1,4-Diethyl Benzene	--	--	1.2	0.98	3	0.0014 U	0.18 U	0.0021 U	0.0029 U
4-Ethyltoluene	--	--	1.1 U	0.17 U	0.2 U	0.0014 U	0.18 U	0.0021 U	0.0029 U
Acetone	500	1,000	5.5 U	0.86 U	1 U	0.019	0.89 U	0.013	0.16
Benzene	44	89	0.28 U	0.043 U	0.051 U	0.00034 U	0.044 U	0.00054 U	0.00072 U
Chloroform	350	700	0.83 U	0.13 U	0.15 U	0.001 U	0.13 U	0.0016 U	0.0021 U
Chloromethane	--	--	2.2 U	0.34 U	0.41 U	0.0027 U	0.36 U	0.0043 U	0.0057 U
Cis-1,2-Dichloroethene	500	1,000	0.55 U	0.086 U	0.1 U	0.00068 U	12	0.0011 U	0.0014 U
Cymene	--	--	0.55 U	0.086 U	0.1 U	0.00068 U	0.089 U	0.0011 U	0.0014 U
Ethylbenzene	390	780	0.55 U	0.086 U	0.017 J	0.00068 U	0.089 U	0.0011 U	0.0014 U
Isopropylbenzene (Cumene)	--	--	0.27 J	0.21	3.2	0.00068 U	0.089 U	0.0011 U	0.0014 U
Methyl Ethyl Ketone (2-Butanone)	500	1,000	5.5 U	0.86 U	1 U	0.0068 U	0.89 U	0.011 U	0.033
Naphthalene	500	1,000	2.2 U	0.21 J	0.72	0.0027 U	0.36 U	0.0043 U	0.0057 U
n-Butylbenzene	500	1,000	1	0.85	5.2	0.00068 U	0.089 U	0.0011 U	0.0014 U
n-Propylbenzene	500	1,000	0.31 J	0.24	6.7	0.00068 U	0.089 U	0.0011 U	0.0014 U
o-Xylene (1,2-Dimethylbenzene)	--	--	0.55 U	0.086 U	0.044 J	0.00068 U	0.089 U	0.0011 U	0.0014 U
Sec-Butylbenzene	500	1,000	1.6	1.4	4.7	0.00068 U	0.089 U	0.0011 U	0.0014 U
T-Butylbenzene	500	1,000	0.26 J	0.22	0.21	0.0014 U	0.18 U	0.0021 U	0.0029 U
Tert-Butyl Methyl Ether	500	1,000	1.1 U	0.17 U	0.2 U	0.00017 J	0.18 U	0.0021 U	0.00035 J
Tetrachloroethene (PCE)	150	300	0.28 U	0.043 U	0.051 U	0.0087	0.33	0.00054 U	0.00072 U
Toluene	500	1,000	0.55 U	0.086 U	0.1 U	0.00037 J	0.16	0.0011 U	0.0014 U
Total 1,2-Dichloroethene (Cis and Trans)	--	--	0.55 U	0.086 U	0.1 U	0.00068 U	14	0.0011 U	0.0014 U
Total Xylenes	500	1,000	0.55 U	0.086 U	0.044 J	0.00068 U	0.089 U	0.0011 U	0.0014 U
Trans-1,2-Dichloroethene	500	1,000	0.83 U	0.13 U	0.15 U	0.001 U	1.6	0.0016 U	0.0021 U
Trichloroethene (TCE)	200	400	0.28 U	0.043 U	0.051 U	0.0003 J	0.29	0.00054 U	0.00072 U
Vinyl Chloride	13	27	0.55 U	0.086 U	0.1 U	0.00068 U	**15**	0.0011 U	0.0014 U
Semivolatile Organic Compounds (mg/kg)									
2,4-Dinitrotoluene	--	--	0.19 U	0.072 J	0.19 U	0.18 U	0.23 U	0.18 U	0.24 U
2-Methylnaphthalene	--	--	0.043 J	0.21 U	0.23 U	0.17 J	0.27 U	0.22	0.29 U
2-Methylphenol (o-Cresol)	500	1,000	0.19 U	0.17 U	0.19 U	0.18 U	0.23 U	0.18 U	0.24 U
3 & 4 Methylphenol (m&p Cresol)	--	--	1.1	0.25 U	0.27 U	0.054 J	0.33 U	0.26 U	0.35 U
Acenaphthene	500	1,000	0.063 J	0.12 J	0.67	0.21	0.18 U	0.96	0.2 U
Acenaphthylene	500	1,000	0.049 J	0.14 U	0.15 U	0.24	0.18 U	0.058 J	0.2 U
Anthracene	500	1,000	0.15	0.063 J	0.29	0.66	0.14 U	1.5	0.12 J
Benzo(a)Anthracene	5.6	11	0.4	0.041 J	0.11 U	2.2	0.14 U	3	0.15 U
Benzo(a)Pyrene	1	1.1	0.39	0.14 U	0.15 U	**2**	0.18 U	**2.3**	0.2 U
Benzo(b)Fluoranthene	5.6	11	0.49	0.041 J	0.11 U	2.3	0.14 U	3.2	0.15 U
Benzo(g,h,i)Perylene	500	1,000	0.22	0.021 J	0.15 U	1.1	0.18 U	1.3	0.2 U
Benzo(k)Fluoranthene	56	110	0.16	0.1 U	0.11 U	0.94	0.14 U	1	0.15 U
Benzyl Butyl Phthalate	--	--	0.19 U	0.17 U	0.19 U	0.044 J	0.23 U	0.18 U	0.24 U
Biphenyl (Diphenyl)	--	--	0.43 U	0.4 U	0.43 U	0.4 U	0.52 U	0.065 J	0.56 U
Bis(2-Ethylhexyl) Phthalate	--	--	0.19 U	0.17 U	0.19 U	0.18 U	0.23 U	0.18 U	0.24 U
Carbazole	--	--	0.059 J	0.17 U	0.19 U	0.24	0.23 U	0.82	0.24 U
Chrysene	56	110	0.37	0.045 J	0.037 J	1.7	0.14 U	2.6	0.15 U
Dibenz(a,h)Anthracene	0.56	1.1	0.054 J	0.1 U	0.11 U	0.3	0.14 U	0.34	0.15 U
Dibenzofuran	350	1,000	0.068 J	0.095 J	0.53	0.2	0.23 U	0.49	0.24 U
Fluoranthene	500	1,000	0.77	0.078 J	0.11 U	3.1	0.14 U	6.5	0.049 J
Fluorene	500	1,000	0.086 J	0.26	1.4	0.26	0.23 U	0.72	0.49
Indeno(1,2,3-c,d)Pyrene	5.6	11	0.24	0.14 U	0.15 U	1.2	0.18 U	1.5	0.2 U
Naphthalene	500	1,000	0.15 J	0.076 J	0.34	0.43	0.23 U	0.57	0.12 J
Phenanthrene	500	1,000	0.54	0.52	2.8	1.9	0.14 U	6.2	1.1
Phenol	500	1,000	0.15 J	0.17 U	0.19 U	0.034 J	0.23 U	0.18 U	0.24 U
Pyrene	500	1,000	0.66	0.15	0.36	3	0.14 U	5.3	0.16
Polychlorinated Biphenyls (mg/kg)									
PCB-1260 (Aroclor 1260)	--	--	0.0371 U	0.0338 U	NA	NA	NA	NA	NA
PCB-1268 (Aroclor 1268)	--	--	0.0371 U	0.0338 U	NA	NA	NA	NA	NA
Total PCBs	1	25	0.0371 U	0.0338 U	NA	NA	NA	NA	NA
Inorganics (mg/kg)									
Aluminum	--	--	7,840	8,110	7,030	6,070	8,780	5,920	3,350
Antimony	--	--	4.56 U	4.12 U	4.38 U	0.942 J	1.51 J	15	0.852 J
Arsenic	16	16	2.31	3.88	1.73	2.22	3.89	14.3	14.6
Barium	400	10,000	45.9	44.5	41.2	34.8	45.7	176	175
Beryllium	590	2,700	0.474	0.329 J	0.525	0.336 J	0.521 J	0.33 J	0.276 J
Cadmium	9.3	60	0.912 U	0.823 U	0.876 U	0.841 U	1.11 U	3.8	1.15 U
Calcium	--	--	1,020	774	1,040	977	1,190	4,600	7,630
Chromium, Total	--	--	15.5	20.3	15.7	17.6	22.6	25.8	15.1
Cobalt	--	--	8.63	7.66	6.43	5.69	15.3	8.44	7.17
Copper	270	10,000	10.9	15.4	9.6	14	18	136	89.4
Iron	--	--	21,000	15,900	25,900	16,700	28,900	23,500	12,600
Lead	1000	3,900	35.2	23.5	17.4	41.2	64.2	**1,050**	610
Magnesium	--	--	1,950	2,830	1,510	1,420	1,810	2,180	958
Manganese	10,000	10,000	274	186	590	284	309	630	174
Mercury	2.8	5.7	0.144	0.09	0.073 U	0.281	0.501	2.53	**3.12**
Nickel	310	10,000	10.6	12.5	8.46	9.4	32.3	16.6	11.4
Potassium	--	--	598	809	645	637	588	865	497
Selenium	1,500	6,800	1.82 U	1.65 U	1.75 U	1.68 U	2.22 U	1.81	1.98 J
Silver	1,500	6,800	0.912 U	0.823 U	0.876 U	0.841 U	1.11 U	0.812 J	1.15 U
Sodium	--	--	171 J	243	38.3 J	48.5 J	175 J	124 J	198 J
Thallium	--	--	1.82 U	1.65 U	1.75 U	1.68 U	2.22 U	1.69 U	2.3 U
Vanadium	--	--	24.3	25.4	12.6	22.8	30.6	27.8	14.4
Zinc	10,000	10,000	32.4	27.8	27.4	33	37.5	650	244
General Chemistry (%)									
Total Solids	--	--	86.3	94.1	86	91.8	71.5	89.5	66.8

Notes:

1. Soil sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (NYCRR) Part 375 Restricted Use Commercial and Restricted Use Industrial Soil Cleanup Objectives (SCO).
2. Only detected analytes are shown in the table.
3. Analytes detected with concentrations above Restricted Use Commercial SCOs are **bolded.**
4. Analytes detected with concentrations above Restricted Use Industrial SCOs are shaded.
5. Analytical results with reporting limits (RL) above the lowest applicable criteria are italicized.
6. Sample DUP01_071619 is a duplicate sample of SB03_14.0-14.5.
7. -- = Regulatory limit for this analyte does not exist
8. bgs = below grade surface
9. mg/kg = milligrams per kilogram
10. % = percent
11. NA = Not analyzed

Qualifiers:

J = The analyte was detected above the Method Detection Limit (MDL), but below the RL; therefore, the result is an estimated concentration.

U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.

Table 2
Phase II Environmental Site Investigation
Soil Sample Analytical Results Summary
450 Johnson Avenue
Brooklyn, New York
Langan Project No.: 170588001

Lot	NYSDEC Part 375 Restricted Use Commercial SCOs	NYSDEC Part 375 Restricted Use Industrial SCOs	Lot 55				
Location			SB07	SB10	SB15	SB16	SB17
Sample ID			SB07_4.5-5.0	SB10_5.0-5.5	SB15_8.0-8.5	SB16_3.0-3.5	SB17_13.0-13.5
Laboratory ID			L1931803-07	L1932118-03	L1932118-01	L1932118-04	L1932118-05
Sample Date			7/18/2019	7/19/2019	7/19/2019	7/19/2019	7/19/2019
Sample Depth (feet bgs)			4.5-5	5-5.5	8-8.5	3-3.5	13-13.5
Volatile Organic Compounds (mg/kg)							
1,2,4,5-Tetramethylbenzene	- -	- -	0.0022 U	0.004 U	0.0021 U	7.8	0.0025 U
1,2,4-Trimethylbenzene	190	380	0.0022 U	0.004 U	0.0021 U	0.91 J	0.0025 U
1,3,5-Trimethylbenzene (Mesitylene)	190	380	0.0022 U	0.004 U	0.0021 U	0.2 J	0.0025 U
1,4-Diethyl Benzene	- -	- -	0.0022 U	0.004 U	0.0021 U	4.6	0.0025 U
4-Ethyltoluene	- -	- -	0.0022 U	0.004 U	0.0021 U	0.85 J	0.0025 U
Acetone	500	1,000	0.027	0.038	0.045	6.8 U	0.0074 J
Benzene	44	89	0.00054 U	0.00099 U	0.00052 U	0.34 U	0.00033 J
Chloroform	350	700	0.0016 U	0.003 U	0.0016 U	1 U	0.0019 U
Chloromethane	- -	- -	0.0043 U	0.0018 J	0.0041 U	2.7 U	0.0024 J
Cis-1,2-Dichloroethene	500	1,000	0.0011 U	0.002 U	0.001 U	0.68 U	0.0012 U
Cymene	- -	- -	0.0011 U	0.002 U	0.001 U	0.14 J	0.0012 U
Ethylbenzene	390	780	0.0011 U	0.002 U	0.001 U	0.78	0.0012 U
Isopropylbenzene (Cumene)	- -	- -	0.0011 U	0.002 U	0.001 U	0.28 J	0.0012 U
Methyl Ethyl Ketone (2-Butanone)	500	1,000	0.011 U	0.02 U	0.01 U	6.8 U	0.012 U
Naphthalene	500	1,000	0.0043 U	0.008 U	0.0041 U	2.1 J	0.005 U
n-Butylbenzene	500	1,000	0.0011 U	0.002 U	0.001 U	6.5	0.0012 U
n-Propylbenzene	500	1,000	0.0011 U	0.002 U	0.001 U	1.4	0.0012 U
o-Xylene (1,2-Dimethylbenzene)	- -	- -	0.0011 U	0.002 U	0.001 U	0.68 U	0.0012 U
Sec-Butylbenzene	500	1,000	0.0011 U	0.002 U	0.001 U	4	0.0012 U
T-Butylbenzene	500	1,000	0.0022 U	0.004 U	0.0021 U	0.25 J	0.0025 U
Tert-Butyl Methyl Ether	500	1,000	0.0022 U	0.00045 J	0.00027 J	1.4 U	0.0025 U
Tetrachloroethene (PCE)	150	300	0.021	0.00099 U	0.00052 U	0.34 U	0.00062 U
Toluene	500	1,000	0.0011 U	0.002 U	0.001 U	0.68 U	0.0012 U
Total 1,2-Dichloroethene (Cis and Trans)	- -	- -	0.0011 U	0.002 U	0.001 U	0.68 U	0.0012 U
Total Xylenes	500	1,000	0.0011 U	0.002 U	0.001 U	0.68 U	0.0012 U
Trans-1,2-Dichloroethene	500	1,000	0.0016 U	0.003 U	0.0016 U	1 U	0.0019 U
Trichloroethene (TCE)	200	400	0.00054 U	0.00099 U	0.00052 U	0.34 U	0.00062 U
Vinyl Chloride	13	27	0.00074 J	0.002 U	0.001 U	0.68 U	0.0012 U
Semivolatile Organic Compounds (mg/kg)							
2,4-Dinitrotoluene	- -	- -	0.19 U	0.59 U	0.2 U	0.21 U	0.18 U
2-Methylnaphthalene	- -	- -	0.03 J	0.7 U	0.13 J	0.14 J	0.05 J
2-Methylphenol (o-Cresol)	500	1,000	0.19 U	0.59 U	0.069 J	0.21 U	0.18 U
3 & 4 Methylphenol (m&p Cresol)	- -	- -	0.27 U	0.84 U	0.29	0.3 U	0.26 U
Acenaphthene	500	1,000	0.074 J	0.33 J	0.16	0.086 J	0.038 J
Acenaphthylene	500	1,000	0.035 J	0.1 J	1.2	0.14 J	0.03 J
Anthracene	500	1,000	0.19	0.7	0.89	0.22	0.09 J
Benzo(a)Anthracene	5.6	11	0.65	2.9	3.5	0.76	0.29
Benzo(a)Pyrene	1	1.1	0.7	**2**	**4.3**	0.65	0.25
Benzo(b)Fluoranthene	5.6	11	0.9	2.2	5.2	0.85	0.3
Benzo(g,h,i)Perylene	500	1,000	0.4	1.2	3.2	0.52	0.26
Benzo(k)Fluoranthene	56	110	0.28	0.76	1	0.27	0.088 J
Benzyl Butyl Phthalate	- -	- -	0.19 U	0.59 U	0.2 U	0.21 U	0.18 U
Biphenyl (Diphenyl)	- -	- -	0.43 U	1.3 U	0.46 U	0.47 U	0.4 U
Bis(2-Ethylhexyl) Phthalate	- -	- -	0.1 J	0.59 U	0.2 U	0.074 J	0.076 J
Carbazole	- -	- -	0.077 J	0.16 J	0.42	0.088 J	0.042 J
Chrysene	56	110	0.67	2.7	2.9	0.68	0.38
Dibenz(a,h)Anthracene	0.56	1.1	0.1 J	0.28 J	**0.79**	0.12	0.056 J
Dibenzofuran	350	1,000	0.044 J	0.082 J	0.15 J	0.051 J	0.032 J
Fluoranthene	500	1,000	1.2	4.3	5	1.3	0.48
Fluorene	500	1,000	0.055 J	0.25 J	0.22	0.12 J	0.052 J
Indeno(1,2,3-c,d)Pyrene	5.6	11	0.43	1.2	3.1	0.53	0.18
Naphthalene	500	1,000	0.065 J	0.59 U	0.69	0.82	0.067 J
Phenanthrene	500	1,000	0.69	4	2.4	0.87	0.48
Phenol	500	1,000	0.19 U	0.59 U	0.19 J	0.21 U	0.18 U
Pyrene	500	1,000	1.1	5.5	4.9	1.3	0.5
Polychlorinated Biphenyls (mg/kg)							
PCB-1260 (Aroclor 1260)	- -	- -	0.0368 U	NA	NA	0.0392 J	0.036 U
PCB-1268 (Aroclor 1268)	- -	- -	0.0368 U	NA	NA	0.0425	0.036 U
Total PCBs	1	25	0.0368 U	NA	NA	0.0817 J	0.036 U
Inorganics (mg/kg)							
Aluminum	- -	- -	2,490	3,190	4,590	7,800	2,920
Antimony	- -	- -	4.48	0.779 J	1.62 J	5.74	0.829 J
Arsenic	16	16	**67**	6.01	11.5	10.4	12.4
Barium	400	10,000	84.3	177	59.2	**632**	47.5
Beryllium	590	2,700	0.167 J	0.241 J	0.121 J	0.33 J	0.205 J
Cadmium	9.3	60	1.27	1.11	0.821 J	2.98	0.282 J
Calcium	- -	- -	17,300	2,540	2,450	24,200	8,180
Chromium, Total	- -	- -	14.8	7.75	11.7	70.7	8.94
Cobalt	- -	- -	9.14	4.87	5.36	7.06	4.92
Copper	270	10,000	42	67	41.8	258	31.5
Iron	- -	- -	58,000	7,380	17,200	24,500	15,600
Lead	1000	3,900	131	442	544	545	255
Magnesium	- -	- -	9,700	431	698	3,180	2,030
Manganese	10,000	10,000	329	140	342	276	232
Mercury	2.8	5.7	0.527	0.489	1.18	0.832	1.15
Nickel	310	10,000	16.9	12.8	10.3	55	11.1
Potassium	- -	- -	428	500	454	1,540	373
Selenium	1,500	6,800	7.85	1.77 J	0.765 J	0.943 J	0.462 J
Silver	1,500	6,800	0.881 U	0.928 U	0.933 U	0.583 J	0.855 U
Sodium	- -	- -	136 J	141 J	106 J	400	116 J
Thallium	- -	- -	0.634 J	1.86 U	0.364 J	0.33 J	1.71 U
Vanadium	- -	- -	31.8	15.2	19.3	34.4	14.2
Zinc	10,000	10,000	197	291	336	843	60.2
General Chemistry (%)							
Total Solids	- -	- -	88.2	82.2	81.3	80.1	91.3

Notes:

1. Soil sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (NYCRR) Part 375 Restricted Use Commercial and Restricted Use Industrial Soil Cleanup Objectives (SCO).
2. Only detected analytes are shown in the table.
3. Analytes detected with concentrations above Restricted Use Commercial SCOs are **bolded.**
4. Analytes detected with concentrations above Restricted Use Industrial SCOs are shaded.
5. Analytical results with reporting limits (RL) above the lowest applicable criteria are italicized.
6. Sample DUP01_071619 is a duplicate sample of SB03_14.0-14.5.
7. - - = Regulatory limit for this analyte does not exist
8. bgs = below grade surface
9. mg/kg = milligrams per kilogram
10. % = percent
11. NA = Not analyzed

Qualifiers:

J = The analyte was detected above the Method Detection Limit (MDL), but below the RL; therefore, the result is an estimated concentration.

U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.

Table 3
Phase II Environmental Site Investigation
Groundwater Sample Analytical Results Summary

450 Johnson Avenue
Brooklyn, New York
Langan Project No.: 170588001

Lot	NYSDEC SGVs	Lot 17						Lot 21						Lot 55	
Location		TMW01		TMW02		TMW02		TMW03		TMW04		TMW08		TMW07	
Sample ID		TMW01_071719		TMW02_071819		DUP02_071819		TMW03_071719		TMW04_071719		TMW08_071819		TMW07_071919	
Laboratory ID		L1931524-07		L1931803-01		L1931803-03		L1931524-08		L1931524-06		L1931803-02		L1932118-07	
Sample Date		7/17/2019		7/18/2019		7/18/2019		7/17/2019		7/17/2019		7/18/2019		7/19/2019	
Volatile Organic Compounds (µg/L)															
1,1-Dichloroethane	5	2.5	U	2.5	U	2.5	U	0.93	J	2.5	U	2.5	U	2.5	U
1,1-Dichloroethene	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	0.31	J	1.1	
1,2,4,5-Tetramethylbenzene	5	2	U	2	U	2	U	**7.6**		**34**		2	U	2	U
1,4-Diethyl Benzene	~	2	U	2	U	2	U	1.9	J	7.2		2	U	2	U
2-Hexanone	50	5	U	5	U	5	U	5	U	5	U	2.2	J	5	U
Acetone	50	5	U	5	U	5	U	4.2	J	2.2	J	19		5.8	
Benzene	1	0.5	U	0.5	U	0.5	U	0.24	J	0.19	J	0.23	J	0.24	J
Chloroform	7	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	**13**		5.3	
Cis-1,2-Dichloroethene	5	1.5	J	2.5	U	2.5	U	2.5	U	2.5	U	**170**		**250**	
Isopropylbenzene (Cumene)	5	2.5	U	2.5	U	2.5	U	2.5	U	**6.6**		2.5	U	2.5	U
Methyl Ethyl Ketone (2-Butanone)	50	5	U	5	U	5	U	5	U	5	U	3.5	J	2	J
n-Butylbenzene	5	2.5	U	2.5	U	2.5	U	1.5	J	**9.4**		2.5	U	2.5	U
n-Propylbenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	**7**		2.5	U	2.5	U
Sec-Butylbenzene	5	2.5	U	2.5	U	2.5	U	1.7	J	**7.3**		2.5	U	2.5	U
T-Butylbenzene	5	2.5	U	2.5	U	2.5	U	2.5	U	1.1	J	2.5	U	2.5	U
Tert-Butyl Methyl Ether	10	2.4	J	0.91	J	0.78	J	**15**		**11**		7.9		2.5	U
Tetrachloroethene (PCE)	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	**64**		**150**	
Total 1,2-Dichloroethene (Cis and Trans)	~	1.5	J	2.5	U	2.5	U	2.5	U	2.5	U	170	J	250	J
Trans-1,2-Dichloroethene	5	2.5	U	2.5	U	2.5	U	2.5	U	2.5	U	2.3	J	1.8	J
Trichloroethene (TCE)	5	0.5	U	0.5	U	0.5	U	0.5	U	0.5	U	**72**		**70**	
Vinyl Chloride	2	0.08	J	1	U	0.08	J	0.38	J	**31**		**170**		**3.2**	
Semivolatile Organic Compounds (µg/L)															
2-Methylnaphthalene	~	0.1	U	0.17		1.9		0.13		0.65		0.58		0.03	J
Acenaphthene	20	0.1	U	0.1		2.5		2.5		14		0.65		0.03	J
Acenaphthylene	~	0.1	U	0.1	U	0.69		0.55		4.1		0.04	J	0.1	U
Anthracene	50	0.1	U	0.03	J	1.9		0.4		3.7		0.16		0.06	J
Benzo(a)Anthracene	0.002	*0.1*	U	**0.04**	J	**6**		**0.11**		**0.89**		**0.13**		**0.25**	
Benzo(a)Pyrene	0	*0.1*	U	*0.1*	U	**5.9**		**0.08**	J	**0.61**		**0.11**		**0.22**	
Benzo(b)Fluoranthene	0.002	*0.1*	U	*0.1*	U	**7.2**		**0.1**		**0.76**		**0.14**		**0.31**	
Benzo(g,h,i)Perylene	~	0.1	U	0.1	U	4		0.07	J	0.41		0.1	J	0.2	
Benzo(k)Fluoranthene	0.002	*0.1*	U	*0.1*	U	**2.8**		**0.05**	J	**0.27**		**0.05**	J	**0.11**	
Benzoic Acid	~	50	U	50	U	50	U	12	J	50	U	16	J	9.4	J
Bis(2-Ethylhexyl) Phthalate	5	3		2.2	J	3	U	3	U	1.8	J	3	U	3	U
Carbazole	~	2	U	2	U	1.2	J	2	U	2	U	2	U	2	U
Chrysene	0.002	*0.1*	U	**0.03**	J	**5.3**		**0.11**		**1.1**		**0.11**		**0.26**	
Dibenz(a,h)Anthracene	~	0.1	U	0.1	U	1		0.1	U	0.11		0.1	U	0.04	J
Dibenzofuran	~	2	U	2	U	1.5	J	0.77	J	5		2	U	2	U
Diethyl Phthalate	50	5	U	5	U	5	U	5	U	5	U	0.55	J	5	U
Fluoranthene	50	0.1	U	0.06	J	12		0.32		2.7		0.34		0.46	
Fluorene	50	0.1	U	0.1	J	2.2		3.3		20		0.41		0.03	J
Indeno(1,2,3-c,d)Pyrene	0.002	*0.1*	U	*0.1*	U	**4.1**		**0.07**	J	**0.41**		**0.1**	J	**0.21**	
Naphthalene	10	0.1	U	0.35		4.3		0.57		1.8		1.1		0.87	
Phenanthrene	50	0.1	U	0.13		9.2		5.4		46		1.2		0.25	
Pyrene	50	0.1	U	0.05	J	10		0.58		5.6		0.29		0.45	
Dissolved - Inorganics (µg/L)															
Aluminum	~	46		4.99	J	1,240		3.34	J	8.24	J	299		13.8	
Antimony	3	0.5	J	0.78	J	0.89	J	1.13	J	0.57	J	1.21	J	1.47	J
Arsenic	25	0.21	J	0.24	J	0.87		0.76		2.91		0.65		1.59	
Barium	1,000	124.2		73.12		90.16		226.6		186.2		56.89		97.96	
Cadmium	5	0.2	U	0.2	U	0.08	J	0.2	U	0.2	U	0.2	U	0.2	U
Calcium	~	82,700		58,300		58,600		75,900		80,900		90,900		74,800	
Chromium, Total	50	0.29	J	0.36	J	3.85		0.26	J	0.6	J	1.03		0.22	J
Cobalt	~	0.89		2.35		3.49		1.89		0.99		2.56		8.71	
Copper	200	1.39		0.39	J	6.87		0.71	J	0.99	J	2.26		6.73	
Iron	300	**4,720**		66.3		**2,650**		**25,800**		**16,500**		**476**		**2,780**	
Lead	25	1.37		1	U	19.81		1	U	1	U	3.35		2.09	
Magnesium	35,000	17,100		4,410		4,860		**54,000**		29,400		7,690		10,900	
Manganese	300	**610.6**		**443.7**		**493**		**1,807**		**1,254**		**1,631**		**4,586**	
Nickel	100	1.55	J	2.04		4.36		1.32	J	1.32	J	3.13		6.5	
Potassium	~	12,000		5,950		6,160		22,400		16,200		13,400		13,500	
Selenium	10	5	U	3.76	J	3.07	J	5	U	5	U	3.22	J	5	U
Sodium	20,000	**58,100**		10,200		10,600		**109,000**		**68,200**		**62,900**		**64,800**	
Vanadium	~	5	U	5	U	4.01	J	5	U	5	U	5	U	5	U
Zinc	2,000	9.74	J	18.94		40.48		4.45	J	10	U	3.89	J	21.34	

Notes:
1. Only detected analytes are shown in the table.
2. Groundwater sample analytical results are compared to the New York State Department of Environmental Conservation (NYSDEC) Title 6 of the Official Compilation of New York Codes, Rules and Regulations (NYCRR) Part 703.5 and the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values for Class GA Water (NYSDEC SGVs).
3. Analytes detected with concentrations above NYSDEC SGVs are bolded and shaded.
4. Analytical results with reporting limits (RL) above NYSDEC SGVs are italicized.
5. Sample DUP02_071819 is a duplicate sample of TMW02_071819.
6. ~ = Regulatory limit for this analyte does not exist
7. µg/L = micrograms per liter
8. NA = Not analyzed

Qualifiers:
J = The analyte was detected above the Method Detection Limit (MDL), but below the RL; therefore, the result is an estimated concentration.
U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.

Table 4
Phase II Environmental Site Investigation
Sub-Slab Vapor and Indoor Air Sample Analytical Results Summary

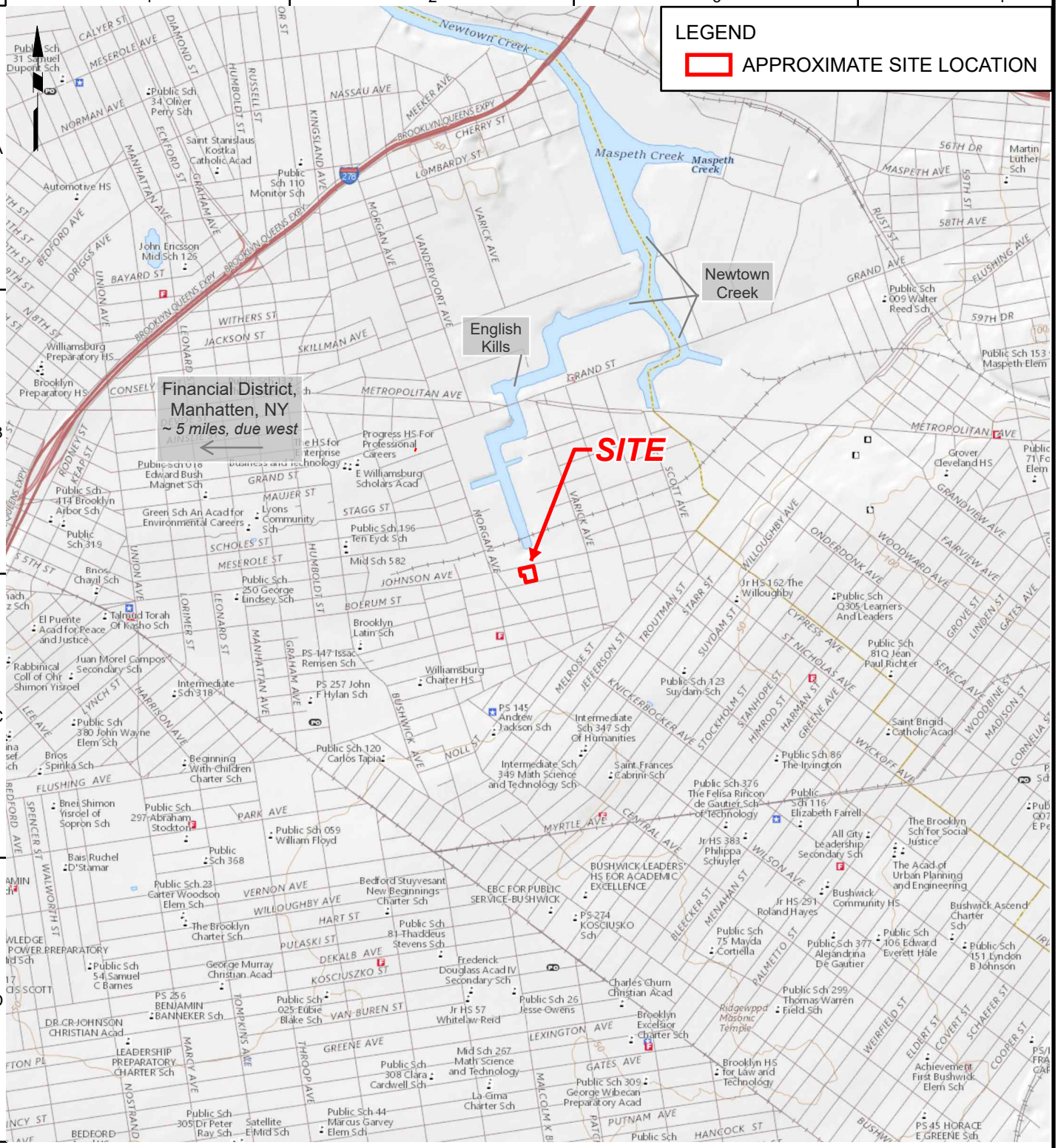
450 Johnson Avenue
Brooklyn, New York
Langan Project No.: 170588001

Lot			Lot 17						Lot 21			
Location	NYSDOH AGVs	NYSDOH Decision Matrices Minimum Concentration	IA01		SSV01		IA02		SSV02		IA03		SSV03	
Sample ID			IA01_071819		SSV01_071819		IA02_071919		SSV02_071919		IA03_071919		SSV03_071919	
Laboratory ID			L1931865-01		L1931865-02		L1932180-03		L1932180-01		L1932180-04		L1932180-02	
Sample Date			7/18/2019		7/18/2019		7/19/2019		7/19/2019		7/19/2019		7/19/2019	
Sample Type			IA		SSV		IA		SSV		IA		SSV	
Volatile Organic Compounds (µg/m³)														
1,1,1-Trichloroethane	~	100	0.295		10.9	U	0.251		4.2	U	8.46		3.64	U
1,2,4-Trimethylbenzene	~	~	3.26		199		32		152		8.9		128	
1,3,5-Trimethylbenzene (Mesitylene)	~	~	1.88		64.9		8.8		53.1		2.11		46.1	
1,3-Butadiene	~	~	3.36		4.42	U	12.3		1.7	U	3.47		1.48	U
1,4-Dichlorobenzene	~	~	1.55		12	U	1.2	U	4.62	U	1.2	U	4.01	U
2,2,4-Trimethylpentane	~	~	7.43		120		27.6		200		7.1		143	
4-Ethyltoluene	~	~	1.17		61.9		6.78		33.6		1.37		27.4	
Acetone	~	~	19.7		198		15.4		95		21.5		65.1	
Benzene	~	~	13.9		113		53.4		98.4		16.6		56.9	
Carbon Disulfide	~	~	0.981		6.23	U	0.623	U	14.4		0.623	U	10.7	
Carbon Tetrachloride	~	6	0.447		12.6	U	0.585		4.84	U	0.56		4.2	U
Chloroform	~	~	1.43		9.86		1.1		3.76	U	0.977	U	3.26	U
Chloromethane	~	~	1.49		4.13	U	1.5		1.59	U	1.55		1.38	U
Cis-1,2-Dichloroethene	~	6	0.079	U	7.93	U	0.079	U	3.05	U	0.143		2.64	U
Cyclohexane	~	~	3.79		86.7		23		128		4.78		85.4	
Dichlorodifluoromethane	~	~	2.4		9.89	U	2.75		3.92		2.69		3.38	
Ethanol	~	~	93.3		94.2	U	347		36.2	U	133		31.5	U
Ethylbenzene	~	~	4.01		317		26.8		249		6.82		195	
Isopropanol	~	~	14		12.3	U	7.23		4.72	U	8.87		4.1	U
M,P-Xylene	~	~	13.2		964		82.1		634		21.1		517	
Methyl Ethyl Ketone (2-Butanone)	~	~	3.45		71.4		3.66		51.9		4.42		32.4	
Methylene Chloride	60	100	2.97		17.4	U	2.63		6.67	U	24.5		5.8	U
n-Heptane	~	~	7.05		443		43.9		409		10.2		268	
n-Hexane	~	~	12.7		230		64.8		244		13.5		125	
o-Xylene (1,2-Dimethylbenzene)	~	~	4.69		350		31.1		288		7.95		238	
Styrene	~	~	1.75		8.52	U	4.21		3.27	U	2.24		2.84	U
Tert-Butyl Alcohol	~	~	1.52	U	15.2		1.52	U	22.8		1.52	U	16.8	
Tetrachloroethene (PCE)	30	100	1.21		13.6	U	0.556		6.65		1.41		39.9	
Tetrahydrofuran	~	~	15.3		14.7	U	1.47	U	5.66	U	3.72		4.93	U
Toluene	~	~	31.9		1,750		149		1,020		41.1		716	
Trichloroethene (TCE)	2	6	0.193		10.7	U	**0.263**		**7.69**		0.924		3.58	U
Trichlorofluoromethane	~	~	1.12	U	11.2	U	1.52		4.32	U	1.55		3.75	U

Notes:
1. Only detected analytes are shown in the table.
2. Co-located sub-slab vapor and indoor air sample analytical results are evaluated with the New York State Department of Health (NYSDOH) October 2006 Guidance for Evaluating Soil Vapor Intrusion in the State of New York Decision Matrices for Sub-Slab Vapor and Indoor Air and subsequent updates (2017).
3. The NYSDOH Decision Matrices Minimum Concentrations are shown for reference only.
4. Indoor air sample analytical results are evaluated with the NYSDOH Air Guideline Values (AGVs) as set forth in the NYSDOH October 2006 Guidance for Evaluating Soil Vapor Intrusion in the State of New York and subsequent updates (2013, 2015).
5. Detected analytical results evaluated to recommend monitoring are bolded.
6. Detected analytical results evaluated to recommend identify sources and resample or mitigation are shaded.
7. Detected analytical results evaluated to recommend mitigation are bolded and shaded.
8. µg/m³ = micrograms per cubic meter
9. ~ = Regulatory criteria for this analyte does not exist
10. IA = Indoor Air
11. SSV = Sub-slab Soil Vapor

Qualifiers:
U = The analyte was analyzed for, but was not detected at a level greater than or equal to the RL; the value shown in the table is the RL.

FIGURES



NOTES:
1. BASEMAP ADAPTED FROM UNITED STATES GEOLOGICAL SURVEY (USGS) 7.5-MINUTE SERIES TOPOGRAPHICAL MAPS, BROOKLYN, NEW YORK, QUADRANGLE, DATED 2016.

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Langan Engineering & Environmental Services, Inc.
Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
Langan International LLC

Collectively known as Langan

Project
450 JOHNSON AVENUE
BLOCK No. 2992, LOT No. 17, 21, 55
BROOKLYN
KINGS COUNTY NEW YORK

Figure Title
SITE LOCATION MAP

Project No. 170588001	Figure No. 1
Date 6/21/2019	
Scale 1"=2,000'	
Drawn By AB	
Submission Date 6/21/2019	

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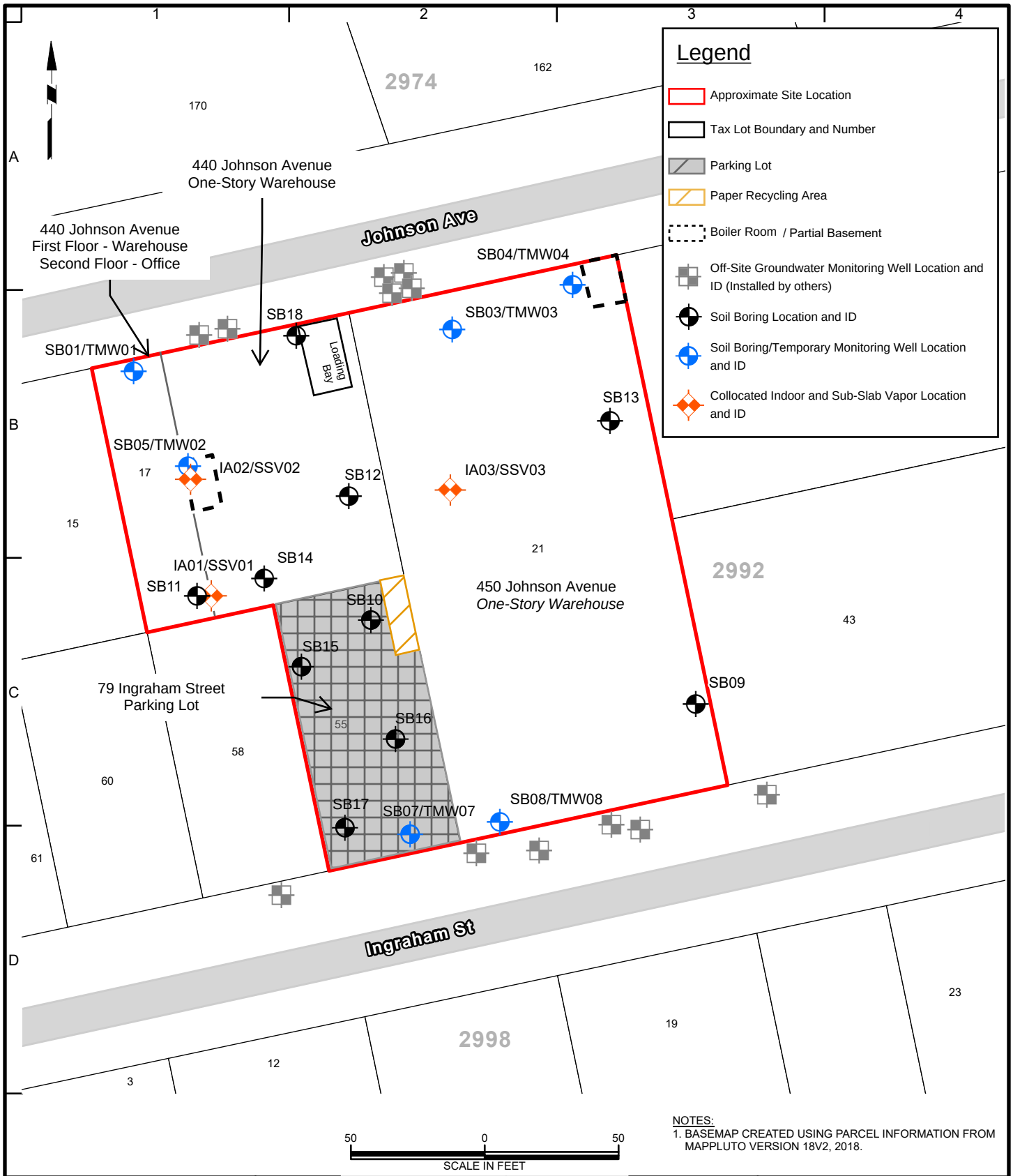
Path: \\langan.com\data\NYC\data0\170588001\Project Data\ArcGIS\APRX\170588001.aprx Date: 6/21/2019 User: abakhtin Time: 6:00 PM



NOTES:
1. BASEMAP CREATED USING PARCEL INFORMATION FROM MAPPLUTO VERSION 18V2, 2018.

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Collectively known as Langan

Project
450 JOHNSON AVENUE
BLOCK No. 2992, LOT No. 17, 21, 55
BROOKLYN
KINGS COUNTY NEW YORK

Figure Title
SAMPLING LOCATION PLAN

Project No. 170588001	Figure No. 2
Date 8/2/2019	
Scale 1"=50'	
Drawn By MG	
Submission Date 8/2/2019	Sheet 2 of 2

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Path: \\langan.com\data\NYC\data0\170588001\Project Data\ArcGIS\APRX\170588001.aprx Date: 8/2/2019 User: mgeorgalas Time: 12:34 PM

APPENDIX A

GEOPHYSICAL SURVEY REPORT

Subsurface Environmental Technologies, LLC.
19 Brookside Avenue
Pennington, New Jersey 08534
Phone: (609) 730-0005
Fax: (609) 730-1222

August 29, 2019
Ref No: 19-243G

Deirdre Casey
LANGAN
21 Penn Plaza
360 West 31st St., 8th Floor
New York, NY 10001-2727

Subject: Geophysical Investigation Results
450 Johnson Avenue
Brooklyn, New York 11237

Dear Ms. Casey:

Subsurface Environmental Technologies, LLC (SET) is pleased to present this letter report to *LANGAN* of New York, New York describing the methods and results of a geophysical investigation conducted at the Johnson Avenue Site in Brooklyn, New York. The survey areas were for this investigation were primarily focused on twenty-five (25) roughly 20-foot by 20-foot areas surrounding proposed soil boring (SB) locations indicated on Figures 2-5 below. SET was also requested to survey the sidewalk along the northern side of the warehouse as well as the parking lot located to the south along Ingraham Avenue (see Figure 1). The terrain within the investigation areas was relatively flat, relatively free of surface obstructions, and was comprised primarily paved-asphalt, concrete, and sporadic gravels. The field activities for this project were completed by SET personnel on July 15, 2019.

Objectives

The primary objective of this geophysical investigation was to identify potential underground hazards such as utility pipelines, USTs, or anomalous subsurface features that may adversely affect planned drilling events at twenty-five (25) proposed SB locations. The secondary objective of this geophysical investigation was to perform a GPR survey to identify underground storage tanks (USTs) or evidence of prior removal such as possible excavations or areas of disturbed soils that may be related to former USTs. To meet these objectives, SET used a GSSI SIR 3000 System (GPR) with 350 and 400-megahertz (MHz) ground-penetrating radar antennas, a Fisher TW-6 M-Scope, and an RD7000 radio frequency (RF) device by Radiodetection, Inc.

Instrumentation

Ground Penetrating Radar (GPR)

Ground Penetrating Radar (GPR) is a near surface geophysical method based on the transmission of repetitive, high-frequency electromagnetic (EM) pulses emitted from a transmitting antenna to probe the Earth. The EM pulses emitted from the transmitting antenna

propagate through the subsurface at a velocity that is directly related to the electrical properties of the subsurface. When an EM wave contacts an interface of differing electrical properties (e.g. dielectric constant), part of that energy is returned to surface in the form of a reflected signal. The reflected signal is detected by a receiving transducer, displayed on the control unit screen, and recorded on an internal hard drive. The control unit records a continuous cross-section of the subsurface by plotting the two-way travel time of the EM pulse, relative to the distance traveled by the GPR antenna along to ground surface. To determine depth, two-way travel time values are converted using known soil velocity functions. GPR field procedures include system calibration, test run completion, and profile collection and interpretation. GPR Data collected in the field can be analyzed both in the field and in the office, should further analysis be required.

Fisher TW-6 M-Scope

The M-Scope is an electromagnetic (EM) instrument used to detect the presence of buried metallic objects such as buried drums, metallic conduits, or miscellaneous metallic debris buried within the upper 3 to 5 feet of the subsurface. The Fisher M-Scope uses the principle of electromagnetic induction. A primary coil broadcasts a radio signal from a transmitting antenna and induces secondary electrical currents along buried metallic objects. This secondary electrical current in turn produces a secondary magnetic field, which is then detected by a receiving antenna. Peak responses are observed when the instrument is moved directly over a metallic object. Peak responses are observed by the operator in real time using the analog meter and audible output signals.

Radio-Frequency Method (RF)

The Radio Detection RD4000 multi-frequency utility locating system was used directly over and around each proposed SB location. This instrument consists of a receiver/tracer and a remote transmitter, which operates at frequencies between 8 kilohertz (kHz) and 200 kHz. The unit provides audio and visual feedback to the operator when a utility that is coupled with the transmitted signal is crossed. The transmitter produces a radio-frequency signal in the utility to be traced by either induction coupling or direct hookup. The receiver output provides measured field strength of the received signal and varies an audible pitch that is dependent upon the distance to the utility. By carefully adjusting the gain of the receiver, it is possible to determine the location of the utility and to separate it from possible adjacent utilities. In addition, the receiver can be used in 60 kHz passive mode to identify active electrical lines or lines that possess an induced current.

Field Survey Design and Procedures

SET utilized the industry standard protocol for geophysical field surveys during this investigation. This standard protocol includes proper equipment setup, equipment calibration,

multiple test-run completions, observation of surface metals, the assessment of data quality in the field, and overall quality assurance during final report preparation and presentation. Because of the size and nature of the anomalies targeted for this investigation, SET used a tight spacing for collecting geophysical data. The GPR transects were collected in varying orientations across the site. These GPR transects were spaced at approximately 2-foot intervals throughout the survey areas except where obstructions were encountered at the ground surface such as production equipment, shelving units, and other miscellaneous site features. SET typically collects a minimum of 5-10 profiles over each anomalous GPR response or area of concern to provide a more detailed perspective of the subsurface. It was not possible to collect GPR data in areas where surface obstructions were present.

Results and Discussion

Underground Storage Tanks

SET did not observe any geophysical responses that may indicate the presence of a buried UST within the survey areas. All M-Scope and GPR responses were analyzed for characteristic signatures such as anomalously high or low EM responses, or strong, hyperbolic GPR signatures of reasonable dimension. SET did observe an affixed vent pipe near the northeastern corner of the property along the Johnson Avenue sidewalk, but no geophysical evidence suggested the presence of a UST. Additionally, SET did not observed evidence of prior UST removal such as an area of disturbed soil, excavation flank walls, or other evidence of prior earthwork.

Interior Area of Disturbed Soil/Concrete and Visible Supply/Return Lines

SET visually observed a set of supply/return lines exiting the boiler room to the north (see Site photo 11 on Figure 3). These pipes were exposed at the ground surface at the time of this survey and extended roughly 18 feet north-northwest of the boiler room entrance and abruptly changed to a westerly orientation and into a block wall. At the same location on the opposite side of the wall (see Site Photo 7 on Figure 3), SET observed a small, roughly 3-foot wide by 6-foot long area of disturbed soil and cut concrete. GPR data in this area displayed a more chaotic response that the surrounding area, suggesting that this area had possibly been re-worked at some point in the past. SET was limited in survey space at this location but attempted to move shelving to image the area. No geophysical evidence of a UST was detected in this vicinity.

Soil Boring Location Surveying and Utility Locating

SET performed a geophysical survey and private utility mark-out (PUM) surrounding a total of twenty-five (25) proposed drilling locations. The locations selected as a final drilling point displayed geophysical characteristics which were not indicative of buried utility pipelines, USTs, or anomalous zones that may adversely affect drilling operations. SET determined these points as final when both the RF and M-Scope instrument responses were constant, and when GPR

responses were did not indicate the presence of buried objects. All locations deemed free of subsurface obstructions were marked on site with white spray paint (shown as a common crosshair symbol). The approximate positions of these features can be seen below in Figures 1-6 These positions are intended for general reference purposes only; refer to field markings for actual locations and ground positions.

Suspected Septic Holding Tank

SET detected one suspected septic holding tank (SSHT) near the washroom in the northeastern portion of the warehouse (see Figure 1). The SSHT was identified upon removing a sheet metal cover which exposed a large, roughly 4-foot by 6-foot vault which had a sewage-like odor. Additionally, piping could be seen extending to the north from this structure and are likely associated with drainage from the adjacent washrooms. SET also observed what appeared to be an outlet pipe extending toward Johnson Avenue from the north side of the tank. Characteristic GPR signatures were observed over this SSHT such as a strong, flat reflector (see GPR 158 on Figure 1). This type of response has been consistently observed by SET over this type of target at many sites. No other septic system components such as vents, lateral lines, or leach fields were detected on site.

Closing

The geophysical data collection and interpretation methods used in this investigation are consistent with standard practices applied to similar geophysical investigations. The correlation of geophysical responses is based on the past results of similar surveys, although it is possible that some variation could exist at this site. Due to the nature of geophysical data, no guarantees have bene made or inferred regarding the presence or absence of additional objects or targets beyond those identified or beyond the detection limits of the instrumentation used in this investigation.

It was a pleasure working with you on this project, and we look forward to conducting geophysical investigations for you in the future.

Sincerely,

Subsurface Environmental Technologies, LLC.
Geophysics Group

Corey Miller | Project Geophysicist

Deirdre Casey
LANGAN
SET: 19-243G

Encl.:

Figure 1

ANNOTATED HIGH-RESOLUTION GEOREFERENCED ORTHOPHOTO SHOWING SITE, EXTERIOR SURVEY BOUNDARIES, SITE PHOTO, & GPR PROFILE OF A SUSPECTED INTERIOR SEPTIC HOLDING TANK

Figure 2

ANNOTATED SITE PHOTOS SHOWING PROPOSED DRILLING LOCATIONS, DETECTED UTILITY PIPELINES, AND PERTINENT SITE FEATURES

Figure 3

ANNOTATED SITE PHOTOS SHOWING PROPOSED DRILLING LOCATIONS, DETECTED UTILITY PIPELINES, AND PERTINENT SITE FEATURES

Figure 4

ANNOTATED SITE PHOTOS SHOWING PROPOSED DRILLING LOCATIONS, DETECTED UTILITY PIPELINES, AND PERTINENT SITE FEATURES

Figure 5

ANNOTATED SITE PHOTOS SHOWING PROPOSED DRILLING LOCATIONS, DETECTED UTILITY PIPELINES, AND PERTINENT SITE FEATURES

Scale: 1 inch = 40 U.S. survey feet

0 40 80

Notes:

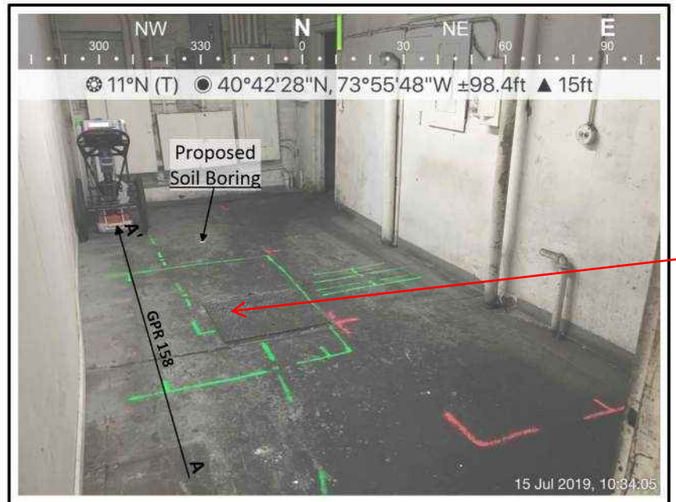
(1) The objective of this geophysical investigation was to identify potential underground hazards such as utility pipelines, USTs, or anomalous subsurface features that may adversely affect planned drilling events at numerous proposed SB locations. To meet these objectives, SET used a GSSI SIR 3000 System (GPR) with a 400-megahertz (MHz) ground-penetrating radar antenna, a Fisher TW-6 M-Scope, and an RD7000 radiofrequency (RF) device by Radiodetection, Inc.
(2) All locations deemed free of subsurface obstructions were marked on site with white spray paint (shown as a crosshair symbol). The approximate positions of these features can be seen in the data table above. Note that these positions are of sub-meter accuracy and were not obtained by a licensed land surveyor. These positions are intended for general reference purposes only.
(3) The items on this figure may not be all inclusive. SET does not warrant the fact that additional buried features may be present at this site.

Legend:

Exterior Survey Area Boundaries

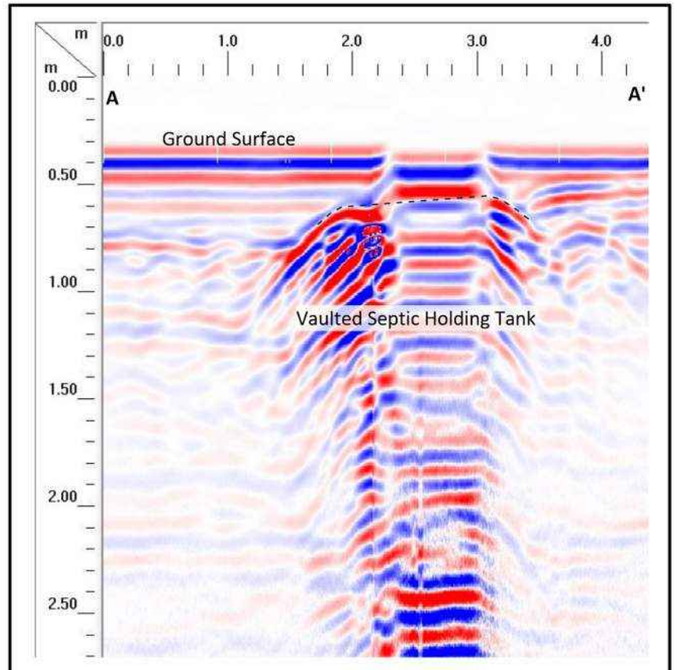
Interior Survey Area Boundaries

Site Photo 1



Site Photo 1 showing a suspected interior septic holding tank (SSHT), inlet piping, GPR transect and interprted extents of a basement below the slab (dashed-pink lines). Note the orientation of the GPR trasnsect on image shows the approximate location of the GPR profile below. SET could not determine all four extents of the SSHP due to the wall (image left).

GPR Profile: GPR158



SET GEOPHYSICS & DRILLING SERVICES

SUBSURFACE ENVIRONMENTAL TECH., LLC.
19 BROOKSIDE AVENUE
PENNINGTON, NJ 08534

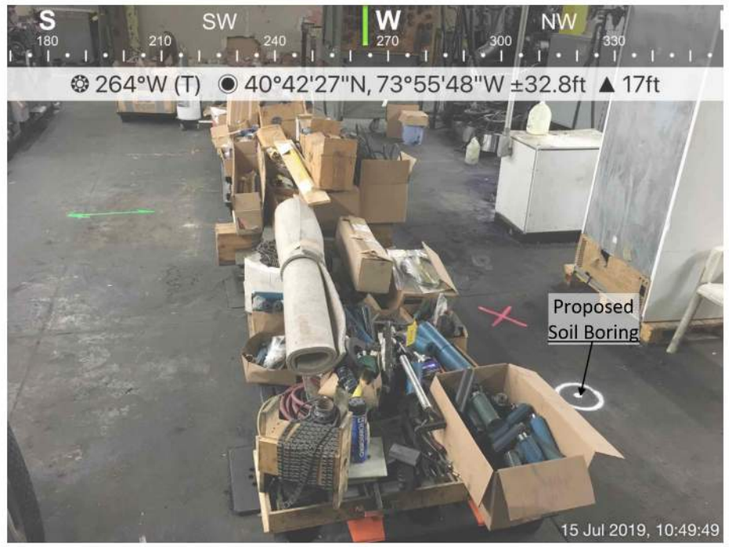
	SITE: JOHNSON AVENUE SITE
	ANNOTATED HIGH-RESOLUTION GEOREFERENCED ORTHOPHOTO SHOWING SITE, EXTERIOR SURVEY BOUNDARIES, SITE PHOTO, & GPR PROFILE OF A SUSPECTED INTERIOR SEPTIC HOLDING TANK
	ADDRESS: 450 JOHNSON AVE. BROOKLYN, NY 11237
	CLIENT: DEIRDRE CASEY, *LANGAN*
PROJECT: 19-243G	SUBSURFACE ENVIRONMENTAL TECHNOLOGIES, LLC.
FIGURE DATE: AUGUST 29, 2019	DRAWN BY: C. MILLER, PROJECT GEOPHYSICIST

FIGURE 1

Site Photo 2

East-looking site photo showing proposed drilling locations and nearby sanitary floor drain. Note this location was moved from its original ground position due to the presence of this detected line. Note this line terminates at a clean-out.

Site Photo 3



West-looking site photo showing a proposed soil boring, detected spot anomaly (magenta "X") and floor drain (upper right of image as dashed-green line). No other utilities were detected in the image area.

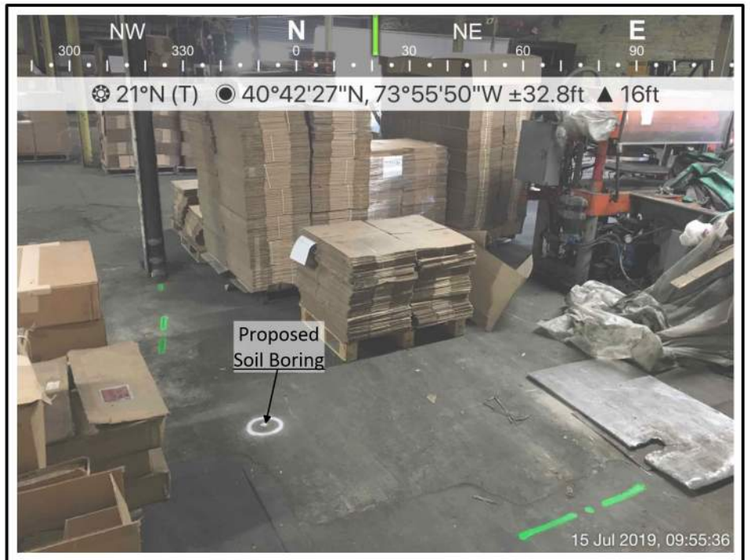
Site Photo 4

Northeast-looking site photo showing proposed soil boring, grate, and a detected floor drain. No other utilities were detected in the image area. GPR data quality over this detected floor drain showed strong, repeating signatures.

Site Photo 5

Northeast-looking site photo showing proposed soil boring and site features. No utility pipelines were detected within the image area. All Radiofrequency (RF) responses were low and constant, and GPR data were not indicative of b utilities.

Site Photo 6



Northeast-looking site photo showing proposed soil boring and detected floor drain piping. Note that the metal sheeting on the ground surface was removed and the piping was visible. GPR data quality was excellent in this area.

Legend:

- Floor Drain
- Unknown Line
- Proposed Drilling Location
- X — Spot Anomaly

Notes:

(1) The objective of this geophysical investigation was to identify potential underground hazards such as utility pipelines, USTs, or anomalous subsurface features that may adversely affect planned drilling events at numerous proposed SB locations. To meet these objectives, SET used a GSSI SIR 3000 System (GPR) with a 400-megahertz (MHz) ground-penetrating radar antenna, a Fisher TW-6 M-Scope, and an RD7000 radiofrequency (RF) device by Radiodetection, Inc.

(2) All locations deemed free of subsurface obstructions were marked on site with white spray paint (shown as a crosshair symbol). The approximate positions of these features can be seen in the data table above. Note that these positions are of sub-meter accuracy and were not obtained by a licensed land surveyor. These positions are intended for general reference purposes only.

(3) The items on this figure may not be all inclusive. SET does not warrant the fact that additional buried features may be present at this site.

SET GEOPHYSICS & DRILLING SERVICES

SUBSURFACE ENVIRONMENTAL TECH., LLC.
19 BROOKSIDE AVENUE
PENNINGTON, NJ 08534

PROJECT: 19-243G	SITE: JOHNSON AVENUE SITE
FIGURE DATE: AUGUST 29, 2019	ANNOTATED SITE PHOTOS SHOWING PROPOSED DRILLING LOCATIONS, DETECTED UTILITY PIPELINES, AND PERTINENT SITE FEATURES
	ADDRESS: 450 JOHNSON AVE. BROOKLYN, NY 11237
	CLIENT: DEIRDRE CASEY, *LANGAN*
	SUBSURFACE ENVIRONMENTAL TECHNOLOGIES, LLC.
	DRAWN BY: C. MILLER, PROJECT GEOPHYSICIST

FIGURE 2

Site Photo 7

North-looking site photo showing proposed soil boring and detected floor drain. Note that the cut in the concrete is present where two suspected supply/return lines terminate. SET observed disturbed soils in the indicated area (dashed-magenta).

Site Photo 8

Northeast-looking site photo showing proposed soil boring, grate, and a detected floor drain. No other utilities were detected in the image area. SET removed the metal cover shown in image to observe piping was was obstructed by sediment.

Site Photo 9

Southeast-looking site photo showing proposed soil boring, grate, and a detected floor drain. No other utilities were detected in the image area. SET removed the metal cover shown in image to observe piping but was obstructed by debris.

Site Photo 10

Southwest-looking site photo showing proposed soil boring, grate, and a detected floor drain. No other utilities were detected in the image area. SET removed the metal cover shown in image to observe piping and visibly confirmed piping direction.

Site Photo 11

Southeast-looking site photo showing proposed soil boring in boiler room. No sub-slab utility piping was present in the vicinity of the location. All RF responses were low and constant and GPR was not indicative of buried utilities or anomalies.

Legend:

- Floor Drain
- Area of Disturbed Soil
- ⊕ Proposed Drilling Location

Notes:

(1) The objective of this geophysical investigation was to identify potential underground hazards such as utility pipelines, USTs, or anomalous subsurface features that may adversely affect planned drilling events at numerous proposed SB locations. To meet these objectives, SET used a GSSI SIR 3000 System (GPR) with a 400-megahertz (MHz) ground-penetrating radar antenna, a Fisher TW-6 M-Scope, and an RD7000 radiofrequency (RF) device by Radiodetection, Inc.

(2) All locations deemed free of subsurface obstructions were marked on site with white spray paint (shown as a crosshair symbol). The approximate positions of these features can be seen in the data table above. Note that these positions are of sub-meter accuracy and were not obtained by a licensed land surveyor. These positions are intended for general reference purposes only.

(3) The items on this figure may not be all inclusive. SET does not warrant the fact that additional buried features may be present at this site.

SET GEOPHYSICS & DRILLING SERVICES SUBSURFACE ENVIRONMENTAL TECH., LLC. 19 BROOKSIDE AVENUE PENNINGTON, NJ 08534	**SITE: JOHNSON AVENUE SITE** **ANNOTATED SITE PHOTOS SHOWING PROPOSED DRILLING LOCATIONS, DETECTED UTILITY PIPELINES, AND PERTINENT SITE FEATURES**	
	ADDRESS: 450 JOHNSON AVE. BROOKLYN, NY 11237	
	CLIENT: DEIRDRE CASEY, *LANGAN*	FIGURE 3
PROJECT: 19-243G	SUBSURFACE ENVIRONMENTAL TECHNOLOGIES, LLC.	
FIGURE DATE: AUGUST 29, 2019	DRAWN BY: C. MILLER, PROJECT GEOPHYSICIST	

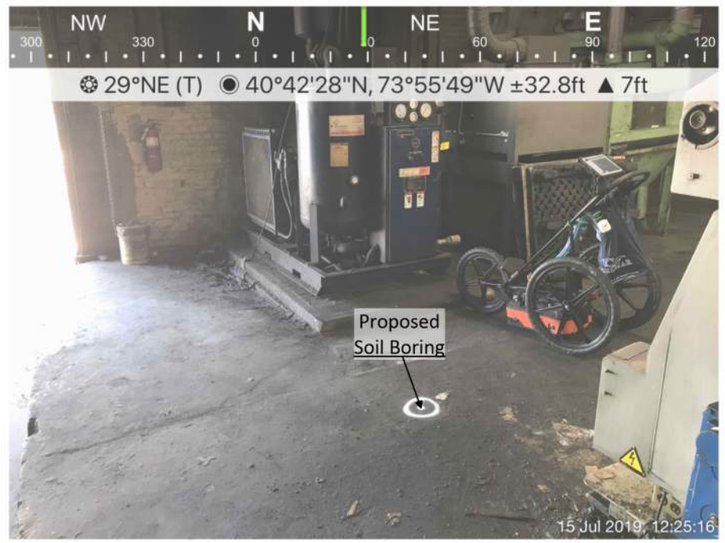
Site Photo 12

Northwest-looking site photo showing proposed soil boring and site features. No utility pipelines were detected within the image area. All Radiofrequency (RF) responses were low and constant, and GPR data were not indicative of utilities.

Site Photo 13

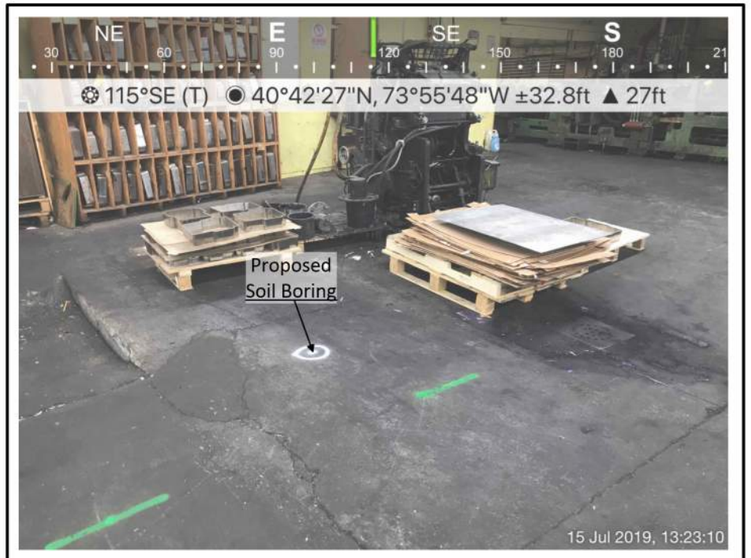
Northeast-looking site photo showing proposed soil boring and detected floor drain piping. Note that the metal grate on the ground surface was removed and the piping was visible. GPR data quality was excellent in this area.

Site Photo 14



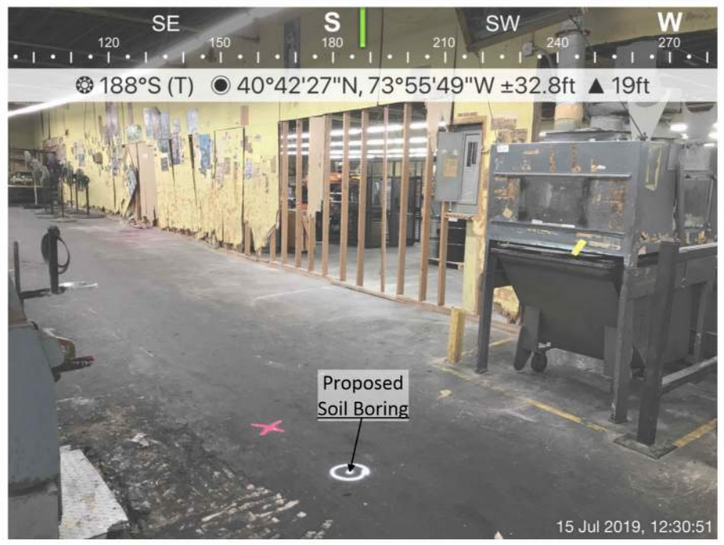
Northeast-looking site photo showing proposed soil boring and site features. No utility pipelines were detected within the image area. All Radiofrequency (RF) responses were low and constant, and GPR data were not indicative of utilities.

Site Photo 15



Southeast-looking site photo showing proposed soil boring and detected floor drain piping. Note that the metal grate on the ground surface was removed and the piping was visible. GPR data quality was excellent in this area.

Site Photo 16



South-looking site photo showing a proposed soil boring, detected spot anomaly (magenta "X"). No other utilities were detected in the image area. GPR data were excellent and all RF responses were low and constant.

Legend:

- Floor Drain
- Proposed Drilling Location
- X — Spot Anomaly

Notes:

(1) The objective of this geophysical investigation was to identify potential underground hazards such as utility pipelines, USTs, or anomalous subsurface features that may adversely affect planned drilling events at numerous proposed SB locations. To meet these objectives, SET used a GSSI SIR 3000 System (GPR) with a 400-megahertz (MHz) ground-penetrating radar antenna, a Fisher TW-6 M-Scope, and an RD7000 radiofrequency (RF) device by Radiodetection, Inc.

(2) All locations deemed free of subsurface obstructions were marked on site with white spray paint (shown as a crosshair symbol). The approximate positions of these features can be seen in the data table above. Note that these positions are of sub-meter accuracy and were not obtained by a licensed land surveyor. These positions are intended for general reference purposes only.

(3) The items on this figure may not be all inclusive. SET does not warrant the fact that additional buried features may be present at this site.

SET GEOPHYSICS & DRILLING SERVICES

SUBSURFACE ENVIRONMENTAL TECH., LLC.
19 BROOKSIDE AVENUE
PENNINGTON, NJ 08534

PROJECT:	19-243G
FIGURE DATE:	AUGUST 29, 2019

SITE: JOHNSON AVENUE SITE

ANNOTATED SITE PHOTOS SHOWING PROPOSED DRILLING LOCATIONS, DETECTED UTILITY PIPELINES, AND PERTINENT SITE FEATURES

ADDRESS: 450 JOHNSON AVE. BROOKLYN, NY 11237

CLIENT: DEIRDRE CASEY, *LANGAN*

SUBSURFACE ENVIRONMENTAL TECHNOLOGIES, LLC.

DRAWN BY: C. MILLER, PROJECT GEOPHYSICIST

FIGURE 4

Site Photo 17

Northeast-looking site photo showing proposed soil boring and site features. No utility pipelines were detected within the image area. All Radiofrequency (RF) responses were low and constant, and GPR data were not indicative of utilities.

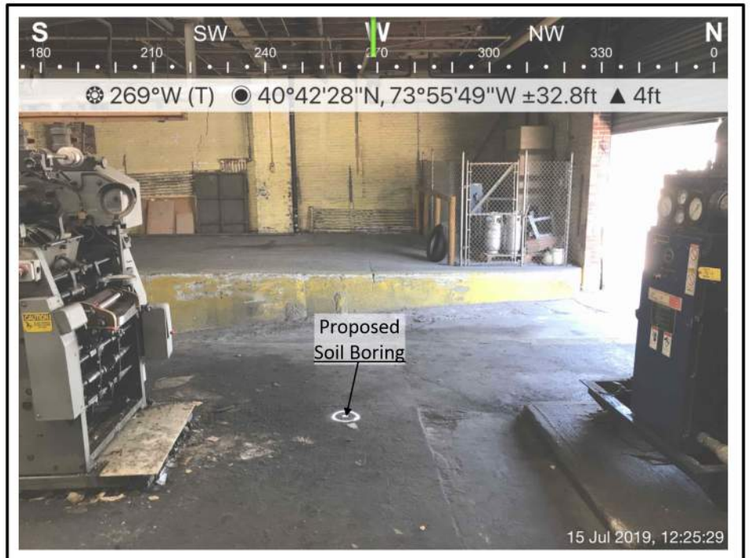
Site Photo 18

Southeast-looking site photo showing proposed soil boring and detected floor drain. Note that the cut in the concrete is present where two suspected supply/return lines terminate. SET observed disturbed soils in the indicated area (dashed-magenta).

Site Photo 19

Southeast-looking site photo showing proposed soil boring and site features. No utility pipelines were detected within the image area. Note that this proposed SB location was placed where significant staining was preset at the ground surface.

Site Photo 20



West-looking site photo showing proposed soil boring and site features. No utility pipelines were detected within the image area. All Radiofrequency (RF) responses were low and constant, and GPR data were not indicative of utilities.

Site Photo 21

Southeast-looking site photo showing a proposed soil boring, detected spot anomaly (magenta "X"). No other utilities were detected in the image area. GPR data were excellent and all RF responses were low and constant.

Legend:

- Floor Drain
- Area of Disturbed Soil
- Proposed Drilling Location
- X — Spot Anomaly

Notes:

(1) The objective of this geophysical investigation was to identify potential underground hazards such as utility pipelines, USTs, or anomalous subsurface features that may adversely affect planned drilling events at numerous proposed SB locations. To meet these objectives, SET used a GSSI SIR 3000 System (GPR) with a 400-megahertz (MHz) ground-penetrating radar antenna, a Fisher TW-6 M-Scope, and an RD7000 radiofrequency (RF) device by Radiodetection, Inc.

(2) All locations deemed free of subsurface obstructions were marked on site with white spray paint (shown as a crosshair symbol). The approximate positions of these features can be seen in the data table above. Note that these positions are of sub-meter accuracy and were not obtained by a licensed land surveyor. These positions are intended for general reference purposes only.

(3) The items on this figure may not be all inclusive. SET does not warrant the fact that additional buried features may be present at this site.

SET GEOPHYSICS & DRILLING SERVICES

SUBSURFACE ENVIRONMENTAL TECH., LLC.
19 BROOKSIDE AVENUE
PENNINGTON, NJ 08534

PROJECT:	19-243G
FIGURE DATE:	AUGUST 29, 2019

SITE: JOHNSON AVENUE SITE

ANNOTATED SITE PHOTOS SHOWING PROPOSED DRILLING LOCATIONS, DETECTED UTILITY PIPELINES, AND PERTINENT SITE FEATURES

ADDRESS: 450 JOHNSON AVE. BROOKLYN, NY 11237

CLIENT: DEIRDRE CASEY, *LANGAN*

SUBSURFACE ENVIRONMENTAL TECHNOLOGIES, LLC.

DRAWN BY: C. MILLER, PROJECT GEOPHYSICIST

FIGURE 5

APPENDIX B

Soil Boring Logs

LANGAN

LOG OF BORING **SB01 / TMW01**

SHEET 1 OF 2

PROJECT: 450 Johnson Avenue		PROJECT NO.: 170588001	
LOCATION: Brooklyn		ELEVATION AND DATUM: NA	
DRILLING EQUIPMENT: 420 Geoprobe MT		DATE STARTED: 7/17/19	DATE FINISHED: 7/17/19 / COMPLETION DEPTH: 15 ft.
SIZE AND TYPE OF BIT: 2 1/4 inch x 5 foot steel		NUMBER OF SAMPLES: DIST. 5 / UNDIST. / CORE - -	
CASING DIAMETER (in): 2-inch / CASING DEPTH(ft): NA		WATER LEVEL (ft.): FIRST ▽ 8.25 / COMPL. ▼ - - / 24 HR. ▼ - -	
SAMPLER: 2-inch x 3-foot acetate lined macrocore		DRILLING FOREMAN: Josh Falk (Eastern)	
SAMPLER HAMMER: NA / WEIGHT(lbs): NA / DROP(in): NA		INSPECTING ENGINEER: Deirdre Casey (Langan)	

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	R1a (0-6") Concrete R1b (6-27") Orange brown to brown silty coarse SAND, trace fine gravel (moist) [FILL]		1	R1	MACROCORE	27"			0.0 0.0	Sample SB01_1.0-1.5 collected at 14:25 for TCL VOCs, TCL SVOCs, PCBs, and Metals.
			2						0.0 0.0	
	R2a (0-3") Orange brown to brown silty coarse SAND, trace fine gravel (moist) [FILL] R2b (3-23") Orange brown SILT, trace fine sand (moist) [FILL]		3	R2	MACROCORE	23"				
			4							
			5						0.0 0.0	
	R3 (0-13") Brownish orange fine SAND, silt, trace fine gravel (saturated) [SP-SM]		6	R3	MACROCORE	13"			0.0	
		▽	7							
			8						0.0	Sample SB01_8.0-8.5 collected at 14:30 for TCL VOCs, TCL SVOCs, and TAL Metals with PCBs on HOLD.
	R4 (0-24") Brownish orange fine SAND, silt, trace fine gravel (saturated) [SP-SM]		9	R4	MACROCORE	25"			0.0	
			10						0.0 0.0	
			11						0.0 0.0	
	R5a (0-8") Brownish orange fine SAND, silt, trace fine gravel (saturated) [SP-SM] R5b (8-18") Gray brown silty fine SAND, trace fine gravel (moist) [SM]		12	R5	MACROCORE	34"			0.0 0.0	
			13						0.0 0.0	
	R5c (18-34") Black clayey SILT, some organics (moist) [PT]		14						0.0 0.0	

\\LANGAN.COM\DATA\NYC\DATA01\170588001\PROJECT DATA_DISCIPLINE\ENVIRONMENTAL\GINTLOGS\450 JOHNSON AVENUE BORING LOGS.GPJ ... 8/15/2019 11:27:05 AM ... Report: Log - BORING

LANGAN

LOG OF BORING **SB01 / TMW01**

SHEET 2 OF 2

PROJECT	PROJECT NO.
450 Johnson Avenue	170588001
LOCATION	**ELEVATION AND DATUM**
Brooklyn	NA

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	End of boring at 15 ft. bgs.		16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32							TMW01 installed on 7/17/2019 to 20' bgs. Screened from 5-20' bgs with 10-slot screen. Removed on 7/19/19. Borehole backfilled with fill-pro sand and bentonite. The surface was restored with concrete.

\\LANGAN.COM\DATA\NYC\DATA01\170588001\PROJECT DATA_DISCIPLINE\ENVIRONMENTAL\GINTLOGS\450 JOHNSON AVENUE BORING LOGS.GPJ ... 8/15/2019 11:27:05 AM ... Report: Log - BORING

LANGAN

LOG OF BORING **SB02 / TMW02**

SHEET 1 OF 2

PROJECT: 450 Johnson Avenue	PROJECT NO.: 170588001
LOCATION: Brooklyn	ELEVATION AND DATUM: NA
DRILLING EQUIPMENT: 420 Geoprobe MT	DATE STARTED: 7/17/19 / DATE FINISHED: 7/17/19 / COMPLETION DEPTH: 15 ft.
SIZE AND TYPE OF BIT: 2 1/4 inch x 5 foot steel	NUMBER OF SAMPLES: DIST. 5 / UNDIST. / CORE - -
CASING DIAMETER (in): 2-inch / CASING DEPTH(ft): NA	WATER LEVEL (ft.): FIRST ▽ 8 / COMPL. ▼ - - / 24 HR. ▼ - -
SAMPLER: 2-inch x 3-foot acetate lined macrocore	DRILLING FOREMAN: Josh Falk (Eastern)
SAMPLER HAMMER: NA / WEIGHT(lbs): NA / DROP(in): NA	INSPECTING ENGINEER: Deirdre Casey (Langan)

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	R1a (0-6") Concrete R1b (6-24") Orange brown to black silty coarse SAND, trace fine gravel (moist) [FILL]		1	R1	MACROCORE	24"			0	
			2						0	
									0	
			3						0	
	R2a (0-6") Orange brown to black silty coarse SAND, trace fine gravel (moist) [FILL] R2b (6-24") Orange brown SILT, trace fine sand (moist) [FILL]		4	R2	MACROCORE	24"			0	
			5						0	
									0	
	R3 (0-30") Brownish orange fine SAND, little silt, trace fine gravel (saturated) [FILL]		6	R3	MACROCORE	30"			0	
			7						0	
		▽	8						0	Sample SB02_8.0-8.5 collected at 15:30 for TCL VOCs, TCL SVOCs, and TAL Metals with PCBs on HOLD.
									0	
	R4 (0-28") Brownish orange fine SAND, little silt, trace fine gravel (saturated) [FILL]		9	R4	MACROCORE	28"			0	
			10						0	
									0	
			11						0	
									0	
	R5a (0-9") Brownish orange fine SAND, little silt, trace fine gravel (saturated) [FILL]		12	R5	MACROCORE	34"			0	
	R5c (14-34") Black clayey SILT, some organics (moist) [PT]		13						0	
	R5b (9-14") Gray brown silty fine SAND, trace fine gravel (moist) [SM]								0	
			14						0	

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LOG OF BORING **SB02 / TMW02**

SHEET 2 OF 2

PROJECT	PROJECT NO.
450 Johnson Avenue	170588001
LOCATION	**ELEVATION AND DATUM**
Brooklyn	NA

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	End of boring at 15 ft. bgs		16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32							TMW02 installed on 7/17/2019 to 15' bgs. Screened from 5-15' bgs with 10-slot screen. Removed on 7/19/19. Borehole backfilled with fill-pro sand and bentonite. The surface was restored with concrete.

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LOG OF BORING **SB03 / TMW03**

SHEET 1 OF 2

PROJECT: 450 Johnson Avenue	PROJECT NO.: 170588001
LOCATION: Brooklyn	ELEVATION AND DATUM: NA
DRILLING EQUIPMENT: 420 Geoprobe MT	DATE STARTED: 7/16/19 / DATE FINISHED: 7/16/19 / COMPLETION DEPTH: 15 ft.
SIZE AND TYPE OF BIT: 2 1/4 inch x 5 foot steel	NUMBER OF SAMPLES: DIST. 5 / UNDIST. / CORE - -
CASING DIAMETER (in): 2-inch / CASING DEPTH(ft): NA	WATER LEVEL (ft.): FIRST ▽ 13 / COMPL. ▼ - - / 24 HR. ▼ - -
SAMPLER: 2-inch x 3-foot acetate lined macrocore	DRILLING FOREMAN: Josh Falk (Eastern)
SAMPLER HAMMER: NA / WEIGHT(lbs): NA / DROP(in): NA	INSPECTING ENGINEER: Deirdre Casey (Langan)

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	R1a (0-6") Concrete R1b (6-20") Light to dark brown coarse SAND, some fine gravel, trace silt (moist) [FILL]		1	R1	MACROCORE	20"			0.0 0.0	
			2						0.0	
	R2a (0-13") Dark brown coarse SAND, some fine gravel, trace silt (moist) [FILL] R2b (13-27") Orange brown fine sandy SILT, trace fine gravel (moist) [FILL]		3	R2	MACROCORE	27"				
			4							
			5						0.0 0.1	
			6						0.0 0.0	
	R3 (0-21") Reddish brown silty fine SAND, trace fine gravel (moist) [FILL]		7	R3	MACROCORE	21"				
			8						0.0 0.3	
	R4a (0-8") Reddish brown silty fine SAND (moist) [FILL] R4b (8-17") Brown SILT, some fine sand (moist) [FILL] R4c (17-36") Brown/black fine SAND, some silt (saturated) [FILL]		9	R4	MACROCORE	24"			3.4	
			10							(17-36") Petroleum odor
			11						0.1 1.8 24.4	
	R5a (0-23") Dark brown silty fine SAND, some coarse sand (saturated) [SM]		12	R5	MACROCORE	31"			206.5 196.2	
		▽	13						126.4 388.8	(0-31") Petroleum odor
	R5b (23-31") Gray brown clayey SILT (saturated) [ML]		14						289.5 33.7	Sample SB03_14.0-14.5 collected at 9:20 for TCL VOCs, TCL SVOCs, PCBs, and TAL Metals and DUP_071619.

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LOG OF BORING **SB03 / TMW03**

SHEET 2 OF 2

PROJECT	PROJECT NO.
450 Johnson Avenue	170588001
LOCATION	**ELEVATION AND DATUM**
Brooklyn	NA

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	End of boring at 15 ft. bgs		16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32							TMW03 installed on 7/16/2019 to 20' bgs. Screened from 5-20' bgs with 10-slot screen. Removed on 7/19/19. Borehole backfilled with fill-pro sand and bentonite. The surface was restored with concrete.

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LOG OF BORING **SB04 / TMW04**

SHEET 1 OF 2

PROJECT: 450 Johnson Avenue	PROJECT NO.: 170588001
LOCATION: Brooklyn	ELEVATION AND DATUM: NA
DRILLING EQUIPMENT: 420 Geoprobe MT	DATE STARTED: 7/16/19 / DATE FINISHED: 7/16/19 / COMPLETION DEPTH: 15 ft.
SIZE AND TYPE OF BIT: 2 1/4 inch x 5 foot steel	NUMBER OF SAMPLES: DIST. 5 / UNDIST. / CORE - -
CASING DIAMETER (in): 2-inch / CASING DEPTH(ft): NA	WATER LEVEL (ft.): FIRST ▽ 11 / COMPL. ▼ - - / 24 HR. ▼ - -
SAMPLER: 2-inch x 3-foot acetate lined macrocore	DRILLING FOREMAN: Josh Falk (Eastern)
SAMPLER HAMMER: NA / WEIGHT(lbs): NA / DROP(in): NA	INSPECTING ENGINEER: Deirdre Casey (Langan)

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	R1a (0-15") Concrete sub-base		1	R1	MACROCORE	23"			2.1	
	R1b (15-23") Light brown silty coarse SAND, trace coarse gravel (moist) [FILL]		2							
	R2a (0-6") Brick [FILL] R2b (6-16") Light brown silty coarse SAND, trace fine gravel (moist) [FILL]		3							
	R2c (16-20") Grayish brown clayey SILT, trace fine clay (moist) [FILL]		4	R2	MACROCORE	20"			1.8	
			5						1.2	
	R3a (0-3") Gray brown clayey SILT, trace fine clay (moist) [FILL] R3b (3-9") Conrete, Light brown sandy coarse GRAVEL (moist) [FILL] R3c (9-18") Orange brown fine to coarse SAND, some silt (saturated) [FILL] R3d (18-21") Brick [FILL] R3e (21-27") Gray brown fine sandy SILT, trace clay (moist) [FILL]		6						0.5	
			7	R3	MACROCORE	27"			7.9	
			8						6.1	(20-27") Petroluem like odor
									4.7	
	R4 (0-22") Dark gray brown fine SAND, some silt (saturated) [FILL]		9						126.2	
			10						194.0	(0-22") Petroleum like odor
		▽	11	R4	MACROCORE	22"			184.7	
									262.2	
									139.6	Sample SB04_11.0-11.5 at 14:44 for TCL VOCs, TCL SVOCs, TAL Metals, and HOLD for PCBs.
	R5a (0-25") Dark gray brown fine SAND, some silt (saturated) [FILL]		12						50.2	
									144.5	(0-22") Petroleum like odor
			13	R5	MACROCORE	35"			76.0	
									228.0	
	R5b (25-35") Dark gray brown fine SAND, some silt, with blue-grey mottles (saturated) [FILL]		14						172.2	
									154.0	

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LOG OF BORING **SB04 / TMW04**

SHEET 2 OF 2

PROJECT	PROJECT NO.
450 Johnson Avenue	170588001
LOCATION	**ELEVATION AND DATUM**
Brooklyn	NA

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	End of boring at 15 ft. bgs		16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32							TMW04 installed on 7/16/2019 to 20' bgs. Screened from 5-20' bgs with 10-slot screen. Removed on 7/19/19. Borehole backfilled with fill-pro sand and bentonite. The surface was restored with concrete.

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LOG OF BORING **SB07 / TMW07**

SHEET 1 OF 2

PROJECT: 450 Johnson Avenue		PROJECT NO.: 170588001	
LOCATION: Brooklyn		ELEVATION AND DATUM: NA	
DRILLING EQUIPMENT: 420 Geoprobe MT		DATE STARTED: 7/18/19	DATE FINISHED: 7/18/19 / COMPLETION DEPTH: 21 ft.
SIZE AND TYPE OF BIT: 2 1/4 inch x 5 foot steel		NUMBER OF SAMPLES: DIST. 7 / UNDIST. / CORE - -	
CASING DIAMETER (in): 2-inch / CASING DEPTH(ft): NA		WATER LEVEL (ft.): FIRST ▽ 15 / COMPL. ▼ - - / 24 HR. ▼ - -	
SAMPLER: 2-inch x 3-foot acetate lined macrocore		DRILLING FOREMAN: Josh Falk (Eastern)	
SAMPLER HAMMER: NA / WEIGHT(lbs): NA / DROP(in): NA		INSPECTING ENGINEER: Deirdre Casey (Langan)	

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	R1a (0-6") Asphalt R1b (6-8") Gray dark brown coarse SAND, little silt, trace fine gravel [FILL] R1c (8-27") Orange brown to brown fine coarse SAND, some silt, trace fine gravel, brick, glass (moist) [FILL]		1 2	R1	MACROCORE	27"			0.0 0.0 0.0 0.0	
	R2a (0-20") Black/brown coarse SAND, trace silt, some fine gravel, coal, coal ash [FILL]		3 4	R2	MACROCORE	23"				
	R2b (20-23") Orange silty coarse to fine SAND (moist) [FILL]		5						0.0 0.0 0.0	Sample SB07_4.5-5.0 collected at 15:00 for TCL VOCs, TCL SVOCs, PCBs, and TAL Metals with Pesticides on HOLD.
	R3a (0-2) Brownish orange silty fine to coarse SAND, trace fine gravel, trace clay, brick, slag (moist) [FILL] R3b (2-23") Brownish orange silty fine to coarse SAND, trace fine gravel, trace clay, (moist) [FILL]		6 7 8	R3	MACROCORE	23"			0.0 0.0 0.0 0.0	
	R4 (0-23") Brownish orange silty fine SAND, trace fine gravel (moist) [FILL]		9 10 11	R4	MACROCORE	23"			0.0 0.0 0.0 0.0	
	R5 (0-17") Brownish orange silty fine SAND, trace fine gravel (moist) [FILL]		12 13 14	R5	MACROCORE	17"			0.0 0.0 0.0 0.0	

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LOG OF BORING **SB07 / TMW07**

SHEET 2 OF 2

PROJECT	PROJECT NO.
450 Johnson Avenue	170588001
LOCATION	**ELEVATION AND DATUM**
Brooklyn	NA

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	R6a (0-8") Orange silty fine SAND (saturated) [SM] R6b (8-16") Gray silty fine SAND (saturated) [SM] R6c (16-34") Dark gray to black silty fine SAND, trace clay, mottles (saturated) [SM]		16 17 18	R6	MACROCORE	34"			0.0 0.0 0.0 0.0	
	R7 (0-7") Dark gray to black silty fine SAND, trace clay, mottles (saturated) [SM]		19 20	R7	MACROCORE	7"			0.0 0.0	
	End of boring at 21 ft. bgs.		21 22 23 24 25 26 27 28 29 30 31 32						0.0	TMW07 installed on 7/18/2019 to 25' bgs. Screened from 5-25' bgs with 10-slot screen. Removed on 7/19/19. Borehole backfilled with fill-pro sand and bentonite. The surface was restored with asphalt.

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LOG OF BORING **SB08 / TMW08**

SHEET 1 OF 2

PROJECT: 450 Johnson Avenue		PROJECT NO.: 170588001	
LOCATION: Brooklyn		ELEVATION AND DATUM: NA	
DRILLING EQUIPMENT: 420 Geoprobe MT		DATE STARTED: 7/18/19	DATE FINISHED: 7/18/19 / COMPLETION DEPTH: 15 ft.
SIZE AND TYPE OF BIT: 2 1/4 inch x 5 foot steel		NUMBER OF SAMPLES: DIST. 4 / UNDIST. / CORE - -	
CASING DIAMETER (in): 2-inch / CASING DEPTH(ft): NA		WATER LEVEL (ft.): FIRST ▽ 12 / COMPL. ▼ - - / 24 HR. ▼ - -	
SAMPLER: 2-inch x 3-foot acetate lined macrocore		DRILLING FOREMAN: Josh Falk (Eastern)	
SAMPLER HAMMER: NA / WEIGHT(lbs): NA / DROP(in): NA		INSPECTING ENGINEER: Deirdre Casey (Langan)	

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	R1a (0-6") Concrete R1b (6-12") Dark brown coarse SAND, some silt, trace fine to coarse, glass, brick (moist) [FILL] R1c (12" - 6') Orange brown coarse SAND, some silt, trace fine gravel (moist) [FILL]		1 2 3 4 5 6	R1	HAND AUGER	72"				Sample SB08_5.0-5.5 collected at 11:20 for TCL VOCs, TCL SVOCs, and TAL Metals with PCBs on HOLD.
	R2 (0-13") Brown fine to coarse SAND, some silt, trace fine gravel, coal ash (moist) [FILL]		7 8 9	R2	MACROCORE	13"				
	R3 (0-9") Brown fine to coarse SAND, some silt, trace fine gravel (moist) [FILL]		10 11 12	R3	MACROCORE	9"				
	R4a (0-24") Orange brown coarse to fine SAND, some silt, trace fine gravel (saturated) [SW-SM]	▽	13	R4	MACROCORE	30"			0.0 0.0 0.0	
	R4b (24-30") Dark brown with black mottles SILT, some fine sand (saturated) [ML]		14						0.0 0.8	Sample SB08_14.0-14.5 collected at 11:10 for TCL VOCs, TCL SVOCs, and TAL Metals with PCBs on HOLD.

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LOG OF BORING **SB08 / TMW08**

SHEET 2 OF 2

PROJECT	PROJECT NO.
450 Johnson Avenue	170588001
LOCATION	**ELEVATION AND DATUM**
Brooklyn	NA

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	End of boring at 15 ft. bgs		16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32							TMW08 installed on 7/18/2019 to 20' bgs. Screened from 10-20' bgs with 10-slot screen. Removed on 7/19/19. Borehole backfilled with fill-pro sand and bentonite. The surface was restored with concrete.

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LOG OF BORING **SB09**

SHEET 1 OF 2

PROJECT: 450 Johnson Avenue		PROJECT NO.: 170588001	
LOCATION: Brooklyn		ELEVATION AND DATUM: NA	
DRILLING EQUIPMENT: 420 Geoprobe MT		DATE STARTED: 7/17/19	DATE FINISHED: 7/17/19 / COMPLETION DEPTH: 15 ft.
SIZE AND TYPE OF BIT: 2 1/4 inch x 5 foot steel		NUMBER OF SAMPLES: DIST. 5 / UNDIST. / CORE - -	
CASING DIAMETER (in): 2-inch / CASING DEPTH(ft): NA		WATER LEVEL (ft.): FIRST ▽ 13 / COMPL. ▼ - - / 24 HR. ▼ - -	
SAMPLER: 2-inch x 3-foot acetate lined macrocore		DRILLING FOREMAN: Josh Falk (Eastern)	
SAMPLER HAMMER: NA / WEIGHT(lbs): NA / DROP(in): NA		INSPECTING ENGINEER: Deirdre Casey (Langan)	

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	R1a (0-6") Concrete									
	R1b (6-12") Dark brown coarse sandy gravel, trace silt, brick [FILL]		1	R1	MACROCORE	19"			0.3	
	R1c (12-19") Dark brown coarse sandy gravel, trace silt [FILL]								0.3	
			2							
	R2 (0-32") Orange brown to dark brown coarse sandy SILT, some coarse gravel (moist) [FILL]		3	R2	MACROCORE	32"				Sample SB09_3.0-3.5 collected at 08:40 for TCL VOCs, TCL SVOCs, and TAL Metals with PCBs on HOLD.
			4						0.3	
			5						0.5	
									0.6	
	R3a (0-7") Orange brown to dark brown coarse to fine sandy SILT, some fine gravel, coal ash (moist) [FILL]		6	R3	MACROCORE	33"			0.4	
	R3b (7-33") Orange brown to dark brown coarse to fine sandy SILT, some fine gravel (moist) [FILL]		7						0.5	
			8						0.5	
									0.5	
									0.4	
	R4a (0-9") Dark brown silty coarse SAND, trace fine gravel (moist) [FILL]		9	R4	MACROCORE	33"			0.5	
	R4b (9-33") Orange brown fine sandy SILT, trace clay, trace coarse gravel (moist) [FILL]		10						0.3	
									0.3	
			11						0.4	
									0.5	
	R5a (0-14") Grayish dark brown SILT, some fine sand, trace organics (moist) [FILL]		12	R5	MACROCORE	23"			0.4	
		▽							0.4	
			13						0.4	
	R5b (14-23") Brown/olive silty fine SAND, trace fine grave, wood (saturated) [FILL]								0.3	
			14						0.3	

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LOG OF BORING **SB09**

SHEET 2 OF 2

PROJECT	PROJECT NO.
450 Johnson Avenue	170588001
LOCATION	**ELEVATION AND DATUM**
Brooklyn	NA

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	End of boring at 15 ft. bgs		16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32							Borehole backfilled with fill-pro sand and bentonite. The surface was restored with concrete.

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LOG OF BORING **SB10 / TMW10**

SHEET 1 OF 2

PROJECT: 450 Johnson Avenue		PROJECT NO.: 170588001	
LOCATION: Brooklyn		ELEVATION AND DATUM: NA	
DRILLING EQUIPMENT: 420 Geoprobe MT		DATE STARTED: 7/19/19	DATE FINISHED: 7/19/19 / COMPLETION DEPTH: 21 ft.
SIZE AND TYPE OF BIT: 2 1/4 inch x 5 foot steel		NUMBER OF SAMPLES: DIST. 7 / UNDIST. / CORE - -	
CASING DIAMETER (in): 2-inch / CASING DEPTH(ft): NA		WATER LEVEL (ft.): FIRST ▽ 11 / COMPL. ▼ - - / 24 HR. ▼ - -	
SAMPLER: 2-inch x 3-foot acetate lined macrocore		DRILLING FOREMAN: Josh Falk (Eastern)	
SAMPLER HAMMER: NA / WEIGHT(lbs): NA / DROP(in): NA		INSPECTING ENGINEER: Deirdre Casey (Langan)	

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	R1a (0-6") Asphalt R1b (6-25") Brown to dark brown fine sandy SILT, trace fine gravel (moist) [FILL]		1	R1	MACROCORE	28"			0.0 0.0	
			2						0.0 0.0	
	R2a (0-4") Olive brown fine SAND, fine silt, trace fine gravel (moist) [FILL] R2b (4-16") Black and brown fine gravelly coarse SAND, little fine sand, coal ash (moist) [FILL] R2c (16-28") Orange brown SILT, some fine to coarse sand, trace fine to coarse gravel (moist) [FILL]		3	R2	MACROCORE	28"			0.0 0.0	
			4						0.0	
			5						0.0	Sample SB10_5.0-5.5 collected at 09:40 for TCL VOCs, TCL SVOCs, and TAL Metals with PCBs on HOLD.
	R3 (0-12") Orange brown silty fine SAND, trace coarse gravel (moist) [FILL]		6	R3	MACROCORE	12"			0.0	
			7							
			8						0.0	
	R4 (0-19") Olive to grayish brown silty fine to coarse SAND (moist) [FILL]		9	R4	MACROCORE	19"			0.0	
		▽	10							
			11						0.0 0.0	Sample SB10_10.5-11 collected at 9:50 for HOLD on all parameters.
	R5 (0-6") Orange brown silty fine SAND (saturated) [SM]		12	R5	MACROCORE	6"			0.0	
			13							
			14						0.0	

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LOG OF BORING **SB10 / TMW10**

SHEET 2 OF 2

PROJECT	PROJECT NO.
450 Johnson Avenue	170588001
LOCATION	**ELEVATION AND DATUM**
Brooklyn	NA

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	R6a (0-9") Orange brown fine SAND, some silt (moist) [SP-SM]		16	R6	MACROCORE	17"				
	R6b (9-17") Grayish brown silty fine SAND (moist) [SM]		17						0.0	
									0.0	
	R7a (0-10") Brown fine SAND with some silt, trace fine gravel (saturated) [SP-SM]		18						0.0	
	R7b (10-16") Olive gray fine sandy SILT, trace clay (saturated) [ML]		19	R7	MACROCORE	22"				
	R7c (16-22") Black SILT, trace fine sand and organics (moist) [PT]		20						0.0	
									0.0	
	End of boring at 21 ft. bgs		21						0.0	TMW10 installed on 7/19/2019 to 25' bgs. Screened from 10-25' bgs with 10-slot screen. No water in well. Removed on 7/19/19. Borehole backfilled with fill-pro sand and bentonite. The surface was restored with asphalt.
			22							
			23							
			24							
			25							
			26							
			27							
			28							
			29							
			30							
			31							
			32							

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LOG OF BORING **SB11**

SHEET 1 OF 2

PROJECT: 450 Johnson Avenue		PROJECT NO.: 170588001	
LOCATION: Brooklyn		ELEVATION AND DATUM: NA	
DRILLING EQUIPMENT: 420 Geoprobe MT		DATE STARTED: 7/17/19	DATE FINISHED: 7/17/19 / COMPLETION DEPTH: 15 ft.
SIZE AND TYPE OF BIT: 2 1/4 inch x 5 foot steel		NUMBER OF SAMPLES: DIST. 5 / UNDIST. / CORE - -	
CASING DIAMETER (in): 2-inch / CASING DEPTH(ft): NA		WATER LEVEL (ft.): FIRST ▽ 5 / COMPL. ▼ - - / 24 HR. ▼ - -	
SAMPLER: 2-inch x 3-foot acetate lined macrocore		DRILLING FOREMAN: Josh Falk (Eastern)	
SAMPLER HAMMER: NA / WEIGHT(lbs): NA / DROP(in): NA		INSPECTING ENGINEER: Deirdre Casey (Langan)	

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	R1a (0-5") Concrete R1b (5-8") Cobble (brick) [FILL] R1c (8-15") Brown coarse SAND, some silt, trace fine gravel (moist) [FILL]		1	R1	MACROCORE	15"			0.0 0.0	
	R2 (0-7") Orange brown coarse sandy coarse GRAVEL (moist) [FILL]		2							
			3	R2	MACROCORE	18"				
		▽	4							
			5							Sample SB11_5.0-5.5 collected at 10:40 for TCL VOCs, TCL SVOCs, and TAL Metals with PCBs on HOLD.
	R3a (0-10") Orange brown coarse SAND, some silt, trace fine gravel (moist) [FILL]		6						0.0	
	R3b (10-18") Orange brown silty coarse SAND, trace fine gravel (saturated) [FILL]		7	R3	MACROCORE	7"				
			8						0.0 0.0	
	R4a (0-16") Brownish orange fine SAND, some silt, trace fine gravel (saturated) [FILL]		9						0.0	
	R4b (16-34") Olive brown fine sandy SILT, trace fine gravel (saturated) [FILL]		10	R4	MACROCORE	34"				
			11						0.0 0.0 0.0	
	R5a (0-3") Olive brown fine sandy SILT, trace fine gravel (saturated) [FILL]		12						0.0	
	R5b (3-16") Dark gray to black clayey SILT (moist) [ML]		13	R5	MACROCORE	28"			0.0 0.0	
	R5c (16-28") Gray fine SAND, trace silt (moist) [SP-SM]		14						0.2 0.0 0.0	

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LOG OF BORING **SB11**

SHEET 2 OF 2

PROJECT	PROJECT NO.
450 Johnson Avenue	170588001
LOCATION	**ELEVATION AND DATUM**
Brooklyn	NA

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	End of boring at 15 ft. bgs		16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32							Borehole backfilled with fill-pro sand and bentonite. The surface was restored with concrete.

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LOG OF BORING **SB12**

SHEET 1 OF 2

PROJECT: 450 Johnson Avenue		PROJECT NO.: 170588001	
LOCATION: Brooklyn		ELEVATION AND DATUM: NA	
DRILLING EQUIPMENT: 420 Geoprobe MT		DATE STARTED: 7/18/19	DATE FINISHED: 7/18/19 / COMPLETION DEPTH: 15 ft.
SIZE AND TYPE OF BIT: 2 1/4 inch x 5 foot steel		NUMBER OF SAMPLES: DIST. 4 / UNDIST. / CORE - -	
CASING DIAMETER (in): 2-inch / CASING DEPTH(ft): NA		WATER LEVEL (ft.): FIRST ▽ 7 / COMPL. ▼ - - / 24 HR. ▼ - -	
SAMPLER: 2-inch x 3-foot acetate lined macrocore		DRILLING FOREMAN: Josh Falk (Eastern)	
SAMPLER HAMMER: NA / WEIGHT(lbs): NA / DROP(in): NA		INSPECTING ENGINEER: Deirdre Casey (Langan)	

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	R1a Hand auger (0-6") Concrete R1b Hand auger (6" - 6') brown silty coarse SAND, little coarse gravel (moist) [FILL]		1–6	R1	HAND AUGER	72"				
	R2a (0-14") Brown silty coarse to fine SAND, little fine gravel, brick (moist) [FILL] R2b (14-22") Orange brown silty coarse SAND, trace clay, trace fine gravel (moist) [FILL]		6–9	R2	MACROCORE	22"			0.0 0.0 0.0 0.0	Sample SB12_6.5-7.0 collected at 10:15 for TCL VOCs, TCL SVOCs, and TAL Metals with PCBs on HOLD.
	R3 (0-9") Orange brown silty coarse SAND, trace fine gravel, brick (moist) [FILL]		9–12	R3	MACROCORE	9"			0.0 0.0	
	R4a (0-4") Orange brown SILT, some coarse sand (saturated) [ML] R4b (4-10") Gray brown coarse sandy SILT (saturated) [ML] R4c (10-17") Gray with black mottles, fine sandy SILT, trace clay (saturated) [ML]		12–14	R4	MACROCORE	17"			0.0 0.0 0.0 0.0	

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LOG OF BORING **SB12**

SHEET 2 OF 2

PROJECT	PROJECT NO.
450 Johnson Avenue	170588001
LOCATION	**ELEVATION AND DATUM**
Brooklyn	NA

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	End of boring at 15 ft. bgs		16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32							Borehole backfilled with fill-pro sand and bentonite. The surface was restored with concrete.

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LOG OF BORING **SB13**

SHEET 1 OF 2

PROJECT: 450 Johnson Avenue		PROJECT NO.: 170588001	
LOCATION: Brooklyn		ELEVATION AND DATUM: NA	
DRILLING EQUIPMENT: 420 Geoprobe MT		DATE STARTED: 7/16/19	DATE FINISHED: 7/16/19 / COMPLETION DEPTH: 15 ft.
SIZE AND TYPE OF BIT: 2 1/4 inch x 5 foot steel		NUMBER OF SAMPLES: DIST. 5 / UNDIST. / CORE - -	
CASING DIAMETER (in): 2-inch / CASING DEPTH(ft): NA		WATER LEVEL (ft.): FIRST ▽ 12 / COMPL. ▼ - - / 24 HR. ▼ - -	
SAMPLER: 2-inch x 3-foot acetate lined macrocore		DRILLING FOREMAN: Josh Falk (Eastern)	
SAMPLER HAMMER: NA / WEIGHT(lbs): NA / DROP(in): NA		INSPECTING ENGINEER: Deirdre Casey (Langan)	

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	R1a (0-5") Concrete R1b (5-22") Light to dark brown silty fine SAND, trace fine gravel, brick, glass (moist) [FILL]		1	R1	MACROCORE	22"			0.0 1.2 3.9	
	R2 (0-34") Dark reddish brown fine sandy SILT, some coarse gravel (moist) [FILL]		3 4 5	R2	MACROCORE	34"			0.0 0.0 0.0 0.0 0.0 0.0	
	R3a (0-7") Dark brown fine SAND, some silt (moist) [FILL] R3b (7-12") Black fine sandy SILT (moist) [FILL] R3c (12-27") Gray brown fine sandy SILT, trace fine gravel (moist) [FILL]		6 7 8	R3	MACROCORE	27"			0.0 0.0 0.0	Sample SB13_8.0-8.5 collected at 13:52 for TCL VOCs, TCL SVOCs, and TAL Metals with PCBs on HOLD.
	R4 (0-7") Reddish brown SILT, some fine sand (moist) [FILL]		9 10 11	R4	MACROCORE	7"			0.0 0.0	
	R5 (0-36") Gray brown fine sandy SILT with black mottles between (15-22") (saturated) [ML]	▽	12 13 14	R5	MACROCORE	36"			0.0 0.0 0.0 0.0 0.0 0.0 0.0	

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LOG OF BORING **SB13**

SHEET 2 OF 2

PROJECT	PROJECT NO.
450 Johnson Avenue	170588001
LOCATION	**ELEVATION AND DATUM**
Brooklyn	NA

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	End of boring at 15 ft. bgs		16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32							Borehole backfilled with fill-pro sand and bentonite. The surface was restored with concrete.

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LOG OF BORING **SB14**

SHEET 1 OF 1

PROJECT: 450 Johnson Avenue		PROJECT NO.: 170588001	
LOCATION: Brooklyn		ELEVATION AND DATUM: NA	
DRILLING EQUIPMENT: 420 Geoprobe MT		DATE STARTED: 7/18/19	DATE FINISHED: 7/18/19 / COMPLETION DEPTH: 12 ft.
SIZE AND TYPE OF BIT: 2 1/4 inch x 5 foot steel		NUMBER OF SAMPLES: DIST. 5 / UNDIST. / CORE - -	
CASING DIAMETER (in): 2-inch / CASING DEPTH(ft): NA		WATER LEVEL (ft.): FIRST ▽ 8 / COMPL. ▼ - - / 24 HR. ▼ - -	
SAMPLER: 2-inch x 3-foot acetate lined macrocore		DRILLING FOREMAN: Josh Falk (Eastern)	
SAMPLER HAMMER: NA / WEIGHT(lbs): NA / DROP(in): NA		INSPECTING ENGINEER: Deirdre Casey (Langan)	

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	R1a (0-12") Concrete			R1	MACROCORE	4"			0.0	
	R1b (12-16") Brown SILT, some coarse SAND, some coarse gravel (moist) [FILL]		1							
			2							
	R2a (0-11") Brown coarse to fine SAND, some silt, trace coarse to fine gravel, coal ash (moist) [FILL]		3	R2	MACROCORE	24"			0.0	
	R2b (11-24") Dark brown coarse SAND, some silt, trace coarse to fine gravel, coal ash (moist) [FILL]		4						0.0	
			5						0.0	Sample SB14_4.5-5.0 collected at 14:05 for TCL VOCs, TCL SVOCs, TAL Metals and PCBs.
	R3a (0-9") Dark brown silty fine to coarse SAND, some fine gravel (moist) [FILL]		6						0.0	
	R3b (9-23") Brown to coarse sandy SILT, trace fine gravel (saturated) [ML]	▽	7	R3	MACROCORE	23"			0.0	
			8						0.0	
									0.0	
	NO RECOVERY 9' to 12' DEPTH		9	R4	MACROCORE	0"			0.0	
			10							
			11						0.0	
	End of boring at 12 ft. bgs		12							Borehole backfilled with fill-pro sand and bentonite. The surface was restored with concrete.
			13							
			14							

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LOG OF BORING **SB15**

SHEET 1 OF 2

PROJECT: 450 Johnson Avenue		PROJECT NO.: 170588001	
LOCATION: Brooklyn		ELEVATION AND DATUM: NA	
DRILLING EQUIPMENT: 420 Geoprobe MT		DATE STARTED: 7/19/19	DATE FINISHED: 7/19/19 / COMPLETION DEPTH: 18 ft.
SIZE AND TYPE OF BIT: 2 1/4 inch x 5 foot steel		NUMBER OF SAMPLES: DIST. 6 / UNDIST. / CORE - -	
CASING DIAMETER (in): 2-inch / CASING DEPTH(ft): NA		WATER LEVEL (ft.): FIRST ▽ 8 / COMPL. ▼ - - / 24 HR. ▼ - -	
SAMPLER: 2-inch x 3-foot acetate lined macrocore		DRILLING FOREMAN: Josh Falk (Eastern)	
SAMPLER HAMMER: NA / WEIGHT(lbs): NA / DROP(in): NA		INSPECTING ENGINEER: Deirdre Casey (Langan)	

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	R1a (0-15") Asphalt and Concrete		1	R1	MACROCORE	26"			0.0	
	R1b (15-26") Black and orange fine to coarse SAND, some fine gravel, trace silt, coal ash (moist) [FILL]		2						0.0	
	R2a (0-14") Orange brown fine SAND, some silt, trace fine gravel (moist) [FILL]		3	R2	MACROCORE	25"			0.0	
	R2b (14-25") Light brown to brown fine SAND, some silt, trace fine gravel, coal ash (moist) [FILL]		4						0.0	
	R3a (0-6") Brown fine SAND, some silt, trace fine gravel (moist) [FILL]		5						0.0	
	R3b (6-12") Dark brown to black fine to coarse SAND, little silt, coal (saturated) [FILL]		6	R3	MACROCORE	28"			0.0	
	R3c (12-22") Brown fine to coarse SAND, little silt (saturated) [FILL]		7						0.0	
	R3d (22-28") Orange brown to brown fine SAND, some silt (moist) [FILL]	▽	8						0.0	Sample SB15_8.0-8.5 collected at 11:20 for TCL VOCs, TCL SVOCs, and TAL Metals with PCBs on HOLD.
	R4a (0-18") Dark brown fine SAND, some silt, concrete (saturated) [FILL]		9	R4	MACROCORE	22"			0.0	
	R4b (18-22") Gray to orange brown silty fine SAND (saturated) [SM]		10						0.0	
	R5 (0-10") Grayish orange brown mottles, silty fine SAND (saturated) [SM]		11						0.0	
			12	R5	MACROCORE	10"			0.0	
			13						0.0	
			14						0.0	

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LOG OF BORING **SB15**

SHEET 2 OF 2

PROJECT	PROJECT NO.
450 Johnson Avenue	170588001
LOCATION	**ELEVATION AND DATUM**
Brooklyn	NA

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	R6 (0-32") Olive brown fine sandy SILT (saturated) [ML]		16	R6	MACROCORE	32"			0.0	
			17						0.0	
									0.0	
									0.0	
			18						0.0	
	End of boring at 18 ft. bgs									Borehole backfilled with fill-pro sand and bentonite. The surface was restored with asphalt.
			19							
			20							
			21							
			22							
			23							
			24							
			25							
			26							
			27							
			28							
			29							
			30							
			31							
			32							

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LOG OF BORING **SB16**

SHEET 1 OF 2

PROJECT: 450 Johnson Avenue		PROJECT NO.: 170588001	
LOCATION: Brooklyn		ELEVATION AND DATUM: NA	
DRILLING EQUIPMENT: 420 Geoprobe MT		DATE STARTED: 7/19/19	DATE FINISHED: 7/19/19 / COMPLETION DEPTH: 15 ft.
SIZE AND TYPE OF BIT: 2 1/4 inch x 5 foot steel		NUMBER OF SAMPLES: DIST. 5 / UNDIST. / CORE - -	
CASING DIAMETER (in): 2-inch / CASING DEPTH(ft): NA		WATER LEVEL (ft.): FIRST ▽ 14 / COMPL. ▼ - - / 24 HR. ▼ - -	
SAMPLER: 2-inch x 3-foot acetate lined macrocore		DRILLING FOREMAN: Josh Falk (Eastern)	
SAMPLER HAMMER: NA / WEIGHT(lbs): NA / DROP(in): NA		INSPECTING ENGINEER: Deirdre Casey (Langan)	

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	R1a (0-5") Asphalt								0.0	
	R1b (5-19") Dark gray fine to coarse sand, trace fine gravel, brick (moist) [FILL]								0.0	(0-34") Petroleum like odor
			1	R1	MACROCORE	34"			66.6	
	R1c (19-23") Black silty fine SAND, trace fine gravel (moist) [FILL]								302.7	
	R1d (23-34") Gray to orange brown fine SAND, some silt, trace fine gravel (moist) [FILL]		2						188.8	
									43.2	
	R2a (0-6") Black fine SAND, some silt, trace fine gravel (moist) [FILL]		3							
	R2b (6-33") Dark orange brown silty fine SAND, trace fine gravel, brick and coal (moist) [FILL]								385.0	Sample SB16_3.0-3.5 collected at 12:15 for TCL VOCs, TCL SVOCs, TAL Metals and PCBs.
			4	R2	MACROCORE	33"			31.2	(0-13") Petroleum like odor
									79.4	
			5						6.3	
									6.5	
	R3a (0-23") Dark orange brown silty fine SAND, trace fine gravel, brick, coal, glazed tile (moist) [FILL]		6						9.5	
									48.5	
			7	R3	MACROCORE	27"			2.1	
	R3b (23-27") Brown fine to coarse SAND, trace silt, brick, coal, glazed tile (moist) [FILL]		8						3.6	
									3.0	
	R4 (0-25") Brown silty fine SAND, brick, coal ash [FILL]		9						5.0	
									3.5	
			10	R4	MACROCORE	25"			1.4	
			11						0.7	
									1.0	
	R5a (0-15") Brown silty fine SAND, trace fine gravel, glazed tile (moist) [FILL]		12						2.0	
									2.1	
			13	R5	MACROCORE	23"			0.8	
	R5b (15-23") Dark orange brown silty fine SAND, trace clay, glazed tile (saturated) [SM] ▽								0.4	
			14						0.6	

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LOG OF BORING **SB16**

SHEET 2 OF 2

PROJECT	PROJECT NO.
450 Johnson Avenue	170588001
LOCATION	**ELEVATION AND DATUM**
Brooklyn	NA

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	End of boring at 15 ft. bgs		16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32							Borehole backfilled with fill-pro sand and bentonite. The surface was restored with asphalt.

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LOG OF BORING **SB17**

SHEET 1 OF 2

PROJECT: 450 Johnson Avenue		PROJECT NO.: 170588001	
LOCATION: Brooklyn		ELEVATION AND DATUM: NA	
DRILLING EQUIPMENT: 420 Geoprobe MT		DATE STARTED: 7/19/19	DATE FINISHED: 7/19/19 / COMPLETION DEPTH: 18 ft.
SIZE AND TYPE OF BIT: 2 1/4 inch x 5 foot steel		NUMBER OF SAMPLES: DIST. 5 / UNDIST. / CORE - -	
CASING DIAMETER (in): 2-inch / CASING DEPTH(ft): NA		WATER LEVEL (ft.): FIRST ▽ 4.5 / COMPL. ▼ - - / 24 HR. ▼ - -	
SAMPLER: 2-inch x 3-foot acetate lined macrocore		DRILLING FOREMAN: Josh Falk (Eastern)	
SAMPLER HAMMER: NA / WEIGHT(lbs): NA / DROP(in): NA		INSPECTING ENGINEER: Deirdre Casey (Langan)	

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	R1a (0-3') Brown fine SAND, some silt, some fine to coarse gravel, brick, concrete (moist) [FILL]		0						0.0	
			1						0.0	
			2						0.0	
			2						0.0	
	R1b (3-6') Dark brown to fine SAND, little silt, fine to coarse gravel, brick, coal (moist) [FILL]		3	R1	HAND AUGER	36"			0.0	
		▽	4						0.0	
			5						0.0	
	R2a (0-13") Black fine GRAVEL, little coarse sand, coal ash (moist) [FILL]		6							
	R2b (13-34") Orange brown fine SAND, little silt, trace fine gravel, organics (roots), ceramics (moist) [FILL]		7	R3	MACROCORE	34"			1.4	
			8						1.3	
			8						0.1	
			9						0.1	
	R3 (0-26") Orange brown fine SAND, some silt, trace fine gravel, coal (moist) [FILL]		9						0.0	
			10	R4	MACROCORE	26"				
			11						0.3	
			11						0.1	
			12						0.0	
	R4 (0-19") Dark brown to black with orange coarse to fine SAND, trace silt, coal, brick (moist) [FILL]		12						0.0	
			13	R5	MACROCORE	19"			0.1	Sample SB17_13.0-13.5 collected at 13:20 for TCL VOCs, TCL SVOCs, TAL Metals, and PCBs.
			14						0.0	

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LOG OF BORING **SB17**

SHEET 2 OF 2

PROJECT	PROJECT NO.
450 Johnson Avenue	170588001
LOCATION	**ELEVATION AND DATUM**
Brooklyn	NA

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	R5a (0-14") Dark brown to black with orange coarse to fine SAND, trace silt (moist) [FILL]		16	R6	MACROCORE	20"				
	R5b (14-20") Gray brown silty fine SAND, trace fine gravel (saturated) [SM]		17						0.2 0.5	
	End of boring at 18 ft. bgs		18						1.2	Borehole backfilled with fill-pro sand and bentonite. The surface was restored with asphalt.
			19							
			20							
			21							
			22							
			23							
			24							
			25							
			26							
			27							
			28							
			29							
			30							
			31							
			32							

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LOG OF BORING **SB18**

SHEET 1 OF 1

PROJECT: 450 Johnson Avenue	PROJECT NO.: 170588001
LOCATION: Brooklyn	ELEVATION AND DATUM: NA
DRILLING EQUIPMENT: 420 Geoprobe MT	DATE STARTED: 7/19/19 / DATE FINISHED: 7/19/19 / COMPLETION DEPTH: 6 ft.
SIZE AND TYPE OF BIT: 2 1/4 inch x 5 foot steel	NUMBER OF SAMPLES: DIST. 2 / UNDIST. / CORE - -
CASING DIAMETER (in): 2-inch / CASING DEPTH(ft): NA	WATER LEVEL (ft.): FIRST ▽ - - / COMPL. ▼ - - / 24 HR. ▼ - -
SAMPLER: 2-inch x 3-foot acetate lined macrocore	DRILLING FOREMAN: Josh Falk (Eastern)
SAMPLER HAMMER: NA / WEIGHT(lbs): NA / DROP(in): NA	INSPECTING ENGINEER: Deirdre Casey (Langan)

ELEV. (ft)	SAMPLE DESCRIPTION	SYMBOL LOG	DEPTH SCALE	SAMPLE DATA: NUMBER	TYPE	RECOV. (in)	PENETR. RESIST BL/6in	N-VALUE BLOWS PER FT	PID Reading (ppm)	REMARKS (DRILLING FLUID, DEPTH OF CASING, FLUID LOSS, DRILLING RESISTANCE, ETC.)
	R1a (0-12") Concrete		1	R1	MACROCORE	28"			0.0	
	R1b (12-28") Brick cobbles, little light brown coarse to fine SAND with silt, brick (moist) [FILL]		2						0.0	
			3						0.0	
	R2 (0-19") Brown fine SAND, little silt, trace fine to coarse gravel, brick (saturated at 4.5 ft.) [FILL]		4	R2	MACROCORE	19"				Sample SB18_4.0-4.5 collected at 14:00 for TCL VOCs, TCL SVOCs, and TAL Metals with PCBs on HOLD.
			5						0.0	
			6						0.0	
	End of boring at 6 ft. bgs		7						0.0	Borehole backfilled with fill-pro sand and bentonite. The surface was restored with concrete.
			8							
			9							
			10							
			11							
			12							
			13							
			14							

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APPENDIX C

Groundwater Sampling Logs

Phase II Environmental Site Investigation
Groundwater Sampling Forms

450 Johnson Avenue
Brooklyn, New York
Langan Project No.: 170588001

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	450 Johnson Avenue	**Well No:**	TMW-1	**Water Quality Device Model:**	YSI 6820	**Weather:**	80s sunny		TMW01_071819
Project Number:	170588001	**Well Depth:**	20'	**Pine Number:**	5726	**Background PID (ppm):**	0.0	**Sample(s):**	--
Site Location:	Brooklyn	**Well Diameter:**	1"	**Pump Make and Model:**	pine peristaltic	**PID Beneath Inner Cap (ppm):**	0		--
Sampling	Deirdre Casey	**Well Screen**	5'	**Pine Number:**	028262	**Pump Intake Depth:**	18.00	**Sample Date:**	7/18/2019
Personnel:	Jack Cambeiro	**Interval:**	20'	**Tubing Diameter:**	1/4" IDx3/8" OD	**Depth to Water Before Purge:**	8.75	**Sample Time:**	13:25

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.
BEGIN PURGING										
14:20	18	6.74	-6	0.530	337.5	2.89	N/A	--	0	slight PET odor, highly turbid, brown
14:25	17.22	6.64	-281	0.615	1123.8	0.72	N/A	0.24	1.2	
14:30	17.22	6.61	-244	0.685	1272.3	0.78	N/A	0.14	1.9	
14:35	17.10	6.62	-199	0.736	1007.4	0.80	N/A	0.16	2.7	slight PET odor, low turbid, starting to
14:40	17.04	6.62	-169	0.743	624.6	0.83	N/A	0.21	3.75	
14:45	17.06	6.63	-170	0.742	606.7	0.81	N/A	0.09	4.2	
14:50	17.01	6.63	-156	0.750	471.5	0.79	N/A	0.12	4.8	
14:55	17.13	6.62	-155	0.742	680.5	0.75	N/A	0.09	5.25	
15:00	17.25	6.63	-137	0.729	280.4	0.79	N/A	0.15	6	slight PET odor, low turbid, clear
15:05	17.29	6.64	-122	0.731	212.0	0.81	N/A	0.1	6.5	
15:10	17.34	6.64	-89	0.729	202.4	0.81	N/A	0.1	7	
15:15	17.31	6.64	-101	0.731	180.7	0.81	N/A	0.11	7.55	
15:20	17.27	6.64	-110	0.730	164.4	0.81	N/A	0.05	7.8	

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemens per centimeter
10. NTU = Nephelometric Turbidity Unit

Phase II Environmental Site Investigation
Groundwater Sampling Forms

450 Johnson Avenue
Brooklyn, New York
Langan Project No.: 170588001

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	450 Johnson Avenue	**Well No:**	TMW02	**Water Quality Device Model:**	YSI 6820	**Weather:**	80s, rain	**Sample(s):**	TMW02_071819
Project Number:	170588001	**Well Depth:**	15'	**Pine Number:**	5726	**Background PID (ppm):**	0.0		DUP02_071819
Site Location:	Brooklyn	**Well Diameter:**	1"	**Pump Make and Model:**	Pine peristaltic	**PID Beneath Inner Cap (ppm):**	1		--
Sampling	Deirdre Casey	**Well Screen**	5'	**Pine Number:**	028262	**Pump Intake Depth:**	13.50	**Sample Date:**	7/18/2019
Personnel:	Jack Cambeiro	**Interval:**	15'	**Tubing Diameter:**	1/4" IDx3/8" OD	**Depth to Water Before Purge:**	8.95	**Sample Time:**	9:17

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.
BEGIN PURGING										
8:15	19.11	6.78	115	0.220	63.7	4.50	N/A	--	0	slight PET odor, highly turbid, brown color
8:20	19.17	6.51	104	0.198	1250.6	4.80	N/A	0.15	0.75	
8:25	19.10	6.42	99	0.259	1245.6	4.04	N/A	0.05	1	
8:30	19.05	6.35	93	0.356	1240.2	3.28	N/A	0.05	1.25	
8:35	19.09	6.27	80	0.366	1250.6	2.04	N/A	0.05	1.5	
8:40	19.03	6.23	80	0.361	1153.6	1.61	N/A	0.05	1.75	slight PET odor, low turbid, starting to clear up
8:45	19.03	6.21	66	0.361	658.0	1.38	N/A	0.05	2	
8:50	19.08	6.19	58	0.360	578.6	1.28	N/A	0.05	2.25	
8:55	19.04	6.20	52	0.359	1250.1	1.19	N/A	0.05	2.5	
9:00	18.99	6.18	61	0.307	908.0	1.30	N/A	0.08	2.9	
9:05	19.22	6.15	80	0.362	524.8	0.69	N/A	0.04	3.1	
9:10	19.19	6.14	67	0.357	210.0	0.59	N/A	0.03	3.25	slight PET odor, low turbid, water appears clear
9:15	19.14	6.13	63	0.358	211.8	0.59	N/A	0.05	3.5	

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemens per centimeter
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Phase II Environmental Site Investigation
Groundwater Sampling Forms

450 Johnson Avenue
Brooklyn, New York
Langan Project No.: 170588001

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	450 Johnson Avenue	**Well No:**	TMW03	**Water Quality Device Model:**	YSI 650	**Weather:**	80s sunny		TMW03_071719
Project Number:	170588001	**Well Depth:**	20'	**Pine Number:**	--	**PID Background (ppm):**	0.0	**Sample(s):**	--
Site Location:	Brooklyn	**Well Diameter:**	1"	**Pump Make and Model:**	pine peristaltic	**PID Beneath Inner Cap (ppm):**	18		--
Sampling	Deirdre Casey	**Well Screen**	5'	**Pine Number:**	028262	**Pump Intake Depth:**	17.00	**Sample Date:**	7/17/2019
Personnel:	Jack Cambeiro	**Interval:**	30'	**Tubing Diameter:**	1/4" IDx3/8" OD	**Depth to Water Before Purge:**	9.97	**Sample Time:**	11:00

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.
BEGIN PURGING										
9:55	29.90	8.15	202	0.002	--	104.00	N/A	--	0	Pet. like odor, highly turbid
10:00	20.40	6.84	-201	1.278	--	44.20	N/A	0.12	0.6	Pet. like odor, highly turbid
10:05	20.01	6.72	-190	1.279	--	3.16	N/A	0.07	0.95	Pet. like odor
10:10	19.91	6.69	-176	1.269	--	2.70	N/A	0.06	1.25	Pet. like odor
10:15	19.79	6.69	-178	1.261	--	2.51	N/A	0.05	1.5	Pet. like odor
10:20	19.77	6.69	-164	1.270	--	2.40	N/A	0.06	1.8	Pet. like odor
10:25	19.70	6.67	-132	1.268	--	2..27	N/A	0.08	2.2	Pet. like odor
10:30	19.71	6.67	-128	1.280	--	2.11	N/A	0.06	2.5	Pet. like odor
10:35	19.64	6.68	-125	1.262	--	1.91	N/A	0.06	2.8	Pet. like odor
10:40	19.60	6.67	-102	1.297	--	1.67	N/A	0.08	3.2	Pet. like odor
10:45	19.71	6.66	-98	1.320	--	1.52	N/A	0.06	3.5	Pet. like odor
10:50	19.81	6.68	-102	1.314	--	1.45	N/A	0.06	3.8	Pet. like odor
10:55	19.74	6.67	-98	1.336	--	1.34	N/A	0.09	4.25	Pet. like odor
										Discontinuous sheen
										YSI 650 model did not have a turbidity meter (YSI replaced later)

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemens per centimeter
10. NTU = Nephelometric Turbidity Unit

Phase II Environmental Site Investigation
Groundwater Sampling Forms

450 Johnson Avenue
Brooklyn, New York
Langan Project No.: 170588001

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	450 johnson Avenue	**Well No:**	TMW04	**Water Quality Device Model:**	YSI 6820	**Weather:**	80s sunny		TMW04
Project Number:	170588001	**Well Depth:**	20'	**Pine Number:**	5726	**Background PID (ppm):**	0.0	**Sample(s):**	--
Site Location:	Brooklyn	**Well Diameter:**	1"	**Pump Make and Model:**	pine peristaltic	**PID Beneath Inner Cap (ppm):**	6.9		--
Sampling	Deirdre Casey	**Well Screen**	5'	**Pine Number:**	028262	**Pump Intake Depth:**	18.00	**Sample Date:**	7/17/2019
Personnel:	Jack Cambeiro	**Interval:**	20'	**Tubing Diameter:**	1/4" IDx3/8" OD	**Depth to Water Before Purge:**	9.97	**Sample Time:**	13:00

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.
BEGIN PURGING										
12:25	20.74	6.73	-78	1.177	--	2.27	--	0.05	0.25	
12:30	20.53	6.40	-61	1.105	--	0.42	--	0.1	0.75	
12:35	20.64	6.38	-64	1.115	--	0.38	--	0.05	1	PET odor, slightly turbid, almost clear (muddy color)
12:40	20.59	6.42	-69	1.096	--	0.34	--	0.05	1.25	
12:45	20.54	6.43	-73	1.090	--	0.32	--	0.05	1.5	
12:50	20.51	6.44	-77	1.090	--	0.30	--	0.05	1.75	
12:55	20.48	6.45	-80	1.090	--	0.33	--	0.05	2	YSI 650 model did not have a turbidity meter (YSI replaced later)

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemens per centimeter
10. NTU = Nephelometric Turbidity Unit

Phase II Environmental Site Investigation
Groundwater Sampling Forms

450 Johnson Avenue
Brooklyn, New York
Langan Project No.: 170588001

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	450 Johnson Avenue	**Well No:**	TMW07	**Water Quality Device Model:**	YSI 6820	**Weather:**	80s sunny		TMW07_071919
Project Number:	170588001	**Well Depth:**	25'	**Pine Number:**	5726	**Background PID (ppm):**	0.0	**Sample(s):**	--
Site Location:	Brooklyn	**Well Diameter:**	1"	**Pump Make and Model:**	pine peristaltic	**PID Beneath Inner Cap (ppm):**	1.1		--
Sampling	Deirdre Casey	**Well Screen**	5'	**Pine Number:**	028262	**Pump Intake Depth:**	24'	**Sample Date:**	7/19/2019
Personnel:	Jack Cambeiro	**Interval:**	25'	**Tubing Diameter:**	1/4" IDx3/8" OD	**Depth to Water Before Purge:**	14.97	**Sample Time:**	9:00

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.
BEGIN PURGING										
8:15	18.61	6.41	-29	0.659	120.6	3.92	--	--	0	turbid, light brown , sulfur like smell
8:20	19.26	6.51	-156	0.652	1329.5	1.08	--	0.1	0.5	low turbid, clearing up, sulfur like
8:25	19.48	6.56	.226.9	0.730	1331.7	1.03	--	0.1	1	
8:30	--	--	--	--	--	--	--	0.2	--	Poor recharge - well sampled without

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemens per centimeter
10. NTU = Nephelometric Turbidity Unit

Phase II Environmental Site Investigation
Groundwater Sampling Forms

450 Johnson Avenue
Brooklyn, New York
Langan Project No.: 170588001

Project Information		Well Information		Equipment Information		Sampling Conditions		Sampling Information	
Project Name:	450 Johnson Avenue	**Well No:**	TMW08	**Water Quality Device Model:**	YSI 6820	**Weather:**	80s, rain		TMW08_071819
Project Number:	170588001	**Well Depth:**	20'	**Pine Number:**	5726	**Background PID (ppm):**	0.0	**Sample(s):**	–
Site Location:	Brooklyn	**Well Diameter:**	1"	**Pump Make and Model:**	pine peristaltic	**PID Beneath Inner Cap (ppm):**	0		–
Sampling	Deirdre Casey	**Well Screen**	10'	**Pine Number:**	028262	**Pump Intake Depth:**	18.00	**Sample Date:**	7/18/2019
Personnel:	Jack Cambeiro	**Interval:**	20'	**Tubing Diameter:**	1/4" IDx3/8" OD	**Depth to Water Before Purge:**	8.57	**Sample Time:**	11:25

STABILIZATION = 3 successive readings within limits

TIME	TEMP °Celsius (+/- 3%)	PH (+/- 0.1)	ORP mV (+/- 10mV)	CONDUCTIVITY mS/cm (+/- 3%)	TURBIDITY ntu (+/- 10%) above 5 NTU	DO mg/l (+/- 10%) above 0.5 mg/l	DTW ft Drawdown < 0.33 ft	Flow Rate (gpm) <0.13 gpm)	Cumulative Discharge Volume (Gal)	NOTES color, odor etc.
BEGIN PURGING										
11:05	22.13	7.49	-103	0.647	225.0	1.44	–	–	0	no odor, very turbid, brown color
11:10	–	–	–	–	–	–	–	0.2	1	Poor recharge - well sampled without
11:15	–	–	–	–	–	–	–	0.2	–	stabilization

Notes:
1. Well depths and groundwater depths were measured in feet below the top of well casing.
2. Well and tubing diameters are measured in inches.
3. PID = Photoionization Detector
4. PPM = Parts per million
5. pH = Hydrogen ion concentration
6. ORP = Oxidation-reduction potential, measured in millivolts (mV)
7. DO = Dissolved Oxygen, measured in milligrams per liter (mg/L)
8. DTW = Depth to water
9. mS/cm = milli-Siemens per centimeter
10. NTU = Nephelometric Turbidity Unit

APPENDIX D

Sub-Slab Vapor Construction Logs

SUB-SLAB SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SSV01_071719

PROJECT: 450 Johnson Avenue	**PROJECT NO.:** 170588001
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA
DRILLING FIRM OR LANGAN INSTALLER: Eastern Environmental Solutions, Inc.	**INSTALLATION DATE STARTED:** 7/17/2019 **DATE FINISHED:** 7/17/2019
INSTALLATION FOREMAN: Josh Falk (Eastern)	**SAMPLE DATE STARTED:** 7/18/2019 **DATE FINISHED:** 7/18/2019
INSTALLATION EQUIPMENT: Geoprobe® 420 M	**TYPE OF SAMPLING DEVICE:** 2.7-Liter Summa Canister
INSPECTOR: Deirdre Casey (Langan)	**SAMPLER:** Deirdre Casey (Langan)
POTENTIAL SAMPLE INTERFERENCES: Drilling ocurring in the adjoining warehouse space.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 73-95° Farenheit; Wind: NE 0-10 mph; Precipitation: Overcast, rain 0900-1100; Pressure: 29.9 in Hg

METHOD OF INSTALLATION AND PURGING:

Eastern Environmental advanced sub-slab vapor point to 3 inches below the top of the slab. A small amount of No. 2 sand was backfilled into the borehole to set the vapor tubing. No. 2 sand was backfilled around the tubing to 1 inch bgs, and the remainder of the borehole was sealed with bentonite.

TUBING TYPE/DIAMETER: 1/4-Inch Teflon-lined Polyethylene Tubing	**TYPE OF MATERIAL ABOVE SEAL:** Bentonite
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: None	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Bentonite
BOREHOLE DIAMETER: 2-Inch	**FILTER PACK MATERIAL (Sand or Glass Beads):** No. 2 Sand

PURGE VOLUME (L):	0.01	
PURGE FLOW RATE (ML/MIN):	200	
PID AFTER PURGE (PPM):	0.2	
HELIUM TESTS	Pre-sampling	Post-sampling
HELIUM TEST IN BUCKET(%):	11.0%	10.2%
HELIUM TEST IN TUBE (PPM):	0.0%	0.0%
SAMPLE START TIME:	8:17	
SAMPLE STOP TIME:	15:07	
TOTAL SAMPLE TIME (MIN):	410	
REGULATOR FLOW RATE (L/MIN):	0.005	
VOLUME OF SAMPLE (LITERS):	2.7	
PID AFTER SAMPLE (PPM):	0	
SAMPLE MOISTURE CONTENT:	-	
CAN SERIAL NUMBER:	2037	
REGULATOR SERIAL NUMBER:	957	
CAN START VACUUM PRESS. (" HG):	-29.91	
CAN STOP VACUUM PRESS. (" HG):	-8.49	

IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	**DEPTH (FEET FROM SURFACE)**	**NOTES**
SURFACE		6" concrete slab
Top of Seal	0	
Top of Pack	1"	
Tube Depth	3"	

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

Sample Name: SSV01_071819

Langan Engineering, Environmental, Surveying, Landscape Architecture, and Geology D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor, New York, New York 10001-2727

SUB-SLAB SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SSV02_071919

PROJECT: 450 Johnson Avenue	**PROJECT NO.:** 170588001
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA
DRILLING FIRM OR LANGAN INSTALLER: Eastern Environmental Solutions, Inc.	**INSTALLATION DATE STARTED:** 7/17/2019 **DATE FINISHED:** 7/17/2019
INSTALLATION FOREMAN: Josh Falk (Eastern)	**SAMPLE DATE STARTED:** 7/19/2019 **DATE FINISHED:** 7/19/2019
INSTALLATION EQUIPMENT: Geoprobe® 420 M	**TYPE OF SAMPLING DEVICE:** 2.7-Liter Summa Canister
INSPECTOR: Deirdre Casey (Langan)	**SAMPLER:** Deirdre Casey (Langan)
POTENTIAL SAMPLE INTERFERENCES: Drilling ocurring in the adjoining warehouse space.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 72-89° Farenheit; Wind: NE 5-12 mph; Precipitation: None (sampling indoors); Pressure: 29.8 in Hg

METHOD OF INSTALLATION AND PURGING:

Eastern Environmental advanced sub-slab vapor point to 3 inches below the top of the slab. A small amount of No. 2 sand was backfilled into the borehole to set the vapor tubing. No. 2 sand was backfilled around the tubing to 1 inch bgs, and the remainder of the borehole was sealed with bentonite.

TUBING TYPE/DIAMETER: 1/4-Inch Teflon-lined Polyethylene Tubing	**TYPE OF MATERIAL ABOVE SEAL:** Bentonite
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: None	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Bentonite
BOREHOLE DIAMETER: 2-Inch	**FILTER PACK MATERIAL (Sand or Glass Beads):** No. 2 Sand

PURGE VOLUME (L):	0.01	
PURGE FLOW RATE (ML/MIN):	200	
PID AFTER PURGE (PPM):	0.6	
HELIUM TESTS	Pre-sampling	Post-sampling
HELIUM TEST IN BUCKET(%):	11.5%	11.0%
HELIUM TEST IN TUBE (PPM):	0.0%	0.0%
SAMPLE START TIME:	7:56	
SAMPLE STOP TIME:	15:08	
TOTAL SAMPLE TIME (MIN):	432	
REGULATOR FLOW RATE (L/MIN):	0.005	
VOLUME OF SAMPLE (LITERS):	2.7	
PID AFTER SAMPLE (PPM):	0	
SAMPLE MOISTURE CONTENT:	-	
CAN SERIAL NUMBER:	2824	
REGULATOR SERIAL NUMBER:	1248	
CAN START VACUUM PRESS. (" HG):	-29.93	
CAN STOP VACUUM PRESS. (" HG):	-9.49	

IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	**DEPTH (FEET FROM SURFACE)**	**NOTES**
SURFACE / SURFACE		6" concrete slab
Top of Seal	0	
Top of Pack	1"	
Probe Depth	3"	

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

Sample Name: SSV02_071919

SUB-SLAB SOIL VAPOR SAMPLING LOG SHEET

Sample Number: SSV03_071919

PROJECT: 450 Johnson Avenue	**PROJECT NO.:** 170588001
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** NA
DRILLING FIRM OR LANGAN INSTALLER: Eastern Environmental Solutions, Inc.	**INSTALLATION DATE STARTED:** 7/17/2019 **DATE FINISHED:** 7/17/2019
INSTALLATION FOREMAN: Josh Falk (Eastern)	**SAMPLE DATE STARTED:** 7/19/2019 **DATE FINISHED:** 7/19/2019
INSTALLATION EQUIPMENT: Geoprobe® 420 M	**TYPE OF SAMPLING DEVICE:** 2.7-Liter Summa Canister
INSPECTOR: Deirdre Casey (Langan)	**SAMPLER:** Deirdre Casey (Langan)
POTENTIAL SAMPLE INTERFERENCES: Drilling ocurring in the adjoining warehouse space.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 72-89° Farenheit; Wind: NE 5-12 mph; Precipitation: None (sampling indoors); Pressure: 29.8 in Hg

METHOD OF INSTALLATION AND PURGING:

Eastern Environmental advanced sub-slab vapor point to 3 inches below the top of the slab. A small amount of No. 2 sand was backfilled into the borehole to set the vapor tubing. No. 2 sand was backfilled around the tubing to 1 inch bgs, and the remainder of the borehole was sealed with bentonite.

TUBING TYPE/DIAMETER: 1/4-Inch Teflon-lined Polyethylene Tubing	**TYPE OF MATERIAL ABOVE SEAL:** Bentonite
IMPLANT SCREEN TYPE/LENGTH/DIAMETER: None	**SEAL MATERIAL (Bentonite, Beeswax, Modeling Clay, etc.):** Bentonite
BOREHOLE DIAMETER: 2-Inch	**FILTER PACK MATERIAL (Sand or Glass Beads):** No. 2 Sand

PURGE VOLUME (L):	0.01	
PURGE FLOW RATE (ML/MIN):	200	
PID AFTER PURGE (PPM):	1.3	
HELIUM TESTS	Pre-sampling	Post-sampling
HELIUM TEST IN BUCKET(%):	11.5%	11.0%
HELIUM TEST IN TUBE (PPM):	0.0%	0.0%
SAMPLE START TIME:	7:56	
SAMPLE STOP TIME:	15:08	
TOTAL SAMPLE TIME (MIN):	432	
REGULATOR FLOW RATE (L/MIN):	0.005	
VOLUME OF SAMPLE (LITERS):	2.7	
PID AFTER SAMPLE (PPM):	0	
SAMPLE MOISTURE CONTENT:	-	
CAN SERIAL NUMBER:	230	
REGULATOR SERIAL NUMBER:	0492	
CAN START VACUUM PRESS. (" HG):	-29.93	
CAN STOP VACUUM PRESS. (" HG):	-9.49	

IMPLANT/PROBE DETAILS (SEAL, FILTER, ETC.)	**DEPTH (FEET FROM SURFACE)**	**NOTES**
SURFACE / SURFACE		6" concrete slab
Top of Seal	0	
Top of Pack	1"	
Probe Depth	3"	

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

Sample Name: SSV02_071919

Langan Engineering, Environmental, Surveying, Landscape Architecture, and Geology D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor, New York, New York 10001-2727

AIR SAMPLING LOG SHEET

Sample Number: IA01_071819

PROJECT: 450 Johnson Avenue	**PROJECT NO.:** 170588001
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** N/A
SAMPLER: Eastern Environmental Solutions, Inc.	**SAMPLE DATE STARTED:** 7/18/2019 **DATE FINISHED:** 7/18/2019
INSPECTOR: Deirdre Casey	**TYPE OF SAMPLING DEVICE:** 2.7-Liter Summa Canister
POTENTIAL SAMPLE INTERFERENCES: Drilling ocurring in the adjoining warehouse space.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 73-95° Farenheit Wind: NE 0-10 mph Precipitation: Overcast, rain 0900-1100 Pressure: 29.9 in Hg

METHOD OF INSTALLATION AND SAMPLING:

Langan field screened the sample location with a MiniRAE 3000 photoionization detector prior to sampling. Sample consisted of 2.7L Summa canister fitted with an 8-hour flow control valve. The flow controller valve was opened to initiate the 8-hour sample collection. The sample and flow controller were checked each hour during sampling to ensure proper operation.

SAMPLE DETAILS	
HEIGHT ABOVE GROUND (FT):	4.5
PID BEFORE SAMPLE (PPM):	0.0
SAMPLE START TIME:	8:16
SAMPLE STOP TIME:	15:06
TOTAL SAMPLE TIME (MIN):	410
REGULATOR FLOW RATE (L/MIN):	0.005
VOLUME OF SAMPLE (LITERS):	2.7
PID AFTER SAMPLE (PPM):	0.0
SAMPLE MOISTURE CONTENT:	-
CAN SERIAL NUMBER:	2793
REGULATOR SERIAL NUMBER:	0702
CAN START VACUUM PRESS. (" HG):	-30.47
CAN STOP VACUUM PRESS. (" HG):	-9.16

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

Sample Name: IA01_071819

Langan Engineering, Environmental, Surveying, Landscape Architecture, and Geology D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor, New York, New York 10001-2727

AIR SAMPLING LOG SHEET

Sample Number: IA02_071919

PROJECT: 450 Johnson Avenue	**PROJECT NO.:** 170588001
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** N/A
SAMPLER: Eastern Environmental Solutions, Inc.	**SAMPLE DATE STARTED:** 7/19/2019 **DATE FINISHED:** 7/19/2019
INSPECTOR: Deirdre Casey	**TYPE OF SAMPLING DEVICE:** 2.7-Liter Summa Canister
POTENTIAL SAMPLE INTERFERENCES: Drilling ocurring in the adjoining warehouse space.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 72-89° Farenheit Wind: NE 5-12 mph Precipitation: None Pressure: 29.8 in Hg

METHOD OF INSTALLATION AND SAMPLING:

Langan field screened the sample location with a MiniRAE 3000 photoionization detector prior to sampling. Sample consisted of 2.7L Summa canister fitted with an 8-hour flow control valve. The flow controller valve was opened to initiate the 8-hour sample collection. The sample and flow controller were checked each hour during sampling to ensure proper operation.

SAMPLE DETAILS

HEIGHT ABOVE GROUND (FT):	4
PID BEFORE SAMPLE (PPM):	0.0
SAMPLE START TIME:	7:57
SAMPLE STOP TIME:	15:04
TOTAL SAMPLE TIME (MIN):	427
REGULATOR FLOW RATE (L/MIN):	0.005
VOLUME OF SAMPLE (LITERS):	2.7
PID AFTER SAMPLE (PPM):	N/A
SAMPLE MOISTURE CONTENT:	-
CAN SERIAL NUMBER:	2872
REGULATOR SERIAL NUMBER:	0813
CAN START VACUUM PRESS. (" HG):	-30.03
CAN STOP VACUUM PRESS. (" HG):	-7.68

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

Sample Name: IA02_071919

Langan Engineering, Environmental, Surveying, Landscape Architecture, and Geology D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor, New York, New York 10001-2727

AIR SAMPLING LOG SHEET

Sample Number: IA03_071919

PROJECT: 450 Johnson Avenue	**PROJECT NO.:** 170588001
LOCATION: Brooklyn, NY	**SURFACE ELEVATION AND DATUM:** N/A
SAMPLER: Eastern Environmental Solutions, Inc.	**SAMPLE DATE STARTED:** 7/19/2019 **DATE FINISHED:** 7/19/2019
INSPECTOR: Deirdre Casey	**TYPE OF SAMPLING DEVICE:** 2.7-Liter Summa Canister
POTENTIAL SAMPLE INTERFERENCES: Drilling ocurring in the adjoining warehouse space.	**WEATHER CONDITIONS (PRECIP., TEMP., PRESS., WIND SPEED AND DIR.):** Temp: 72-89° Farenheit Wind: NE 5-12 mph Precipitation: None Pressure: 29.8 inHg

METHOD OF INSTALLATION AND SAMPLING:

Langan field screened the sample location with a MiniRAE 3000 photoionization detector prior to sampling. Sample consisted of 2.7L Summa canister fitted with an 8-hour flow control valve. The flow controller valve was opened to initiate the 8-hour sample collection. The sample and flow controller were checked each hour during sampling to ensure proper operation.

SAMPLE DETAILS

HEIGHT ABOVE GROUND (FT):	4
PID BEFORE SAMPLE (PPM):	0.0
SAMPLE START TIME:	7:44
SAMPLE STOP TIME:	14:50
TOTAL SAMPLE TIME (MIN):	426
REGULATOR FLOW RATE (L/MIN):	0.005
VOLUME OF SAMPLE (LITERS):	2.7
PID AFTER SAMPLE (PPM):	0.0
SAMPLE MOISTURE CONTENT:	-
CAN SERIAL NUMBER:	2825
REGULATOR SERIAL NUMBER:	0432
CAN START VACUUM PRESS. (" HG):	-30.46
CAN STOP VACUUM PRESS. (" HG):	-8.75

SAMPLE LOCATION SKETCH

See Sample Location Plan

NOTES

Sample Name: IA03_071919

Langan Engineering, Environmental, Surveying, Landscape Architecture, and Geology D.P.C.
21 Penn Plaza, 360 West 31st Street, 8th Floor, New York, New York 10001-2727

APPENDIX E

Analytical Laboratory Reports

ANALYTICAL REPORT

Lab Number:	L1931245
Client:	Langan Engineering & Environmental 21 Penn Plaza 360 W. 31st Street, 8th Floor New York, NY 10001-2727
ATTN:	Julia Leung
Phone:	(212) 479-5400
Project Name:	450 JOHNSON AVENUE
Project Number:	170588001
Report Date:	08/01/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001

Lab Number: L1931245
Report Date: 08/01/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1931245-01	DUP01_071619	SOIL	BROOKLYN, NY	07/16/19 00:00	07/16/19
L1931245-02	SB03_14.0-14.5	SOIL	BROOKLYN, NY	07/16/19 09:20	07/16/19
L1931245-03	SB04_11.0-11.5	SOIL	BROOKLYN, NY	07/16/19 11:45	07/16/19
L1931245-04	SB13_8.0-8.5	SOIL	BROOKLYN, NY	07/16/19 13:52	07/16/19

Project Name:	450 JOHNSON AVENUE	**Lab Number:**	L1931245
Project Number:	170588001	**Report Date:**	08/01/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245
Project Number: 170588001 **Report Date:** 08/01/19

Case Narrative (continued)

Report Submission
August 01, 2019: This final report includes the results of all requested analyses.
July 18, 2019: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt
L1931245-01: The Client ID was specified by the client.

Volatile Organics
L1931245-01, -02 and -03: The sample has elevated detection limits due to the dilution required by the elevated concentrations of non-target compounds in the sample.
L1931245-01: The surrogate recoveries are outside the acceptance criteria for toluene-d8 (136%) and 4-bromofluorobenzene (254%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.
L1931245-02: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (133%); however, the sample was not re-analyzed due to coelution with an obvious interference. A copy of the chromatogram is included as an attachment to this report.

Total Metals
L1931245-01, -02, -03 and -04: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by matrix interferences encountered during analysis.
The WG1260848-3 MS recovery, performed on L1931245-01, is outside the acceptance criteria for mercury (171%). A post digestion spike was performed and was within acceptance criteria.
The WG1260871-3 MS recoveries for aluminum (379%), iron (0%) and manganese (161%), performed on L1931245-01, do not apply because the sample concentrations are greater than four times the spike amounts

Project Name:	450 JOHNSON AVENUE	**Lab Number:**	L1931245
Project Number:	170588001	**Report Date:**	08/01/19

Case Narrative (continued)

added.

The WG1260871-3 MS recoveries, performed on L1931245-01, are outside the acceptance criteria for cadmium (56%), chromium (46%), nickel (72%) and thallium (70%). A post digestion spike was performed and yielded unacceptable recoveries for cadmium (64%), chromium (74%), nickel (79%) and thallium (79%). The serial dilution recovery was not applicable; therefore, this element fails the matrix test and the result reported in the native sample should be considered estimated.

The WG1260871-3 MS recovery, performed on L1931245-01, is outside the acceptance criteria for potassium (73%). A post digestion spike was performed and was within acceptance criteria.

The WG1260871-3 MS recovery, performed on L1931245-01, is outside the acceptance criteria for magnesium (0%). A post digestion spike was performed and yielded an unacceptable recovery of 52%. The serial dilution recovery was acceptable; therefore, the matrix test passed for the sample matrix.

The WG1260871-4 Laboratory Duplicate RPDs for chromium (24%), lead (27%), magnesium (67%), manganese (42%) and potassium (35%), performed on L1931245-01, are outside the acceptance criteria. The elevated RPDs have been attributed to the non-homogeneous nature of the native sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Melissa Sturgis Melissa Sturgis

Title: Technical Director/Representative Date: 08/01/19

ORGANICS

VOLATILES

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-01 D
Client ID: DUP01_071619
Sample Location: BROOKLYN, NY

Date Collected: 07/16/19 00:00
Date Received: 07/16/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/17/19 07:16
Analyst: MV
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methylene chloride	ND		ug/kg	430	200	2
1,1-Dichloroethane	ND		ug/kg	86	12.	2
Chloroform	ND		ug/kg	130	12.	2
Carbon tetrachloride	ND		ug/kg	86	20.	2
1,2-Dichloropropane	ND		ug/kg	86	11.	2
Dibromochloromethane	ND		ug/kg	86	12.	2
1,1,2-Trichloroethane	ND		ug/kg	86	23.	2
Tetrachloroethene	ND		ug/kg	43	17.	2
Chlorobenzene	ND		ug/kg	43	11.	2
Trichlorofluoromethane	ND		ug/kg	340	60.	2
1,2-Dichloroethane	ND		ug/kg	86	22.	2
1,1,1-Trichloroethane	ND		ug/kg	43	14.	2
Bromodichloromethane	ND		ug/kg	43	9.3	2
trans-1,3-Dichloropropene	ND		ug/kg	86	23.	2
cis-1,3-Dichloropropene	ND		ug/kg	43	14.	2
1,3-Dichloropropene, Total	ND		ug/kg	43	14.	2
1,1-Dichloropropene	ND		ug/kg	43	14.	2
Bromoform	ND		ug/kg	340	21.	2
1,1,2,2-Tetrachloroethane	ND		ug/kg	43	14.	2
Benzene	ND		ug/kg	43	14.	2
Toluene	ND		ug/kg	86	46.	2
Ethylbenzene	ND		ug/kg	86	12.	2
Chloromethane	ND		ug/kg	340	80.	2
Bromomethane	ND		ug/kg	170	50.	2
Vinyl chloride	ND		ug/kg	86	29.	2
Chloroethane	ND		ug/kg	170	39.	2
1,1-Dichloroethene	ND		ug/kg	86	20.	2
trans-1,2-Dichloroethene	ND		ug/kg	130	12.	2

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-01 D Date Collected: 07/16/19 00:00
Client ID: DUP01_071619 Date Received: 07/16/19
Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Trichloroethene	ND		ug/kg	43	12.	2
1,2-Dichlorobenzene	ND		ug/kg	170	12.	2
1,3-Dichlorobenzene	ND		ug/kg	170	13.	2
1,4-Dichlorobenzene	ND		ug/kg	170	15.	2
Methyl tert butyl ether	ND		ug/kg	170	17.	2
p/m-Xylene	ND		ug/kg	170	48.	2
o-Xylene	ND		ug/kg	86	25.	2
Xylenes, Total	ND		ug/kg	86	25.	2
cis-1,2-Dichloroethene	ND		ug/kg	86	15.	2
1,2-Dichloroethene, Total	ND		ug/kg	86	12.	2
Dibromomethane	ND		ug/kg	170	20.	2
Styrene	ND		ug/kg	86	17.	2
Dichlorodifluoromethane	ND		ug/kg	860	78.	2
Acetone	ND		ug/kg	860	410	2
Carbon disulfide	ND		ug/kg	860	390	2
2-Butanone	ND		ug/kg	860	190	2
Vinyl acetate	ND		ug/kg	860	180	2
4-Methyl-2-pentanone	ND		ug/kg	860	110	2
1,2,3-Trichloropropane	ND		ug/kg	170	11.	2
2-Hexanone	ND		ug/kg	860	100	2
Bromochloromethane	ND		ug/kg	170	18.	2
2,2-Dichloropropane	ND		ug/kg	170	17.	2
1,2-Dibromoethane	ND		ug/kg	86	24.	2
1,3-Dichloropropane	ND		ug/kg	170	14.	2
1,1,1,2-Tetrachloroethane	ND		ug/kg	43	11.	2
Bromobenzene	ND		ug/kg	170	12.	2
n-Butylbenzene	850		ug/kg	86	14.	2
sec-Butylbenzene	1400		ug/kg	86	12.	2
tert-Butylbenzene	220		ug/kg	170	10.	2
o-Chlorotoluene	ND		ug/kg	170	16.	2
p-Chlorotoluene	ND		ug/kg	170	9.2	2
1,2-Dibromo-3-chloropropane	ND		ug/kg	260	86.	2
Hexachlorobutadiene	ND		ug/kg	340	14.	2
Isopropylbenzene	210		ug/kg	86	9.3	2
p-Isopropyltoluene	ND		ug/kg	86	9.3	2
Naphthalene	210	J	ug/kg	340	56.	2
Acrylonitrile	ND		ug/kg	340	98.	2

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-01 D Date Collected: 07/16/19 00:00
Client ID: DUP01_071619 Date Received: 07/16/19
Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
n-Propylbenzene	240		ug/kg	86	15.	2
1,2,3-Trichlorobenzene	ND		ug/kg	170	28.	2
1,2,4-Trichlorobenzene	ND		ug/kg	170	23.	2
1,3,5-Trimethylbenzene	ND		ug/kg	170	16.	2
1,2,4-Trimethylbenzene	ND		ug/kg	170	29.	2
1,4-Dioxane	ND		ug/kg	6800	3000	2
p-Diethylbenzene	980		ug/kg	170	15.	2
p-Ethyltoluene	ND		ug/kg	170	33.	2
1,2,4,5-Tetramethylbenzene	2400		ug/kg	170	16.	2
Ethyl ether	ND		ug/kg	170	29.	2
trans-1,4-Dichloro-2-butene	ND		ug/kg	430	120	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	**136**	Q	70-130
4-Bromofluorobenzene	**254**	Q	70-130
Dibromofluoromethane	92		70-130

Project Name: 450 JOHNSON AVENUE
Lab Number: L1931245
Project Number: 170588001
Report Date: 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-02 D
Client ID: SB03_14.0-14.5
Sample Location: BROOKLYN, NY

Date Collected: 07/16/19 09:20
Date Received: 07/16/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/17/19 07:41
Analyst: MV
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methylene chloride	ND		ug/kg	2800	1300	10
1,1-Dichloroethane	ND		ug/kg	550	80.	10
Chloroform	ND		ug/kg	830	78.	10
Carbon tetrachloride	ND		ug/kg	550	130	10
1,2-Dichloropropane	ND		ug/kg	550	69.	10
Dibromochloromethane	ND		ug/kg	550	78.	10
1,1,2-Trichloroethane	ND		ug/kg	550	150	10
Tetrachloroethene	ND		ug/kg	280	110	10
Chlorobenzene	ND		ug/kg	280	70.	10
Trichlorofluoromethane	ND		ug/kg	2200	380	10
1,2-Dichloroethane	ND		ug/kg	550	140	10
1,1,1-Trichloroethane	ND		ug/kg	280	92.	10
Bromodichloromethane	ND		ug/kg	280	60.	10
trans-1,3-Dichloropropene	ND		ug/kg	550	150	10
cis-1,3-Dichloropropene	ND		ug/kg	280	88.	10
1,3-Dichloropropene, Total	ND		ug/kg	280	88.	10
1,1-Dichloropropene	ND		ug/kg	280	88.	10
Bromoform	ND		ug/kg	2200	140	10
1,1,2,2-Tetrachloroethane	ND		ug/kg	280	92.	10
Benzene	ND		ug/kg	280	92.	10
Toluene	ND		ug/kg	550	300	10
Ethylbenzene	ND		ug/kg	550	78.	10
Chloromethane	ND		ug/kg	2200	520	10
Bromomethane	ND		ug/kg	1100	320	10
Vinyl chloride	ND		ug/kg	550	180	10
Chloroethane	ND		ug/kg	1100	250	10
1,1-Dichloroethene	ND		ug/kg	550	130	10
trans-1,2-Dichloroethene	ND		ug/kg	830	76.	10

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-02 D Date Collected: 07/16/19 09:20
Client ID: SB03_14.0-14.5 Date Received: 07/16/19
Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Trichloroethene	ND		ug/kg	280	76.	10
1,2-Dichlorobenzene	ND		ug/kg	1100	80.	10
1,3-Dichlorobenzene	ND		ug/kg	1100	82.	10
1,4-Dichlorobenzene	ND		ug/kg	1100	95.	10
Methyl tert butyl ether	ND		ug/kg	1100	110	10
p/m-Xylene	ND		ug/kg	1100	310	10
o-Xylene	ND		ug/kg	550	160	10
Xylenes, Total	ND		ug/kg	550	160	10
cis-1,2-Dichloroethene	ND		ug/kg	550	97.	10
1,2-Dichloroethene, Total	ND		ug/kg	550	76.	10
Dibromomethane	ND		ug/kg	1100	130	10
Styrene	ND		ug/kg	550	110	10
Dichlorodifluoromethane	ND		ug/kg	5500	510	10
Acetone	ND		ug/kg	5500	2700	10
Carbon disulfide	ND		ug/kg	5500	2500	10
2-Butanone	ND		ug/kg	5500	1200	10
Vinyl acetate	ND		ug/kg	5500	1200	10
4-Methyl-2-pentanone	ND		ug/kg	5500	710	10
1,2,3-Trichloropropane	ND		ug/kg	1100	70.	10
2-Hexanone	ND		ug/kg	5500	650	10
Bromochloromethane	ND		ug/kg	1100	110	10
2,2-Dichloropropane	ND		ug/kg	1100	110	10
1,2-Dibromoethane	ND		ug/kg	550	150	10
1,3-Dichloropropane	ND		ug/kg	1100	92.	10
1,1,1,2-Tetrachloroethane	ND		ug/kg	280	73.	10
Bromobenzene	ND		ug/kg	1100	80.	10
n-Butylbenzene	1000		ug/kg	550	92.	10
sec-Butylbenzene	1600		ug/kg	550	81.	10
tert-Butylbenzene	260	J	ug/kg	1100	65.	10
o-Chlorotoluene	ND		ug/kg	1100	100	10
p-Chlorotoluene	ND		ug/kg	1100	60.	10
1,2-Dibromo-3-chloropropane	ND		ug/kg	1700	550	10
Hexachlorobutadiene	ND		ug/kg	2200	94.	10
Isopropylbenzene	270	J	ug/kg	550	60.	10
p-Isopropyltoluene	ND		ug/kg	550	60.	10
Naphthalene	ND		ug/kg	2200	360	10
Acrylonitrile	ND		ug/kg	2200	640	10

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-02 D Date Collected: 07/16/19 09:20
Client ID: SB03_14.0-14.5 Date Received: 07/16/19
Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
n-Propylbenzene	310	J	ug/kg	550	95.	10
1,2,3-Trichlorobenzene	ND		ug/kg	1100	180	10
1,2,4-Trichlorobenzene	ND		ug/kg	1100	150	10
1,3,5-Trimethylbenzene	ND		ug/kg	1100	110	10
1,2,4-Trimethylbenzene	ND		ug/kg	1100	180	10
1,4-Dioxane	ND		ug/kg	44000	19000	10
p-Diethylbenzene	1200		ug/kg	1100	98.	10
p-Ethyltoluene	ND		ug/kg	1100	210	10
1,2,4,5-Tetramethylbenzene	2900		ug/kg	1100	100	10
Ethyl ether	ND		ug/kg	1100	190	10
trans-1,4-Dichloro-2-butene	ND		ug/kg	2800	790	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	112		70-130
4-Bromofluorobenzene	**133**	Q	70-130
Dibromofluoromethane	92		70-130

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-03 D
Client ID: SB04_11.0-11.5
Sample Location: BROOKLYN, NY

Date Collected: 07/16/19 11:45
Date Received: 07/16/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/17/19 08:07
Analyst: MV
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methylene chloride	ND		ug/kg	510	230	2
1,1-Dichloroethane	ND		ug/kg	100	15.	2
Chloroform	ND		ug/kg	150	14.	2
Carbon tetrachloride	ND		ug/kg	100	23.	2
1,2-Dichloropropane	ND		ug/kg	100	13.	2
Dibromochloromethane	ND		ug/kg	100	14.	2
1,1,2-Trichloroethane	ND		ug/kg	100	27.	2
Tetrachloroethene	ND		ug/kg	51	20.	2
Chlorobenzene	ND		ug/kg	51	13.	2
Trichlorofluoromethane	ND		ug/kg	410	71.	2
1,2-Dichloroethane	ND		ug/kg	100	26.	2
1,1,1-Trichloroethane	ND		ug/kg	51	17.	2
Bromodichloromethane	ND		ug/kg	51	11.	2
trans-1,3-Dichloropropene	ND		ug/kg	100	28.	2
cis-1,3-Dichloropropene	ND		ug/kg	51	16.	2
1,3-Dichloropropene, Total	ND		ug/kg	51	16.	2
1,1-Dichloropropene	ND		ug/kg	51	16.	2
Bromoform	ND		ug/kg	410	25.	2
1,1,2,2-Tetrachloroethane	ND		ug/kg	51	17.	2
Benzene	ND		ug/kg	51	17.	2
Toluene	ND		ug/kg	100	55.	2
Ethylbenzene	17	J	ug/kg	100	14.	2
Chloromethane	ND		ug/kg	410	95.	2
Bromomethane	ND		ug/kg	200	59.	2
Vinyl chloride	ND		ug/kg	100	34.	2
Chloroethane	ND		ug/kg	200	46.	2
1,1-Dichloroethene	ND		ug/kg	100	24.	2
trans-1,2-Dichloroethene	ND		ug/kg	150	14.	2

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-03 D Date Collected: 07/16/19 11:45
Client ID: SB04_11.0-11.5 Date Received: 07/16/19
Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Trichloroethene	ND		ug/kg	51	14.	2
1,2-Dichlorobenzene	ND		ug/kg	200	15.	2
1,3-Dichlorobenzene	ND		ug/kg	200	15.	2
1,4-Dichlorobenzene	ND		ug/kg	200	17.	2
Methyl tert butyl ether	ND		ug/kg	200	20.	2
p/m-Xylene	ND		ug/kg	200	57.	2
o-Xylene	44	J	ug/kg	100	30.	2
Xylenes, Total	44	J	ug/kg	100	30.	2
cis-1,2-Dichloroethene	ND		ug/kg	100	18.	2
1,2-Dichloroethene, Total	ND		ug/kg	100	14.	2
Dibromomethane	ND		ug/kg	200	24.	2
Styrene	ND		ug/kg	100	20.	2
Dichlorodifluoromethane	ND		ug/kg	1000	93.	2
Acetone	ND		ug/kg	1000	490	2
Carbon disulfide	ND		ug/kg	1000	460	2
2-Butanone	ND		ug/kg	1000	230	2
Vinyl acetate	ND		ug/kg	1000	220	2
4-Methyl-2-pentanone	ND		ug/kg	1000	130	2
1,2,3-Trichloropropane	ND		ug/kg	200	13.	2
2-Hexanone	ND		ug/kg	1000	120	2
Bromochloromethane	ND		ug/kg	200	21.	2
2,2-Dichloropropane	ND		ug/kg	200	20.	2
1,2-Dibromoethane	ND		ug/kg	100	28.	2
1,3-Dichloropropane	ND		ug/kg	200	17.	2
1,1,1,2-Tetrachloroethane	ND		ug/kg	51	13.	2
Bromobenzene	ND		ug/kg	200	15.	2
n-Butylbenzene	5200		ug/kg	100	17.	2
sec-Butylbenzene	4700		ug/kg	100	15.	2
tert-Butylbenzene	210		ug/kg	200	12.	2
o-Chlorotoluene	ND		ug/kg	200	19.	2
p-Chlorotoluene	ND		ug/kg	200	11.	2
1,2-Dibromo-3-chloropropane	ND		ug/kg	300	100	2
Hexachlorobutadiene	ND		ug/kg	410	17.	2
Isopropylbenzene	3200		ug/kg	100	11.	2
p-Isopropyltoluene	ND		ug/kg	100	11.	2
Naphthalene	720		ug/kg	410	66.	2
Acrylonitrile	ND		ug/kg	410	120	2

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-03 D Date Collected: 07/16/19 11:45
Client ID: SB04_11.0-11.5 Date Received: 07/16/19
Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
n-Propylbenzene	6700		ug/kg	100	17.	2
1,2,3-Trichlorobenzene	ND		ug/kg	200	33.	2
1,2,4-Trichlorobenzene	ND		ug/kg	200	28.	2
1,3,5-Trimethylbenzene	ND		ug/kg	200	20.	2
1,2,4-Trimethylbenzene	ND		ug/kg	200	34.	2
1,4-Dioxane	ND		ug/kg	8200	3600	2
p-Diethylbenzene	3000		ug/kg	200	18.	2
p-Ethyltoluene	ND		ug/kg	200	39.	2
1,2,4,5-Tetramethylbenzene	11000		ug/kg	200	19.	2
Ethyl ether	ND		ug/kg	200	35.	2
trans-1,4-Dichloro-2-butene	ND		ug/kg	510	140	2

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	112		70-130
4-Bromofluorobenzene	129		70-130
Dibromofluoromethane	91		70-130

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-04
Client ID: SB13_8.0-8.5
Sample Location: BROOKLYN, NY

Date Collected: 07/16/19 13:52
Date Received: 07/16/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/17/19 08:32
Analyst: MV
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	7.2	3.3	1
1,1-Dichloroethane	ND		ug/kg	1.4	0.21	1
Chloroform	ND		ug/kg	2.1	0.20	1
Carbon tetrachloride	ND		ug/kg	1.4	0.33	1
1,2-Dichloropropane	ND		ug/kg	1.4	0.18	1
Dibromochloromethane	ND		ug/kg	1.4	0.20	1
1,1,2-Trichloroethane	ND		ug/kg	1.4	0.38	1
Tetrachloroethene	ND		ug/kg	0.72	0.28	1
Chlorobenzene	ND		ug/kg	0.72	0.18	1
Trichlorofluoromethane	ND		ug/kg	5.7	0.99	1
1,2-Dichloroethane	ND		ug/kg	1.4	0.37	1
1,1,1-Trichloroethane	ND		ug/kg	0.72	0.24	1
Bromodichloromethane	ND		ug/kg	0.72	0.16	1
trans-1,3-Dichloropropene	ND		ug/kg	1.4	0.39	1
cis-1,3-Dichloropropene	ND		ug/kg	0.72	0.23	1
1,3-Dichloropropene, Total	ND		ug/kg	0.72	0.23	1
1,1-Dichloropropene	ND		ug/kg	0.72	0.23	1
Bromoform	ND		ug/kg	5.7	0.35	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.72	0.24	1
Benzene	ND		ug/kg	0.72	0.24	1
Toluene	ND		ug/kg	1.4	0.78	1
Ethylbenzene	ND		ug/kg	1.4	0.20	1
Chloromethane	ND		ug/kg	5.7	1.3	1
Bromomethane	ND		ug/kg	2.9	0.83	1
Vinyl chloride	ND		ug/kg	1.4	0.48	1
Chloroethane	ND		ug/kg	2.9	0.65	1
1,1-Dichloroethene	ND		ug/kg	1.4	0.34	1
trans-1,2-Dichloroethene	ND		ug/kg	2.1	0.20	1

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-04 Date Collected: 07/16/19 13:52

Client ID: SB13_8.0-8.5 Date Received: 07/16/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.72	0.20	1
1,2-Dichlorobenzene	ND		ug/kg	2.9	0.21	1
1,3-Dichlorobenzene	ND		ug/kg	2.9	0.21	1
1,4-Dichlorobenzene	ND		ug/kg	2.9	0.24	1
Methyl tert butyl ether	0.35	J	ug/kg	2.9	0.29	1
p/m-Xylene	ND		ug/kg	2.9	0.80	1
o-Xylene	ND		ug/kg	1.4	0.42	1
Xylenes, Total	ND		ug/kg	1.4	0.42	1
cis-1,2-Dichloroethene	ND		ug/kg	1.4	0.25	1
1,2-Dichloroethene, Total	ND		ug/kg	1.4	0.20	1
Dibromomethane	ND		ug/kg	2.9	0.34	1
Styrene	ND		ug/kg	1.4	0.28	1
Dichlorodifluoromethane	ND		ug/kg	14	1.3	1
Acetone	160		ug/kg	14	6.9	1
Carbon disulfide	ND		ug/kg	14	6.5	1
2-Butanone	33		ug/kg	14	3.2	1
Vinyl acetate	ND		ug/kg	14	3.1	1
4-Methyl-2-pentanone	ND		ug/kg	14	1.8	1
1,2,3-Trichloropropane	ND		ug/kg	2.9	0.18	1
2-Hexanone	ND		ug/kg	14	1.7	1
Bromochloromethane	ND		ug/kg	2.9	0.29	1
2,2-Dichloropropane	ND		ug/kg	2.9	0.29	1
1,2-Dibromoethane	ND		ug/kg	1.4	0.40	1
1,3-Dichloropropane	ND		ug/kg	2.9	0.24	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.72	0.19	1
Bromobenzene	ND		ug/kg	2.9	0.21	1
n-Butylbenzene	ND		ug/kg	1.4	0.24	1
sec-Butylbenzene	ND		ug/kg	1.4	0.21	1
tert-Butylbenzene	ND		ug/kg	2.9	0.17	1
o-Chlorotoluene	ND		ug/kg	2.9	0.27	1
p-Chlorotoluene	ND		ug/kg	2.9	0.15	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	4.3	1.4	1
Hexachlorobutadiene	ND		ug/kg	5.7	0.24	1
Isopropylbenzene	ND		ug/kg	1.4	0.16	1
p-Isopropyltoluene	ND		ug/kg	1.4	0.16	1
Naphthalene	ND		ug/kg	5.7	0.93	1
Acrylonitrile	ND		ug/kg	5.7	1.6	1

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-04 Date Collected: 07/16/19 13:52

Client ID: SB13_8.0-8.5 Date Received: 07/16/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.4	0.24	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.9	0.46	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.9	0.39	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.9	0.28	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.9	0.48	1
1,4-Dioxane	ND		ug/kg	110	50.	1
p-Diethylbenzene	ND		ug/kg	2.9	0.25	1
p-Ethyltoluene	ND		ug/kg	2.9	0.55	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.9	0.27	1
Ethyl ether	ND		ug/kg	2.9	0.49	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	7.2	2.0	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	105		70-130
Toluene-d8	115		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	99		70-130

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/17/19 05:59
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-03 Batch: WG1260933-5					
Methylene chloride	ND		ug/kg	250	110
1,1-Dichloroethane	ND		ug/kg	50	7.2
Chloroform	ND		ug/kg	75	7.0
Carbon tetrachloride	ND		ug/kg	50	12.
1,2-Dichloropropane	ND		ug/kg	50	6.2
Dibromochloromethane	ND		ug/kg	50	7.0
1,1,2-Trichloroethane	ND		ug/kg	50	13.
Tetrachloroethene	ND		ug/kg	25	9.8
Chlorobenzene	ND		ug/kg	25	6.4
Trichlorofluoromethane	ND		ug/kg	200	35.
1,2-Dichloroethane	ND		ug/kg	50	13.
1,1,1-Trichloroethane	ND		ug/kg	25	8.4
Bromodichloromethane	ND		ug/kg	25	5.4
trans-1,3-Dichloropropene	ND		ug/kg	50	14.
cis-1,3-Dichloropropene	ND		ug/kg	25	7.9
1,3-Dichloropropene, Total	ND		ug/kg	25	7.9
1,1-Dichloropropene	ND		ug/kg	25	8.0
Bromoform	ND		ug/kg	200	12.
1,1,2,2-Tetrachloroethane	ND		ug/kg	25	8.3
Benzene	ND		ug/kg	25	8.3
Toluene	ND		ug/kg	50	27.
Ethylbenzene	ND		ug/kg	50	7.0
Chloromethane	ND		ug/kg	200	47.
Bromomethane	ND		ug/kg	100	29.
Vinyl chloride	ND		ug/kg	50	17.
Chloroethane	ND		ug/kg	100	23.
1,1-Dichloroethene	ND		ug/kg	50	12.
trans-1,2-Dichloroethene	ND		ug/kg	75	6.8
Trichloroethene	ND		ug/kg	25	6.8

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/17/19 05:59
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-03 Batch: WG1260933-5					
1,2-Dichlorobenzene	ND		ug/kg	100	7.2
1,3-Dichlorobenzene	ND		ug/kg	100	7.4
1,4-Dichlorobenzene	ND		ug/kg	100	8.6
Methyl tert butyl ether	ND		ug/kg	100	10.
p/m-Xylene	ND		ug/kg	100	28.
o-Xylene	ND		ug/kg	50	14.
Xylenes, Total	ND		ug/kg	50	14.
cis-1,2-Dichloroethene	ND		ug/kg	50	8.8
1,2-Dichloroethene, Total	ND		ug/kg	50	6.8
Dibromomethane	ND		ug/kg	100	12.
Styrene	ND		ug/kg	50	9.8
Dichlorodifluoromethane	ND		ug/kg	500	46.
Acetone	ND		ug/kg	500	240
Carbon disulfide	ND		ug/kg	500	230
2-Butanone	ND		ug/kg	500	110
Vinyl acetate	ND		ug/kg	500	110
4-Methyl-2-pentanone	ND		ug/kg	500	64.
1,2,3-Trichloropropane	ND		ug/kg	100	6.4
2-Hexanone	ND		ug/kg	500	59.
Bromochloromethane	ND		ug/kg	100	10.
2,2-Dichloropropane	ND		ug/kg	100	10.
1,2-Dibromoethane	ND		ug/kg	50	14.
1,3-Dichloropropane	ND		ug/kg	100	8.4
1,1,1,2-Tetrachloroethane	ND		ug/kg	25	6.6
Bromobenzene	ND		ug/kg	100	7.2
n-Butylbenzene	ND		ug/kg	50	8.4
sec-Butylbenzene	ND		ug/kg	50	7.3
tert-Butylbenzene	ND		ug/kg	100	5.9
o-Chlorotoluene	ND		ug/kg	100	9.6

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/17/19 05:59
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 01-03 Batch: WG1260933-5					
p-Chlorotoluene	ND		ug/kg	100	5.4
1,2-Dibromo-3-chloropropane	ND		ug/kg	150	50.
Hexachlorobutadiene	ND		ug/kg	200	8.4
Isopropylbenzene	ND		ug/kg	50	5.4
p-Isopropyltoluene	ND		ug/kg	50	5.4
Naphthalene	ND		ug/kg	200	32.
Acrylonitrile	ND		ug/kg	200	58.
n-Propylbenzene	ND		ug/kg	50	8.6
1,2,3-Trichlorobenzene	ND		ug/kg	100	16.
1,2,4-Trichlorobenzene	ND		ug/kg	100	14.
1,3,5-Trimethylbenzene	ND		ug/kg	100	9.6
1,2,4-Trimethylbenzene	ND		ug/kg	100	17.
1,4-Dioxane	ND		ug/kg	4000	1800
p-Diethylbenzene	ND		ug/kg	100	8.8
p-Ethyltoluene	ND		ug/kg	100	19.
1,2,4,5-Tetramethylbenzene	ND		ug/kg	100	9.6
Ethyl ether	ND		ug/kg	100	17.
trans-1,4-Dichloro-2-butene	ND		ug/kg	250	71.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	95		70-130

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/17/19 05:59
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 04 Batch: WG1260940-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	ND		ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
1,2-Dichloropropane	ND		ug/kg	1.0	0.12
Dibromochloromethane	ND		ug/kg	1.0	0.14
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.27
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
Trichlorofluoromethane	ND		ug/kg	4.0	0.70
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Bromodichloromethane	ND		ug/kg	0.50	0.11
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.27
cis-1,3-Dichloropropene	ND		ug/kg	0.50	0.16
1,3-Dichloropropene, Total	ND		ug/kg	0.50	0.16
1,1-Dichloropropene	ND		ug/kg	0.50	0.16
Bromoform	ND		ug/kg	4.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Chloromethane	ND		ug/kg	4.0	0.93
Bromomethane	ND		ug/kg	2.0	0.58
Vinyl chloride	ND		ug/kg	1.0	0.34
Chloroethane	ND		ug/kg	2.0	0.45
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/17/19 05:59
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 04 Batch: WG1260940-5					
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
Xylenes, Total	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
1,2-Dichloroethene, Total	ND		ug/kg	1.0	0.14
Dibromomethane	ND		ug/kg	2.0	0.24
Styrene	ND		ug/kg	1.0	0.20
Dichlorodifluoromethane	ND		ug/kg	10	0.92
Acetone	ND		ug/kg	10	4.8
Carbon disulfide	ND		ug/kg	10	4.6
2-Butanone	ND		ug/kg	10	2.2
Vinyl acetate	ND		ug/kg	10	2.2
4-Methyl-2-pentanone	ND		ug/kg	10	1.3
1,2,3-Trichloropropane	ND		ug/kg	2.0	0.13
2-Hexanone	ND		ug/kg	10	1.2
Bromochloromethane	ND		ug/kg	2.0	0.20
2,2-Dichloropropane	ND		ug/kg	2.0	0.20
1,2-Dibromoethane	ND		ug/kg	1.0	0.28
1,3-Dichloropropane	ND		ug/kg	2.0	0.17
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	0.13
Bromobenzene	ND		ug/kg	2.0	0.14
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
o-Chlorotoluene	ND		ug/kg	2.0	0.19

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/17/19 05:59
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 04 Batch: WG1260940-5					
p-Chlorotoluene	ND		ug/kg	2.0	0.11
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	1.0
Hexachlorobutadiene	ND		ug/kg	4.0	0.17
Isopropylbenzene	ND		ug/kg	1.0	0.11
p-Isopropyltoluene	ND		ug/kg	1.0	0.11
Naphthalene	ND		ug/kg	4.0	0.65
Acrylonitrile	ND		ug/kg	4.0	1.2
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	0.32
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	0.27
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
1,4-Dioxane	ND		ug/kg	80	35.
p-Diethylbenzene	ND		ug/kg	2.0	0.18
p-Ethyltoluene	ND		ug/kg	2.0	0.38
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.0	0.19
Ethyl ether	ND		ug/kg	2.0	0.34
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	1.4

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	95		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001

Lab Number: L1931245
Report Date: 08/01/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-03 Batch: WG1260933-3 WG1260933-4								
Methylene chloride	76		75		70-130	1		30
1,1-Dichloroethane	90		88		70-130	2		30
Chloroform	86		84		70-130	2		30
Carbon tetrachloride	86		85		70-130	1		30
1,2-Dichloropropane	89		89		70-130	0		30
Dibromochloromethane	95		94		70-130	1		30
1,1,2-Trichloroethane	94		93		70-130	1		30
Tetrachloroethene	96		92		70-130	4		30
Chlorobenzene	94		93		70-130	1		30
Trichlorofluoromethane	**67**	Q	**63**	Q	70-139	6		30
1,2-Dichloroethane	88		88		70-130	0		30
1,1,1-Trichloroethane	89		87		70-130	2		30
Bromodichloromethane	86		87		70-130	1		30
trans-1,3-Dichloropropene	97		96		70-130	1		30
cis-1,3-Dichloropropene	88		87		70-130	1		30
1,1-Dichloropropene	89		87		70-130	2		30
Bromoform	88		91		70-130	3		30
1,1,2,2-Tetrachloroethane	99		101		70-130	2		30
Benzene	86		85		70-130	1		30
Toluene	94		91		70-130	3		30
Ethylbenzene	95		92		70-130	3		30
Chloromethane	105		102		52-130	3		30
Bromomethane	59		**56**	Q	57-147	5		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001

Lab Number: L1931245
Report Date: 08/01/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-03 Batch: WG1260933-3 WG1260933-4								
Vinyl chloride	76		72		67-130	5		30
Chloroethane	59		56		50-151	5		30
1,1-Dichloroethene	85		82		65-135	4		30
trans-1,2-Dichloroethene	86		83		70-130	4		30
Trichloroethene	87		86		70-130	1		30
1,2-Dichlorobenzene	95		95		70-130	0		30
1,3-Dichlorobenzene	96		97		70-130	1		30
1,4-Dichlorobenzene	96		96		70-130	0		30
Methyl tert butyl ether	84		85		66-130	1		30
p/m-Xylene	96		94		70-130	2		30
o-Xylene	94		92		70-130	2		30
cis-1,2-Dichloroethene	84		82		70-130	2		30
Dibromomethane	84		85		70-130	1		30
Styrene	93		91		70-130	2		30
Dichlorodifluoromethane	81		78		30-146	4		30
Acetone	124		127		54-140	2		30
Carbon disulfide	82		79		59-130	4		30
2-Butanone	115		112		70-130	3		30
Vinyl acetate	112		112		70-130	0		30
4-Methyl-2-pentanone	103		104		70-130	1		30
1,2,3-Trichloropropane	94		98		68-130	4		30
2-Hexanone	121		122		70-130	1		30
Bromochloromethane	84		84		70-130	0		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001

Lab Number: L1931245
Report Date: 08/01/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-03 Batch: WG1260933-3 WG1260933-4								
2,2-Dichloropropane	87		84		70-130	4		30
1,2-Dibromoethane	96		96		70-130	0		30
1,3-Dichloropropane	95		94		69-130	1		30
1,1,1,2-Tetrachloroethane	95		93		70-130	2		30
Bromobenzene	94		94		70-130	0		30
n-Butylbenzene	102		101		70-130	1		30
sec-Butylbenzene	100		99		70-130	1		30
tert-Butylbenzene	97		97		70-130	0		30
o-Chlorotoluene	96		96		70-130	0		30
p-Chlorotoluene	97		97		70-130	0		30
1,2-Dibromo-3-chloropropane	89		96		68-130	8		30
Hexachlorobutadiene	93		92		67-130	1		30
Isopropylbenzene	99		97		70-130	2		30
p-Isopropyltoluene	100		99		70-130	1		30
Naphthalene	97		101		70-130	4		30
Acrylonitrile	106		109		70-130	3		30
n-Propylbenzene	99		100		70-130	1		30
1,2,3-Trichlorobenzene	97		100		70-130	3		30
1,2,4-Trichlorobenzene	100		101		70-130	1		30
1,3,5-Trimethylbenzene	98		97		70-130	1		30
1,2,4-Trimethylbenzene	97		96		70-130	1		30
1,4-Dioxane	92		95		65-136	3		30
p-Diethylbenzene	99		98		70-130	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001

Lab Number: L1931245
Report Date: 08/01/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 01-03 Batch: WG1260933-3 WG1260933-4								
p-Ethyltoluene	100		100		70-130	0		30
1,2,4,5-Tetramethylbenzene	97		98		70-130	1		30
Ethyl ether	83		82		67-130	1		30
trans-1,4-Dichloro-2-butene	116		116		70-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100		100		70-130
Toluene-d8	106		106		70-130
4-Bromofluorobenzene	100		101		70-130
Dibromofluoromethane	95		97		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001

Lab Number: L1931245
Report Date: 08/01/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 04 Batch: WG1260940-3 WG1260940-4								
Methylene chloride	76		75		70-130	1		30
1,1-Dichloroethane	90		88		70-130	2		30
Chloroform	86		84		70-130	2		30
Carbon tetrachloride	86		85		70-130	1		30
1,2-Dichloropropane	89		89		70-130	0		30
Dibromochloromethane	95		94		70-130	1		30
1,1,2-Trichloroethane	94		93		70-130	1		30
Tetrachloroethene	96		92		70-130	4		30
Chlorobenzene	94		93		70-130	1		30
Trichlorofluoromethane	**67**	Q	**63**	Q	70-139	6		30
1,2-Dichloroethane	88		88		70-130	0		30
1,1,1-Trichloroethane	89		87		70-130	2		30
Bromodichloromethane	86		87		70-130	1		30
trans-1,3-Dichloropropene	97		96		70-130	1		30
cis-1,3-Dichloropropene	88		87		70-130	1		30
1,1-Dichloropropene	89		87		70-130	2		30
Bromoform	88		91		70-130	3		30
1,1,2,2-Tetrachloroethane	99		101		70-130	2		30
Benzene	86		85		70-130	1		30
Toluene	94		91		70-130	3		30
Ethylbenzene	95		92		70-130	3		30
Chloromethane	105		102		52-130	3		30
Bromomethane	59		**56**	Q	57-147	5		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001

Lab Number: L1931245
Report Date: 08/01/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 04 Batch: WG1260940-3 WG1260940-4								
Vinyl chloride	76		72		67-130	5		30
Chloroethane	59		56		50-151	5		30
1,1-Dichloroethene	85		82		65-135	4		30
trans-1,2-Dichloroethene	86		83		70-130	4		30
Trichloroethene	87		86		70-130	1		30
1,2-Dichlorobenzene	95		95		70-130	0		30
1,3-Dichlorobenzene	96		97		70-130	1		30
1,4-Dichlorobenzene	96		96		70-130	0		30
Methyl tert butyl ether	84		85		66-130	1		30
p/m-Xylene	96		94		70-130	2		30
o-Xylene	94		92		70-130	2		30
cis-1,2-Dichloroethene	84		82		70-130	2		30
Dibromomethane	84		85		70-130	1		30
Styrene	93		91		70-130	2		30
Dichlorodifluoromethane	81		78		30-146	4		30
Acetone	124		127		54-140	2		30
Carbon disulfide	82		79		59-130	4		30
2-Butanone	115		112		70-130	3		30
Vinyl acetate	112		112		70-130	0		30
4-Methyl-2-pentanone	103		104		70-130	1		30
1,2,3-Trichloropropane	94		98		68-130	4		30
2-Hexanone	121		122		70-130	1		30
Bromochloromethane	84		84		70-130	0		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001

Lab Number: L1931245
Report Date: 08/01/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 04 Batch: WG1260940-3 WG1260940-4								
2,2-Dichloropropane	87		84		70-130	4		30
1,2-Dibromoethane	96		96		70-130	0		30
1,3-Dichloropropane	95		94		69-130	1		30
1,1,1,2-Tetrachloroethane	95		93		70-130	2		30
Bromobenzene	94		94		70-130	0		30
n-Butylbenzene	102		101		70-130	1		30
sec-Butylbenzene	100		99		70-130	1		30
tert-Butylbenzene	97		97		70-130	0		30
o-Chlorotoluene	96		96		70-130	0		30
p-Chlorotoluene	97		97		70-130	0		30
1,2-Dibromo-3-chloropropane	89		96		68-130	8		30
Hexachlorobutadiene	93		92		67-130	1		30
Isopropylbenzene	99		97		70-130	2		30
p-Isopropyltoluene	100		99		70-130	1		30
Naphthalene	97		101		70-130	4		30
Acrylonitrile	106		109		70-130	3		30
n-Propylbenzene	99		100		70-130	1		30
1,2,3-Trichlorobenzene	97		100		70-130	3		30
1,2,4-Trichlorobenzene	100		101		70-130	1		30
1,3,5-Trimethylbenzene	98		97		70-130	1		30
1,2,4-Trimethylbenzene	97		96		70-130	1		30
1,4-Dioxane	92		95		65-136	3		30
p-Diethylbenzene	99		98		70-130	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001

Lab Number: L1931245
Report Date: 08/01/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 04 Batch: WG1260940-3 WG1260940-4								
p-Ethyltoluene	100		100		70-130	0		30
1,2,4,5-Tetramethylbenzene	97		98		70-130	1		30
Ethyl ether	83		82		67-130	1		30
trans-1,4-Dichloro-2-butene	116		116		70-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100		100		70-130
Toluene-d8	106		106		70-130
4-Bromofluorobenzene	100		101		70-130
Dibromofluoromethane	95		97		70-130

SEMIVOLATILES

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001
Lab Number: L1931245
Report Date: 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-01
Client ID: DUP01_071619
Sample Location: BROOKLYN, NY

Date Collected: 07/16/19 00:00
Date Received: 07/16/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/17/19 20:04
Analyst: CB
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 07/16/19 23:54

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	120	J	ug/kg	140	18.	1
1,2,4-Trichlorobenzene	ND		ug/kg	170	20.	1
Hexachlorobenzene	ND		ug/kg	100	20.	1
Bis(2-chloroethyl)ether	ND		ug/kg	160	24.	1
2-Chloronaphthalene	ND		ug/kg	170	17.	1
1,2-Dichlorobenzene	ND		ug/kg	170	31.	1
1,3-Dichlorobenzene	ND		ug/kg	170	30.	1
1,4-Dichlorobenzene	ND		ug/kg	170	30.	1
3,3'-Dichlorobenzidine	ND		ug/kg	170	46.	1
2,4-Dinitrotoluene	72	J	ug/kg	170	35.	1
2,6-Dinitrotoluene	ND		ug/kg	170	30.	1
Fluoranthene	78	J	ug/kg	100	20.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	170	19.	1
4-Bromophenyl phenyl ether	ND		ug/kg	170	27.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	210	30.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	190	17.	1
Hexachlorobutadiene	ND		ug/kg	170	26.	1
Hexachlorocyclopentadiene	ND		ug/kg	500	160	1
Hexachloroethane	ND		ug/kg	140	28.	1
Isophorone	ND		ug/kg	160	23.	1
Naphthalene	76	J	ug/kg	170	21.	1
Nitrobenzene	ND		ug/kg	160	26.	1
NDPA/DPA	ND		ug/kg	140	20.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	170	27.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	170	60.	1
Butyl benzyl phthalate	ND		ug/kg	170	44.	1
Di-n-butylphthalate	ND		ug/kg	170	33.	1
Di-n-octylphthalate	ND		ug/kg	170	59.	1

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-01 Date Collected: 07/16/19 00:00
Client ID: DUP01_071619 Date Received: 07/16/19
Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	170	16.	1
Dimethyl phthalate	ND		ug/kg	170	37.	1
Benzo(a)anthracene	41	J	ug/kg	100	20.	1
Benzo(a)pyrene	ND		ug/kg	140	43.	1
Benzo(b)fluoranthene	41	J	ug/kg	100	29.	1
Benzo(k)fluoranthene	ND		ug/kg	100	28.	1
Chrysene	45	J	ug/kg	100	18.	1
Acenaphthylene	ND		ug/kg	140	27.	1
Anthracene	63	J	ug/kg	100	34.	1
Benzo(ghi)perylene	21	J	ug/kg	140	20.	1
Fluorene	260		ug/kg	170	17.	1
Phenanthrene	520		ug/kg	100	21.	1
Dibenzo(a,h)anthracene	ND		ug/kg	100	20.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	140	24.	1
Pyrene	150		ug/kg	100	17.	1
Biphenyl	ND		ug/kg	400	40.	1
4-Chloroaniline	ND		ug/kg	170	32.	1
2-Nitroaniline	ND		ug/kg	170	34.	1
3-Nitroaniline	ND		ug/kg	170	33.	1
4-Nitroaniline	ND		ug/kg	170	72.	1
Dibenzofuran	95	J	ug/kg	170	16.	1
2-Methylnaphthalene	ND		ug/kg	210	21.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	170	18.	1
Acetophenone	ND		ug/kg	170	22.	1
2,4,6-Trichlorophenol	ND		ug/kg	100	33.	1
p-Chloro-m-cresol	ND		ug/kg	170	26.	1
2-Chlorophenol	ND		ug/kg	170	21.	1
2,4-Dichlorophenol	ND		ug/kg	160	28.	1
2,4-Dimethylphenol	ND		ug/kg	170	58.	1
2-Nitrophenol	ND		ug/kg	380	66.	1
4-Nitrophenol	ND		ug/kg	240	71.	1
2,4-Dinitrophenol	ND		ug/kg	840	81.	1
4,6-Dinitro-o-cresol	ND		ug/kg	450	84.	1
Pentachlorophenol	ND		ug/kg	140	38.	1
Phenol	ND		ug/kg	170	26.	1
2-Methylphenol	ND		ug/kg	170	27.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	250	27.	1

Project Name: 450 JOHNSON AVENUE
Lab Number: L1931245
Project Number: 170588001
Report Date: 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-01
Client ID: DUP01_071619
Sample Location: BROOKLYN, NY
Date Collected: 07/16/19 00:00
Date Received: 07/16/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	170	33.	1
Benzoic Acid	ND		ug/kg	560	180	1
Benzyl Alcohol	ND		ug/kg	170	53.	1
Carbazole	ND		ug/kg	170	17.	1
1,4-Dioxane	ND		ug/kg	26	8.0	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	60		25-120
Phenol-d6	59		10-120
Nitrobenzene-d5	67		23-120
2-Fluorobiphenyl	55		30-120
2,4,6-Tribromophenol	56		10-136
4-Terphenyl-d14	52		18-120

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001
Lab Number: L1931245
Report Date: 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-02
Client ID: SB03_14.0-14.5
Sample Location: BROOKLYN, NY

Date Collected: 07/16/19 09:20
Date Received: 07/16/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/17/19 23:25
Analyst: CB
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 07/16/19 23:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	63	J	ug/kg	150	20.	1
1,2,4-Trichlorobenzene	ND		ug/kg	190	22.	1
Hexachlorobenzene	ND		ug/kg	110	21.	1
Bis(2-chloroethyl)ether	ND		ug/kg	170	26.	1
2-Chloronaphthalene	ND		ug/kg	190	19.	1
1,2-Dichlorobenzene	ND		ug/kg	190	34.	1
1,3-Dichlorobenzene	ND		ug/kg	190	33.	1
1,4-Dichlorobenzene	ND		ug/kg	190	33.	1
3,3'-Dichlorobenzidine	ND		ug/kg	190	50.	1
2,4-Dinitrotoluene	ND		ug/kg	190	38.	1
2,6-Dinitrotoluene	ND		ug/kg	190	32.	1
Fluoranthene	770		ug/kg	110	22.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	190	20.	1
4-Bromophenyl phenyl ether	ND		ug/kg	190	29.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	230	32.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	200	19.	1
Hexachlorobutadiene	ND		ug/kg	190	28.	1
Hexachlorocyclopentadiene	ND		ug/kg	540	170	1
Hexachloroethane	ND		ug/kg	150	31.	1
Isophorone	ND		ug/kg	170	25.	1
Naphthalene	150	J	ug/kg	190	23.	1
Nitrobenzene	ND		ug/kg	170	28.	1
NDPA/DPA	ND		ug/kg	150	22.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	190	29.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	190	66.	1
Butyl benzyl phthalate	ND		ug/kg	190	48.	1
Di-n-butylphthalate	ND		ug/kg	190	36.	1
Di-n-octylphthalate	ND		ug/kg	190	64.	1

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-02 Date Collected: 07/16/19 09:20

Client ID: SB03_14.0-14.5 Date Received: 07/16/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	190	18.	1
Dimethyl phthalate	ND		ug/kg	190	40.	1
Benzo(a)anthracene	400		ug/kg	110	21.	1
Benzo(a)pyrene	390		ug/kg	150	46.	1
Benzo(b)fluoranthene	490		ug/kg	110	32.	1
Benzo(k)fluoranthene	160		ug/kg	110	30.	1
Chrysene	370		ug/kg	110	20.	1
Acenaphthylene	49	J	ug/kg	150	29.	1
Anthracene	150		ug/kg	110	37.	1
Benzo(ghi)perylene	220		ug/kg	150	22.	1
Fluorene	86	J	ug/kg	190	18.	1
Phenanthrene	540		ug/kg	110	23.	1
Dibenzo(a,h)anthracene	54	J	ug/kg	110	22.	1
Indeno(1,2,3-cd)pyrene	240		ug/kg	150	26.	1
Pyrene	660		ug/kg	110	19.	1
Biphenyl	ND		ug/kg	430	44.	1
4-Chloroaniline	ND		ug/kg	190	34.	1
2-Nitroaniline	ND		ug/kg	190	37.	1
3-Nitroaniline	ND		ug/kg	190	36.	1
4-Nitroaniline	ND		ug/kg	190	78.	1
Dibenzofuran	68	J	ug/kg	190	18.	1
2-Methylnaphthalene	43	J	ug/kg	230	23.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	190	20.	1
Acetophenone	ND		ug/kg	190	24.	1
2,4,6-Trichlorophenol	ND		ug/kg	110	36.	1
p-Chloro-m-cresol	ND		ug/kg	190	28.	1
2-Chlorophenol	ND		ug/kg	190	22.	1
2,4-Dichlorophenol	ND		ug/kg	170	30.	1
2,4-Dimethylphenol	ND		ug/kg	190	63.	1
2-Nitrophenol	ND		ug/kg	410	71.	1
4-Nitrophenol	ND		ug/kg	260	77.	1
2,4-Dinitrophenol	ND		ug/kg	910	88.	1
4,6-Dinitro-o-cresol	ND		ug/kg	490	91.	1
Pentachlorophenol	ND		ug/kg	150	42.	1
Phenol	150	J	ug/kg	190	29.	1
2-Methylphenol	ND		ug/kg	190	29.	1
3-Methylphenol/4-Methylphenol	1100		ug/kg	270	30.	1

Project Name: 450 JOHNSON AVENUE
Lab Number: L1931245
Project Number: 170588001
Report Date: 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-02
Client ID: SB03_14.0-14.5
Sample Location: BROOKLYN, NY
Date Collected: 07/16/19 09:20
Date Received: 07/16/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	190	36.	1
Benzoic Acid	ND		ug/kg	620	190	1
Benzyl Alcohol	ND		ug/kg	190	58.	1
Carbazole	59	J	ug/kg	190	18.	1
1,4-Dioxane	ND		ug/kg	28	8.7	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	67		25-120
Phenol-d6	65		10-120
Nitrobenzene-d5	65		23-120
2-Fluorobiphenyl	62		30-120
2,4,6-Tribromophenol	72		10-136
4-Terphenyl-d14	50		18-120

Project Name: 450 JOHNSON AVENUE
Lab Number: L1931245
Project Number: 170588001
Report Date: 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-03
Client ID: SB04_11.0-11.5
Sample Location: BROOKLYN, NY

Date Collected: 07/16/19 11:45
Date Received: 07/16/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/17/19 23:00
Analyst: CB
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 07/16/19 23:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	670		ug/kg	150	20.	1
1,2,4-Trichlorobenzene	ND		ug/kg	190	22.	1
Hexachlorobenzene	ND		ug/kg	110	21.	1
Bis(2-chloroethyl)ether	ND		ug/kg	170	26.	1
2-Chloronaphthalene	ND		ug/kg	190	19.	1
1,2-Dichlorobenzene	ND		ug/kg	190	34.	1
1,3-Dichlorobenzene	ND		ug/kg	190	32.	1
1,4-Dichlorobenzene	ND		ug/kg	190	33.	1
3,3'-Dichlorobenzidine	ND		ug/kg	190	50.	1
2,4-Dinitrotoluene	ND		ug/kg	190	38.	1
2,6-Dinitrotoluene	ND		ug/kg	190	32.	1
Fluoranthene	ND		ug/kg	110	22.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	190	20.	1
4-Bromophenyl phenyl ether	ND		ug/kg	190	29.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	230	32.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	200	19.	1
Hexachlorobutadiene	ND		ug/kg	190	28.	1
Hexachlorocyclopentadiene	ND		ug/kg	540	170	1
Hexachloroethane	ND		ug/kg	150	30.	1
Isophorone	ND		ug/kg	170	24.	1
Naphthalene	340		ug/kg	190	23.	1
Nitrobenzene	ND		ug/kg	170	28.	1
NDPA/DPA	ND		ug/kg	150	21.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	190	29.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	190	65.	1
Butyl benzyl phthalate	ND		ug/kg	190	48.	1
Di-n-butylphthalate	ND		ug/kg	190	36.	1
Di-n-octylphthalate	ND		ug/kg	190	64.	1

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-03 Date Collected: 07/16/19 11:45

Client ID: SB04_11.0-11.5 Date Received: 07/16/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	190	17.	1
Dimethyl phthalate	ND		ug/kg	190	40.	1
Benzo(a)anthracene	ND		ug/kg	110	21.	1
Benzo(a)pyrene	ND		ug/kg	150	46.	1
Benzo(b)fluoranthene	ND		ug/kg	110	32.	1
Benzo(k)fluoranthene	ND		ug/kg	110	30.	1
Chrysene	37	J	ug/kg	110	20.	1
Acenaphthylene	ND		ug/kg	150	29.	1
Anthracene	290		ug/kg	110	37.	1
Benzo(ghi)perylene	ND		ug/kg	150	22.	1
Fluorene	1400		ug/kg	190	18.	1
Phenanthrene	2800		ug/kg	110	23.	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	22.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	26.	1
Pyrene	360		ug/kg	110	19.	1
Biphenyl	ND		ug/kg	430	44.	1
4-Chloroaniline	ND		ug/kg	190	34.	1
2-Nitroaniline	ND		ug/kg	190	36.	1
3-Nitroaniline	ND		ug/kg	190	36.	1
4-Nitroaniline	ND		ug/kg	190	78.	1
Dibenzofuran	530		ug/kg	190	18.	1
2-Methylnaphthalene	ND		ug/kg	230	23.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	190	20.	1
Acetophenone	ND		ug/kg	190	23.	1
2,4,6-Trichlorophenol	ND		ug/kg	110	36.	1
p-Chloro-m-cresol	ND		ug/kg	190	28.	1
2-Chlorophenol	ND		ug/kg	190	22.	1
2,4-Dichlorophenol	ND		ug/kg	170	30.	1
2,4-Dimethylphenol	ND		ug/kg	190	62.	1
2-Nitrophenol	ND		ug/kg	410	71.	1
4-Nitrophenol	ND		ug/kg	260	77.	1
2,4-Dinitrophenol	ND		ug/kg	900	88.	1
4,6-Dinitro-o-cresol	ND		ug/kg	490	90.	1
Pentachlorophenol	ND		ug/kg	150	42.	1
Phenol	ND		ug/kg	190	28.	1
2-Methylphenol	ND		ug/kg	190	29.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	270	30.	1

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-03 Date Collected: 07/16/19 11:45

Client ID: SB04_11.0-11.5 Date Received: 07/16/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	190	36.	1
Benzoic Acid	ND		ug/kg	610	190	1
Benzyl Alcohol	ND		ug/kg	190	58.	1
Carbazole	ND		ug/kg	190	18.	1
1,4-Dioxane	ND		ug/kg	28	8.7	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	67		25-120
Phenol-d6	67		10-120
Nitrobenzene-d5	96		23-120
2-Fluorobiphenyl	64		30-120
2,4,6-Tribromophenol	58		10-136
4-Terphenyl-d14	56		18-120

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001
Lab Number: L1931245
Report Date: 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-04
Client ID: SB13_8.0-8.5
Sample Location: BROOKLYN, NY

Date Collected: 07/16/19 13:52
Date Received: 07/16/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/17/19 22:35
Analyst: CB
Percent Solids: 67%

Extraction Method: EPA 3546
Extraction Date: 07/16/19 23:55

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	200	25.	1
1,2,4-Trichlorobenzene	ND		ug/kg	240	28.	1
Hexachlorobenzene	ND		ug/kg	150	27.	1
Bis(2-chloroethyl)ether	ND		ug/kg	220	33.	1
2-Chloronaphthalene	ND		ug/kg	240	24.	1
1,2-Dichlorobenzene	ND		ug/kg	240	44.	1
1,3-Dichlorobenzene	ND		ug/kg	240	42.	1
1,4-Dichlorobenzene	ND		ug/kg	240	43.	1
3,3'-Dichlorobenzidine	ND		ug/kg	240	65.	1
2,4-Dinitrotoluene	ND		ug/kg	240	49.	1
2,6-Dinitrotoluene	ND		ug/kg	240	42.	1
Fluoranthene	49	J	ug/kg	150	28.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	240	26.	1
4-Bromophenyl phenyl ether	ND		ug/kg	240	37.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	290	42.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	260	24.	1
Hexachlorobutadiene	ND		ug/kg	240	36.	1
Hexachlorocyclopentadiene	ND		ug/kg	700	220	1
Hexachloroethane	ND		ug/kg	200	40.	1
Isophorone	ND		ug/kg	220	32.	1
Naphthalene	120	J	ug/kg	240	30.	1
Nitrobenzene	ND		ug/kg	220	36.	1
NDPA/DPA	ND		ug/kg	200	28.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	240	38.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	240	84.	1
Butyl benzyl phthalate	ND		ug/kg	240	62.	1
Di-n-butylphthalate	ND		ug/kg	240	46.	1
Di-n-octylphthalate	ND		ug/kg	240	83.	1

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-04 Date Collected: 07/16/19 13:52

Client ID: SB13_8.0-8.5 Date Received: 07/16/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	240	23.	1
Dimethyl phthalate	ND		ug/kg	240	51.	1
Benzo(a)anthracene	ND		ug/kg	150	28.	1
Benzo(a)pyrene	ND		ug/kg	200	60.	1
Benzo(b)fluoranthene	ND		ug/kg	150	41.	1
Benzo(k)fluoranthene	ND		ug/kg	150	39.	1
Chrysene	ND		ug/kg	150	25.	1
Acenaphthylene	ND		ug/kg	200	38.	1
Anthracene	120	J	ug/kg	150	48.	1
Benzo(ghi)perylene	ND		ug/kg	200	29.	1
Fluorene	490		ug/kg	240	24.	1
Phenanthrene	1100		ug/kg	150	30.	1
Dibenzo(a,h)anthracene	ND		ug/kg	150	28.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	200	34.	1
Pyrene	160		ug/kg	150	24.	1
Biphenyl	ND		ug/kg	560	57.	1
4-Chloroaniline	ND		ug/kg	240	44.	1
2-Nitroaniline	ND		ug/kg	240	47.	1
3-Nitroaniline	ND		ug/kg	240	46.	1
4-Nitroaniline	ND		ug/kg	240	100	1
Dibenzofuran	ND		ug/kg	240	23.	1
2-Methylnaphthalene	ND		ug/kg	290	30.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	240	26.	1
Acetophenone	ND		ug/kg	240	30.	1
2,4,6-Trichlorophenol	ND		ug/kg	150	46.	1
p-Chloro-m-cresol	ND		ug/kg	240	36.	1
2-Chlorophenol	ND		ug/kg	240	29.	1
2,4-Dichlorophenol	ND		ug/kg	220	39.	1
2,4-Dimethylphenol	ND		ug/kg	240	81.	1
2-Nitrophenol	ND		ug/kg	530	92.	1
4-Nitrophenol	ND		ug/kg	340	100	1
2,4-Dinitrophenol	ND		ug/kg	1200	110	1
4,6-Dinitro-o-cresol	ND		ug/kg	640	120	1
Pentachlorophenol	ND		ug/kg	200	54.	1
Phenol	ND		ug/kg	240	37.	1
2-Methylphenol	ND		ug/kg	240	38.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	350	38.	1

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-04 Date Collected: 07/16/19 13:52

Client ID: SB13_8.0-8.5 Date Received: 07/16/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	240	47.	1
Benzoic Acid	ND		ug/kg	790	250	1
Benzyl Alcohol	ND		ug/kg	240	75.	1
Carbazole	ND		ug/kg	240	24.	1
1,4-Dioxane	ND		ug/kg	37	11.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	72		25-120
Phenol-d6	73		10-120
Nitrobenzene-d5	79		23-120
2-Fluorobiphenyl	70		30-120
2,4,6-Tribromophenol	71		10-136
4-Terphenyl-d14	65		18-120

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001
Lab Number: L1931245
Report Date: 08/01/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/16/19 23:10
Analyst: RC

Extraction Method: EPA 3546
Extraction Date: 07/16/19 00:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1260218-1					
Acenaphthene	ND		ug/kg	130	17.
1,2,4-Trichlorobenzene	ND		ug/kg	160	19.
Hexachlorobenzene	ND		ug/kg	98	18.
Bis(2-chloroethyl)ether	ND		ug/kg	150	22.
2-Chloronaphthalene	ND		ug/kg	160	16.
1,2-Dichlorobenzene	ND		ug/kg	160	29.
1,3-Dichlorobenzene	ND		ug/kg	160	28.
1,4-Dichlorobenzene	ND		ug/kg	160	29.
3,3'-Dichlorobenzidine	ND		ug/kg	160	44.
2,4-Dinitrotoluene	ND		ug/kg	160	33.
2,6-Dinitrotoluene	ND		ug/kg	160	28.
Fluoranthene	ND		ug/kg	98	19.
4-Chlorophenyl phenyl ether	ND		ug/kg	160	18.
4-Bromophenyl phenyl ether	ND		ug/kg	160	25.
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	28.
Bis(2-chloroethoxy)methane	ND		ug/kg	180	16.
Hexachlorobutadiene	ND		ug/kg	160	24.
Hexachlorocyclopentadiene	ND		ug/kg	470	150
Hexachloroethane	ND		ug/kg	130	26.
Isophorone	ND		ug/kg	150	21.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	150	24.
NDPA/DPA	ND		ug/kg	130	19.
n-Nitrosodi-n-propylamine	ND		ug/kg	160	25.
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	57.
Butyl benzyl phthalate	ND		ug/kg	160	41.
Di-n-butylphthalate	ND		ug/kg	160	31.
Di-n-octylphthalate	ND		ug/kg	160	56.
Diethyl phthalate	ND		ug/kg	160	15.

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001
Lab Number: L1931245
Report Date: 08/01/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/16/19 23:10
Analyst: RC

Extraction Method: EPA 3546
Extraction Date: 07/16/19 00:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1260218-1					
Dimethyl phthalate	ND		ug/kg	160	34.
Benzo(a)anthracene	ND		ug/kg	98	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	98	28.
Benzo(k)fluoranthene	ND		ug/kg	98	26.
Chrysene	ND		ug/kg	98	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	98	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	98	20.
Dibenzo(a,h)anthracene	ND		ug/kg	98	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	98	16.
Biphenyl	ND		ug/kg	370	38.
4-Chloroaniline	ND		ug/kg	160	30.
2-Nitroaniline	ND		ug/kg	160	32.
3-Nitroaniline	ND		ug/kg	160	31.
4-Nitroaniline	ND		ug/kg	160	68.
Dibenzofuran	ND		ug/kg	160	16.
2-Methylnaphthalene	ND		ug/kg	200	20.
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	160	17.
Acetophenone	ND		ug/kg	160	20.
2,4,6-Trichlorophenol	ND		ug/kg	98	31.
p-Chloro-m-cresol	ND		ug/kg	160	24.
2-Chlorophenol	ND		ug/kg	160	19.
2,4-Dichlorophenol	ND		ug/kg	150	26.
2,4-Dimethylphenol	ND		ug/kg	160	54.
2-Nitrophenol	ND		ug/kg	350	62.

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001
Lab Number: L1931245
Report Date: 08/01/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/16/19 23:10
Analyst: RC

Extraction Method: EPA 3546
Extraction Date: 07/16/19 00:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG1260218-1					
4-Nitrophenol	ND		ug/kg	230	67.
2,4-Dinitrophenol	ND		ug/kg	790	76.
4,6-Dinitro-o-cresol	ND		ug/kg	430	79.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	25.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.
2,4,5-Trichlorophenol	ND		ug/kg	160	31.
Benzoic Acid	ND		ug/kg	530	170
Benzyl Alcohol	ND		ug/kg	160	50.
Carbazole	ND		ug/kg	160	16.
1,4-Dioxane	ND		ug/kg	25	7.6

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	41		25-120
Phenol-d6	43		10-120
Nitrobenzene-d5	42		23-120
2-Fluorobiphenyl	40		30-120
2,4,6-Tribromophenol	43		10-136
4-Terphenyl-d14	39		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001

Lab Number: L1931245
Report Date: 08/01/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1260218-2 WG1260218-3								
Acenaphthene	53		50		31-137	6		50
1,2,4-Trichlorobenzene	50		47		38-107	6		50
Hexachlorobenzene	54		51		40-140	6		50
Bis(2-chloroethyl)ether	50		47		40-140	6		50
2-Chloronaphthalene	53		49		40-140	8		50
1,2-Dichlorobenzene	49		46		40-140	6		50
1,3-Dichlorobenzene	48		45		40-140	6		50
1,4-Dichlorobenzene	48		45		28-104	6		50
3,3'-Dichlorobenzidine	47		45		40-140	4		50
2,4-Dinitrotoluene	57		54		40-132	5		50
2,6-Dinitrotoluene	55		54		40-140	2		50
Fluoranthene	55		51		40-140	8		50
4-Chlorophenyl phenyl ether	53		50		40-140	6		50
4-Bromophenyl phenyl ether	53		51		40-140	4		50
Bis(2-chloroisopropyl)ether	48		44		40-140	9		50
Bis(2-chloroethoxy)methane	52		49		40-117	6		50
Hexachlorobutadiene	52		48		40-140	8		50
Hexachlorocyclopentadiene	54		51		40-140	6		50
Hexachloroethane	47		45		40-140	4		50
Isophorone	53		51		40-140	4		50
Naphthalene	50		48		40-140	4		50
Nitrobenzene	53		50		40-140	6		50
NDPA/DPA	54		52		36-157	4		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001

Lab Number: L1931245
Report Date: 08/01/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1260218-2 WG1260218-3								
n-Nitrosodi-n-propylamine	54		51		32-121	6		50
Bis(2-ethylhexyl)phthalate	50		48		40-140	4		50
Butyl benzyl phthalate	52		49		40-140	6		50
Di-n-butylphthalate	54		52		40-140	4		50
Di-n-octylphthalate	56		52		40-140	7		50
Diethyl phthalate	53		51		40-140	4		50
Dimethyl phthalate	54		52		40-140	4		50
Benzo(a)anthracene	53		50		40-140	6		50
Benzo(a)pyrene	58		55		40-140	5		50
Benzo(b)fluoranthene	54		50		40-140	8		50
Benzo(k)fluoranthene	53		50		40-140	6		50
Chrysene	49		47		40-140	4		50
Acenaphthylene	55		52		40-140	6		50
Anthracene	55		52		40-140	6		50
Benzo(ghi)perylene	53		49		40-140	8		50
Fluorene	54		52		40-140	4		50
Phenanthrene	52		49		40-140	6		50
Dibenzo(a,h)anthracene	52		49		40-140	6		50
Indeno(1,2,3-cd)pyrene	55		52		40-140	6		50
Pyrene	52		50		35-142	4		50
Biphenyl	57		54		54-104	5		50
4-Chloroaniline	41		**39**	Q	40-140	5		50
2-Nitroaniline	57		56		47-134	2		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001

Lab Number: L1931245
Report Date: 08/01/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1260218-2 WG1260218-3								
3-Nitroaniline	47		45		26-129	4		50
4-Nitroaniline	53		52		41-125	2		50
Dibenzofuran	52		49		40-140	6		50
2-Methylnaphthalene	53		50		40-140	6		50
1,2,4,5-Tetrachlorobenzene	56		52		40-117	7		50
Acetophenone	58		55		14-144	5		50
2,4,6-Trichlorophenol	60		57		30-130	5		50
p-Chloro-m-cresol	56		54		26-103	4		50
2-Chlorophenol	53		50		25-102	6		50
2,4-Dichlorophenol	56		53		30-130	6		50
2,4-Dimethylphenol	54		52		30-130	4		50
2-Nitrophenol	58		56		30-130	4		50
4-Nitrophenol	54		53		11-114	2		50
2,4-Dinitrophenol	57		57		4-130	0		50
4,6-Dinitro-o-cresol	60		60		10-130	0		50
Pentachlorophenol	55		54		17-109	2		50
Phenol	48		46		26-90	4		50
2-Methylphenol	53		51		30-130.	4		50
3-Methylphenol/4-Methylphenol	53		51		30-130	4		50
2,4,5-Trichlorophenol	57		55		30-130	4		50
Benzoic Acid	51		51		10-110	0		50
Benzyl Alcohol	53		50		40-140	6		50
Carbazole	**53**	Q	**51**	Q	54-128	4		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001

Lab Number: L1931245
Report Date: 08/01/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG1260218-2 WG1260218-3								
1,4-Dioxane	48		46		40-140	4		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	53		51		25-120
Phenol-d6	53		51		10-120
Nitrobenzene-d5	54		51		23-120
2-Fluorobiphenyl	52		50		30-120
2,4,6-Tribromophenol	59		57		10-136
4-Terphenyl-d14	50		48		18-120

PCBS

Project Name: 450 JOHNSON AVENUE
Lab Number: L1931245
Project Number: 170588001
Report Date: 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-01
Client ID: DUP01_071619
Sample Location: BROOKLYN, NY

Date Collected: 07/16/19 00:00
Date Received: 07/16/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 07/18/19 17:10
Analyst: AWS
Percent Solids: 94%

Extraction Method: EPA 3546
Extraction Date: 07/17/19 00:18
Cleanup Method: EPA 3665A
Cleanup Date: 07/17/19
Cleanup Method: EPA 3660B
Cleanup Date: 07/17/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	33.8	3.00	1	A
Aroclor 1221	ND		ug/kg	33.8	3.38	1	A
Aroclor 1232	ND		ug/kg	33.8	7.16	1	A
Aroclor 1242	ND		ug/kg	33.8	4.55	1	A
Aroclor 1248	ND		ug/kg	33.8	5.07	1	A
Aroclor 1254	ND		ug/kg	33.8	3.70	1	A
Aroclor 1260	ND		ug/kg	33.8	6.24	1	A
Aroclor 1262	ND		ug/kg	33.8	4.29	1	A
Aroclor 1268	ND		ug/kg	33.8	3.50	1	A
PCBs, Total	ND		ug/kg	33.8	3.00	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	48		30-150	A
Decachlorobiphenyl	40		30-150	A
2,4,5,6-Tetrachloro-m-xylene	47		30-150	B
Decachlorobiphenyl	50		30-150	B

Project Name: 450 JOHNSON AVENUE
Lab Number: L1931245
Project Number: 170588001
Report Date: 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-02
Client ID: SB03_14.0-14.5
Sample Location: BROOKLYN, NY

Date Collected: 07/16/19 09:20
Date Received: 07/16/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 07/18/19 17:23
Analyst: AWS
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 07/17/19 00:18
Cleanup Method: EPA 3665A
Cleanup Date: 07/17/19
Cleanup Method: EPA 3660B
Cleanup Date: 07/17/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	37.1	3.29	1	A
Aroclor 1221	ND		ug/kg	37.1	3.71	1	A
Aroclor 1232	ND		ug/kg	37.1	7.86	1	A
Aroclor 1242	ND		ug/kg	37.1	5.00	1	A
Aroclor 1248	ND		ug/kg	37.1	5.56	1	A
Aroclor 1254	ND		ug/kg	37.1	4.06	1	A
Aroclor 1260	ND		ug/kg	37.1	6.85	1	A
Aroclor 1262	ND		ug/kg	37.1	4.71	1	A
Aroclor 1268	ND		ug/kg	37.1	3.84	1	A
PCBs, Total	ND		ug/kg	37.1	3.29	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	69		30-150	A
Decachlorobiphenyl	62		30-150	A
2,4,5,6-Tetrachloro-m-xylene	67		30-150	B
Decachlorobiphenyl	72		30-150	B

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001
Lab Number: L1931245
Report Date: 08/01/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 07/17/19 17:37
Analyst: AWS

Extraction Method: EPA 3546
Extraction Date: 07/17/19 00:18
Cleanup Method: EPA 3665A
Cleanup Date: 07/17/19
Cleanup Method: EPA 3660B
Cleanup Date: 07/17/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01-02 Batch: WG1260710-1						
Aroclor 1016	ND		ug/kg	32.4	2.88	A
Aroclor 1221	ND		ug/kg	32.4	3.25	A
Aroclor 1232	ND		ug/kg	32.4	6.88	A
Aroclor 1242	ND		ug/kg	32.4	4.37	A
Aroclor 1248	ND		ug/kg	32.4	4.87	A
Aroclor 1254	ND		ug/kg	32.4	3.55	A
Aroclor 1260	ND		ug/kg	32.4	6.00	A
Aroclor 1262	ND		ug/kg	32.4	4.12	A
Aroclor 1268	ND		ug/kg	32.4	3.36	A
PCBs, Total	ND		ug/kg	32.4	2.88	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	63		30-150	A
Decachlorobiphenyl	68		30-150	A
2,4,5,6-Tetrachloro-m-xylene	63		30-150	B
Decachlorobiphenyl	64		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001

Lab Number: L1931245
Report Date: 08/01/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01-02 Batch: WG1260710-2 WG1260710-3									
Aroclor 1016	59		59		40-140	0		50	A
Aroclor 1260	55		54		40-140	2		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	66		65		30-150	A
Decachlorobiphenyl	66		64		30-150	A
2,4,5,6-Tetrachloro-m-xylene	65		64		30-150	B
Decachlorobiphenyl	63		61		30-150	B

METALS

Project Name: 450 JOHNSON AVENUE
Lab Number: L1931245
Project Number: 170588001
Report Date: 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-01
Client ID: DUP01_071619
Sample Location: BROOKLYN, NY
Date Collected: 07/16/19 00:00
Date Received: 07/16/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 94%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	8110		mg/kg	8.23	2.22	2	07/17/19 10:45	07/17/19 13:30	EPA 3050B	1,6010D	LC
Antimony, Total	ND		mg/kg	4.12	0.313	2	07/17/19 10:45	07/17/19 13:30	EPA 3050B	1,6010D	LC
Arsenic, Total	3.88		mg/kg	0.823	0.171	2	07/17/19 10:45	07/17/19 13:30	EPA 3050B	1,6010D	LC
Barium, Total	44.5		mg/kg	0.823	0.143	2	07/17/19 10:45	07/17/19 13:30	EPA 3050B	1,6010D	LC
Beryllium, Total	0.329	J	mg/kg	0.412	0.027	2	07/17/19 10:45	07/17/19 13:30	EPA 3050B	1,6010D	LC
Cadmium, Total	ND		mg/kg	0.823	0.081	2	07/17/19 10:45	07/17/19 13:30	EPA 3050B	1,6010D	LC
Calcium, Total	774		mg/kg	8.23	2.88	2	07/17/19 10:45	07/17/19 13:30	EPA 3050B	1,6010D	LC
Chromium, Total	20.3		mg/kg	0.823	0.079	2	07/17/19 10:45	07/17/19 13:30	EPA 3050B	1,6010D	LC
Cobalt, Total	7.66		mg/kg	1.65	0.137	2	07/17/19 10:45	07/17/19 13:30	EPA 3050B	1,6010D	LC
Copper, Total	15.4		mg/kg	0.823	0.212	2	07/17/19 10:45	07/17/19 13:30	EPA 3050B	1,6010D	LC
Iron, Total	15900		mg/kg	4.12	0.743	2	07/17/19 10:45	07/17/19 13:30	EPA 3050B	1,6010D	LC
Lead, Total	23.5		mg/kg	4.12	0.221	2	07/17/19 10:45	07/17/19 13:30	EPA 3050B	1,6010D	LC
Magnesium, Total	2830		mg/kg	8.23	1.27	2	07/17/19 10:45	07/17/19 13:30	EPA 3050B	1,6010D	LC
Manganese, Total	186		mg/kg	0.823	0.131	2	07/17/19 10:45	07/17/19 13:30	EPA 3050B	1,6010D	LC
Mercury, Total	0.090		mg/kg	0.067	0.044	1	07/17/19 09:10	07/18/19 11:38	EPA 7471B	1,7471B	GD
Nickel, Total	12.5		mg/kg	2.06	0.199	2	07/17/19 10:45	07/17/19 13:30	EPA 3050B	1,6010D	LC
Potassium, Total	809		mg/kg	206	11.8	2	07/17/19 10:45	07/17/19 13:30	EPA 3050B	1,6010D	LC
Selenium, Total	ND		mg/kg	1.65	0.212	2	07/17/19 10:45	07/17/19 13:30	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.823	0.233	2	07/17/19 10:45	07/17/19 13:30	EPA 3050B	1,6010D	LC
Sodium, Total	243		mg/kg	165	2.59	2	07/17/19 10:45	07/17/19 13:30	EPA 3050B	1,6010D	LC
Thallium, Total	ND		mg/kg	1.65	0.259	2	07/17/19 10:45	07/17/19 13:30	EPA 3050B	1,6010D	LC
Vanadium, Total	25.4		mg/kg	0.823	0.167	2	07/17/19 10:45	07/17/19 13:30	EPA 3050B	1,6010D	LC
Zinc, Total	27.8		mg/kg	4.12	0.241	2	07/17/19 10:45	07/17/19 13:30	EPA 3050B	1,6010D	LC

Project Name: 450 JOHNSON AVENUE
Lab Number: L1931245
Project Number: 170588001
Report Date: 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-02
Client ID: SB03_14.0-14.5
Sample Location: BROOKLYN, NY
Date Collected: 07/16/19 09:20
Date Received: 07/16/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	7840		mg/kg	9.12	2.46	2	07/17/19 10:45	07/18/19 00:25	EPA 3050B	1,6010D	MC
Antimony, Total	ND		mg/kg	4.56	0.346	2	07/17/19 10:45	07/18/19 14:35	EPA 3050B	1,6010D	LC
Arsenic, Total	2.31		mg/kg	0.912	0.190	2	07/17/19 10:45	07/18/19 14:35	EPA 3050B	1,6010D	LC
Barium, Total	45.9		mg/kg	0.912	0.159	2	07/17/19 10:45	07/18/19 00:25	EPA 3050B	1,6010D	MC
Beryllium, Total	0.474		mg/kg	0.456	0.030	2	07/17/19 10:45	07/18/19 00:25	EPA 3050B	1,6010D	MC
Cadmium, Total	ND		mg/kg	0.912	0.089	2	07/17/19 10:45	07/18/19 00:25	EPA 3050B	1,6010D	MC
Calcium, Total	1020		mg/kg	9.12	3.19	2	07/17/19 10:45	07/18/19 00:25	EPA 3050B	1,6010D	MC
Chromium, Total	15.5		mg/kg	0.912	0.088	2	07/17/19 10:45	07/18/19 00:25	EPA 3050B	1,6010D	MC
Cobalt, Total	8.63		mg/kg	1.82	0.151	2	07/17/19 10:45	07/18/19 00:25	EPA 3050B	1,6010D	MC
Copper, Total	10.9		mg/kg	0.912	0.235	2	07/17/19 10:45	07/18/19 00:25	EPA 3050B	1,6010D	MC
Iron, Total	21000		mg/kg	4.56	0.823	2	07/17/19 10:45	07/18/19 00:25	EPA 3050B	1,6010D	MC
Lead, Total	35.2		mg/kg	4.56	0.244	2	07/17/19 10:45	07/18/19 00:25	EPA 3050B	1,6010D	MC
Magnesium, Total	1950		mg/kg	9.12	1.40	2	07/17/19 10:45	07/18/19 00:25	EPA 3050B	1,6010D	MC
Manganese, Total	274		mg/kg	0.912	0.145	2	07/17/19 10:45	07/18/19 00:25	EPA 3050B	1,6010D	MC
Mercury, Total	0.144		mg/kg	0.074	0.048	1	07/17/19 09:10	07/18/19 12:10	EPA 7471B	1,7471B	GD
Nickel, Total	10.6		mg/kg	2.28	0.221	2	07/17/19 10:45	07/18/19 00:25	EPA 3050B	1,6010D	MC
Potassium, Total	598		mg/kg	228	13.1	2	07/17/19 10:45	07/18/19 00:25	EPA 3050B	1,6010D	MC
Selenium, Total	ND		mg/kg	1.82	0.235	2	07/17/19 10:45	07/18/19 00:25	EPA 3050B	1,6010D	MC
Silver, Total	ND		mg/kg	0.912	0.258	2	07/17/19 10:45	07/18/19 00:25	EPA 3050B	1,6010D	MC
Sodium, Total	171	J	mg/kg	182	2.87	2	07/17/19 10:45	07/18/19 00:25	EPA 3050B	1,6010D	MC
Thallium, Total	ND		mg/kg	1.82	0.287	2	07/17/19 10:45	07/18/19 00:25	EPA 3050B	1,6010D	MC
Vanadium, Total	24.3		mg/kg	0.912	0.185	2	07/17/19 10:45	07/18/19 00:25	EPA 3050B	1,6010D	MC
Zinc, Total	32.4		mg/kg	4.56	0.267	2	07/17/19 10:45	07/18/19 00:25	EPA 3050B	1,6010D	MC

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-03 Date Collected: 07/16/19 11:45

Client ID: SB04_11.0-11.5 Date Received: 07/16/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	7030		mg/kg	8.76	2.36	2	07/17/19 10:45	07/18/19 00:29	EPA 3050B	1,6010D	MC
Antimony, Total	ND		mg/kg	4.38	0.333	2	07/17/19 10:45	07/18/19 14:39	EPA 3050B	1,6010D	LC
Arsenic, Total	1.73		mg/kg	0.876	0.182	2	07/17/19 10:45	07/18/19 14:39	EPA 3050B	1,6010D	LC
Barium, Total	41.2		mg/kg	0.876	0.152	2	07/17/19 10:45	07/18/19 00:29	EPA 3050B	1,6010D	MC
Beryllium, Total	0.525		mg/kg	0.438	0.029	2	07/17/19 10:45	07/18/19 00:29	EPA 3050B	1,6010D	MC
Cadmium, Total	ND		mg/kg	0.876	0.086	2	07/17/19 10:45	07/18/19 00:29	EPA 3050B	1,6010D	MC
Calcium, Total	1040		mg/kg	8.76	3.06	2	07/17/19 10:45	07/18/19 00:29	EPA 3050B	1,6010D	MC
Chromium, Total	15.7		mg/kg	0.876	0.084	2	07/17/19 10:45	07/18/19 00:29	EPA 3050B	1,6010D	MC
Cobalt, Total	6.43		mg/kg	1.75	0.145	2	07/17/19 10:45	07/18/19 00:29	EPA 3050B	1,6010D	MC
Copper, Total	9.60		mg/kg	0.876	0.226	2	07/17/19 10:45	07/18/19 00:29	EPA 3050B	1,6010D	MC
Iron, Total	25900		mg/kg	4.38	0.791	2	07/17/19 10:45	07/18/19 00:29	EPA 3050B	1,6010D	MC
Lead, Total	17.4		mg/kg	4.38	0.235	2	07/17/19 10:45	07/18/19 00:29	EPA 3050B	1,6010D	MC
Magnesium, Total	1510		mg/kg	8.76	1.35	2	07/17/19 10:45	07/18/19 00:29	EPA 3050B	1,6010D	MC
Manganese, Total	590		mg/kg	0.876	0.139	2	07/17/19 10:45	07/18/19 00:29	EPA 3050B	1,6010D	MC
Mercury, Total	ND		mg/kg	0.073	0.048	1	07/17/19 09:10	07/18/19 12:12	EPA 7471B	1,7471B	GD
Nickel, Total	8.46		mg/kg	2.19	0.212	2	07/17/19 10:45	07/18/19 00:29	EPA 3050B	1,6010D	MC
Potassium, Total	645		mg/kg	219	12.6	2	07/17/19 10:45	07/18/19 00:29	EPA 3050B	1,6010D	MC
Selenium, Total	ND		mg/kg	1.75	0.226	2	07/17/19 10:45	07/18/19 00:29	EPA 3050B	1,6010D	MC
Silver, Total	ND		mg/kg	0.876	0.248	2	07/17/19 10:45	07/18/19 00:29	EPA 3050B	1,6010D	MC
Sodium, Total	38.3	J	mg/kg	175	2.76	2	07/17/19 10:45	07/18/19 00:29	EPA 3050B	1,6010D	MC
Thallium, Total	ND		mg/kg	1.75	0.276	2	07/17/19 10:45	07/18/19 00:29	EPA 3050B	1,6010D	MC
Vanadium, Total	12.6		mg/kg	0.876	0.178	2	07/17/19 10:45	07/18/19 00:29	EPA 3050B	1,6010D	MC
Zinc, Total	27.4		mg/kg	4.38	0.256	2	07/17/19 10:45	07/18/19 00:29	EPA 3050B	1,6010D	MC

Project Name: 450 JOHNSON AVENUE
Lab Number: L1931245
Project Number: 170588001
Report Date: 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-04
Client ID: SB13_8.0-8.5
Sample Location: BROOKLYN, NY
Date Collected: 07/16/19 13:52
Date Received: 07/16/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 67%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	3350		mg/kg	11.5	3.11	2	07/17/19 10:45	07/18/19 00:34	EPA 3050B	1,6010D	MC
Antimony, Total	0.852	J	mg/kg	5.76	0.438	2	07/17/19 10:45	07/18/19 14:44	EPA 3050B	1,6010D	LC
Arsenic, Total	14.6		mg/kg	1.15	0.240	2	07/17/19 10:45	07/18/19 14:44	EPA 3050B	1,6010D	LC
Barium, Total	175		mg/kg	1.15	0.200	2	07/17/19 10:45	07/18/19 00:34	EPA 3050B	1,6010D	MC
Beryllium, Total	0.276	J	mg/kg	0.576	0.038	2	07/17/19 10:45	07/18/19 00:34	EPA 3050B	1,6010D	MC
Cadmium, Total	ND		mg/kg	1.15	0.113	2	07/17/19 10:45	07/18/19 00:34	EPA 3050B	1,6010D	MC
Calcium, Total	7630		mg/kg	11.5	4.03	2	07/17/19 10:45	07/18/19 00:34	EPA 3050B	1,6010D	MC
Chromium, Total	15.1		mg/kg	1.15	0.110	2	07/17/19 10:45	07/18/19 00:34	EPA 3050B	1,6010D	MC
Cobalt, Total	7.17		mg/kg	2.30	0.191	2	07/17/19 10:45	07/18/19 00:34	EPA 3050B	1,6010D	MC
Copper, Total	89.4		mg/kg	1.15	0.297	2	07/17/19 10:45	07/18/19 00:34	EPA 3050B	1,6010D	MC
Iron, Total	12600		mg/kg	5.76	1.04	2	07/17/19 10:45	07/18/19 00:34	EPA 3050B	1,6010D	MC
Lead, Total	610		mg/kg	5.76	0.309	2	07/17/19 10:45	07/18/19 00:34	EPA 3050B	1,6010D	MC
Magnesium, Total	958		mg/kg	11.5	1.77	2	07/17/19 10:45	07/18/19 00:34	EPA 3050B	1,6010D	MC
Manganese, Total	174		mg/kg	1.15	0.183	2	07/17/19 10:45	07/18/19 00:34	EPA 3050B	1,6010D	MC
Mercury, Total	3.12		mg/kg	0.094	0.061	1	07/17/19 09:10	07/18/19 12:14	EPA 7471B	1,7471B	GD
Nickel, Total	11.4		mg/kg	2.88	0.279	2	07/17/19 10:45	07/18/19 00:34	EPA 3050B	1,6010D	MC
Potassium, Total	497		mg/kg	288	16.6	2	07/17/19 10:45	07/18/19 00:34	EPA 3050B	1,6010D	MC
Selenium, Total	1.98	J	mg/kg	2.30	0.297	2	07/17/19 10:45	07/18/19 00:34	EPA 3050B	1,6010D	MC
Silver, Total	ND		mg/kg	1.15	0.326	2	07/17/19 10:45	07/18/19 00:34	EPA 3050B	1,6010D	MC
Sodium, Total	198	J	mg/kg	230	3.63	2	07/17/19 10:45	07/18/19 00:34	EPA 3050B	1,6010D	MC
Thallium, Total	ND		mg/kg	2.30	0.363	2	07/17/19 10:45	07/18/19 00:34	EPA 3050B	1,6010D	MC
Vanadium, Total	14.4		mg/kg	1.15	0.234	2	07/17/19 10:45	07/18/19 00:34	EPA 3050B	1,6010D	MC
Zinc, Total	244		mg/kg	5.76	0.337	2	07/17/19 10:45	07/18/19 00:34	EPA 3050B	1,6010D	MC

Project Name: 450 JOHNSON AVENUE **Lab Number:** L1931245

Project Number: 170588001 **Report Date:** 08/01/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1260848-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	07/17/19 09:10	07/18/19 11:34	1,7471B	GD

Prep Information

Digestion Method: EPA 7471B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG1260871-1										
Aluminum, Total	ND		mg/kg	4.00	1.08	1	07/17/19 10:45	07/17/19 13:21	1,6010D	LC
Antimony, Total	ND		mg/kg	2.00	0.152	1	07/17/19 10:45	07/17/19 13:21	1,6010D	LC
Arsenic, Total	ND		mg/kg	0.400	0.083	1	07/17/19 10:45	07/17/19 13:21	1,6010D	LC
Barium, Total	ND		mg/kg	0.400	0.070	1	07/17/19 10:45	07/17/19 13:21	1,6010D	LC
Beryllium, Total	ND		mg/kg	0.200	0.013	1	07/17/19 10:45	07/17/19 13:21	1,6010D	LC
Cadmium, Total	ND		mg/kg	0.400	0.039	1	07/17/19 10:45	07/17/19 13:21	1,6010D	LC
Calcium, Total	ND		mg/kg	4.00	1.40	1	07/17/19 10:45	07/17/19 13:21	1,6010D	LC
Chromium, Total	ND		mg/kg	0.400	0.038	1	07/17/19 10:45	07/17/19 13:21	1,6010D	LC
Cobalt, Total	ND		mg/kg	0.800	0.066	1	07/17/19 10:45	07/17/19 13:21	1,6010D	LC
Copper, Total	ND		mg/kg	0.400	0.103	1	07/17/19 10:45	07/17/19 13:21	1,6010D	LC
Iron, Total	0.996	J	mg/kg	2.00	0.361	1	07/17/19 10:45	07/17/19 13:21	1,6010D	LC
Lead, Total	ND		mg/kg	2.00	0.107	1	07/17/19 10:45	07/17/19 13:21	1,6010D	LC
Magnesium, Total	ND		mg/kg	4.00	0.616	1	07/17/19 10:45	07/17/19 13:21	1,6010D	LC
Manganese, Total	0.192	J	mg/kg	0.400	0.064	1	07/17/19 10:45	07/17/19 13:21	1,6010D	LC
Nickel, Total	ND		mg/kg	1.00	0.097	1	07/17/19 10:45	07/17/19 13:21	1,6010D	LC
Potassium, Total	ND		mg/kg	100	5.76	1	07/17/19 10:45	07/17/19 13:21	1,6010D	LC
Selenium, Total	0.144	J	mg/kg	0.800	0.103	1	07/17/19 10:45	07/17/19 13:21	1,6010D	LC
Silver, Total	ND		mg/kg	0.400	0.113	1	07/17/19 10:45	07/17/19 13:21	1,6010D	LC
Sodium, Total	1.50	J	mg/kg	80.0	1.26	1	07/17/19 10:45	07/17/19 13:21	1,6010D	LC
Thallium, Total	ND		mg/kg	0.800	0.126	1	07/17/19 10:45	07/17/19 13:21	1,6010D	LC
Vanadium, Total	ND		mg/kg	0.400	0.081	1	07/17/19 10:45	07/17/19 13:21	1,6010D	LC
Zinc, Total	ND		mg/kg	2.00	0.117	1	07/17/19 10:45	07/17/19 13:21	1,6010D	LC

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001
Lab Number: L1931245
Report Date: 08/01/19

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVENUE

Project Number: 170588001

Lab Number: L1931245

Report Date: 08/01/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1260848-2 SRM Lot Number: D105-540								
Mercury, Total	104		-		60-141	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVENUE

Project Number: 170588001

Lab Number: L1931245

Report Date: 08/01/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1260871-2 SRM Lot Number: D105-540					
Aluminum, Total	60	-	51-149	-	
Antimony, Total	160	-	19-249	-	
Arsenic, Total	105	-	70-130	-	
Barium, Total	89	-	75-125	-	
Beryllium, Total	89	-	75-125	-	
Cadmium, Total	87	-	75-125	-	
Calcium, Total	81	-	73-127	-	
Chromium, Total	88	-	70-130	-	
Cobalt, Total	92	-	75-125	-	
Copper, Total	93	-	75-125	-	
Iron, Total	83	-	38-162	-	
Lead, Total	94	-	71-128	-	
Magnesium, Total	75	-	63-137	-	
Manganese, Total	82	-	76-124	-	
Nickel, Total	91	-	70-131	-	
Potassium, Total	77	-	60-140	-	
Selenium, Total	100	-	63-137	-	
Silver, Total	92	-	69-131	-	
Sodium, Total	89	-	37-162	-	
Thallium, Total	89	-	68-132	-	
Vanadium, Total	88	-	65-135	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVENUE

Project Number: 170588001

Lab Number: L1931245

Report Date: 08/01/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG1260871-2 SRM Lot Number: D105-540					
Zinc, Total	93	-	70-130	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001

Lab Number: L1931245
Report Date: 08/01/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1260848-3 QC Sample: L1931245-01 Client ID: DUP01_071619												
Mercury, Total	0.090	0.136	0.232	**171**	Q	-	-		80-120	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001

Lab Number: L1931245
Report Date: 08/01/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1260871-3 QC Sample: L1931245-01 Client ID: DUP01_071619										
Aluminum, Total	8110	161	8720	**379**	Q	-	-	75-125	-	20
Antimony, Total	ND	40.2	32.9	82		-	-	75-125	-	20
Arsenic, Total	3.88	9.66	11.6	80		-	-	75-125	-	20
Barium, Total	44.5	161	193	92		-	-	75-125	-	20
Beryllium, Total	0.329J	4.02	3.79	94		-	-	75-125	-	20
Cadmium, Total	ND	4.1	2.28	**56**	Q	-	-	75-125	-	20
Calcium, Total	774	805	1480	88		-	-	75-125	-	20
Chromium, Total	20.3	16.1	27.7	**46**	Q	-	-	75-125	-	20
Cobalt, Total	7.66	40.2	37.9	75		-	-	75-125	-	20
Copper, Total	15.4	20.1	32.7	86		-	-	75-125	-	20
Iron, Total	15900	80.5	15700	**0**	Q	-	-	75-125	-	20
Lead, Total	23.5	41	56.2	80		-	-	75-125	-	20
Magnesium, Total	2830	805	2120	**0**	Q	-	-	75-125	-	20
Manganese, Total	186	40.2	251	**161**	Q	-	-	75-125	-	20
Nickel, Total	12.5	40.2	41.7	**72**	Q	-	-	75-125	-	20
Potassium, Total	809	805	1400	**73**	Q	-	-	75-125	-	20
Selenium, Total	ND	9.66	8.37	87		-	-	75-125	-	20
Silver, Total	ND	24.2	21.4	89		-	-	75-125	-	20
Sodium, Total	243	805	969	90		-	-	75-125	-	20
Thallium, Total	ND	9.66	6.81	**70**	Q	-	-	75-125	-	20
Vanadium, Total	25.4	40.2	57.1	79		-	-	75-125	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001

Lab Number: L1931245
Report Date: 08/01/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1260871-3 QC Sample: L1931245-01 Client ID: DUP01_071619									
Zinc, Total	27.8	40.2	61.7	84	-	-	75-125	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVENUE

Project Number: 170588001

Lab Number: L1931245

Report Date: 08/01/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1260848-4 QC Sample: L1931245-01 Client ID: DUP01_071619						
Mercury, Total	0.090	0.045J	mg/kg	NC		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001

Lab Number: L1931245
Report Date: 08/01/19

Parameter	Native Sample	Duplicate Sample	Units	RPD		RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1260871-4 QC Sample: L1931245-01 Client ID: DUP01_071619						
Aluminum, Total	8110	7330	mg/kg	10		20
Antimony, Total	ND	0.463J	mg/kg	NC		20
Arsenic, Total	3.88	3.67	mg/kg	6		20
Barium, Total	44.5	43.2	mg/kg	3		20
Beryllium, Total	0.329J	0.380J	mg/kg	NC		20
Cadmium, Total	ND	ND	mg/kg	NC		20
Calcium, Total	774	832	mg/kg	7		20
Chromium, Total	20.3	15.9	mg/kg	**24**	Q	20
Cobalt, Total	7.66	6.91	mg/kg	10		20
Copper, Total	15.4	15.4	mg/kg	0		20
Iron, Total	15900	19400	mg/kg	20		20
Lead, Total	23.5	30.8	mg/kg	**27**	Q	20
Magnesium, Total	2830	1410	mg/kg	**67**	Q	20
Manganese, Total	186	285	mg/kg	**42**	Q	20
Nickel, Total	12.5	11.1	mg/kg	12		20
Potassium, Total	809	570	mg/kg	**35**	Q	20
Selenium, Total	ND	ND	mg/kg	NC		20
Silver, Total	ND	ND	mg/kg	NC		20
Sodium, Total	243	202	mg/kg	18		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVENUE

Project Number: 170588001

Lab Number: L1931245

Report Date: 08/01/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG1260871-4 QC Sample: L1931245-01 Client ID: DUP01_071619					
Thallium, Total	ND	ND	mg/kg	NC	20
Vanadium, Total	25.4	29.0	mg/kg	13	20
Zinc, Total	27.8	31.0	mg/kg	11	20

INORGANICS
&
MISCELLANEOUS

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001

Lab Number: L1931245
Report Date: 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-01
Client ID: DUP01_071619
Sample Location: BROOKLYN, NY

Date Collected: 07/16/19 00:00
Date Received: 07/16/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	94.1		%	0.100	NA	1	-	07/17/19 02:54	121,2540G	YA

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001
Lab Number: L1931245
Report Date: 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-02
Client ID: SB03_14.0-14.5
Sample Location: BROOKLYN, NY
Sample Depth:
Matrix: Soil

Date Collected: 07/16/19 09:20
Date Received: 07/16/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.3		%	0.100	NA	1	-	07/17/19 02:54	121,2540G	YA

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001
Lab Number: L1931245
Report Date: 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-03
Client ID: SB04_11.0-11.5
Sample Location: BROOKLYN, NY
Sample Depth:
Matrix: Soil

Date Collected: 07/16/19 11:45
Date Received: 07/16/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.0		%	0.100	NA	1	-	07/17/19 02:54	121,2540G	YA

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001

Lab Number: L1931245
Report Date: 08/01/19

SAMPLE RESULTS

Lab ID: L1931245-04
Client ID: SB13_8.0-8.5
Sample Location: BROOKLYN, NY

Date Collected: 07/16/19 13:52
Date Received: 07/16/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	66.8		%	0.100	NA	1	-	07/17/19 02:54	121,2540G	YA

Lab Duplicate Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVENUE

Project Number: 170588001

Lab Number: L1931245

Report Date: 08/01/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG1260752-1 QC Sample: L1931095-03 Client ID: DUP Sample						
Solids, Total	86.8	87.0	%	0		20

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001

Lab Number: L1931245
Report Date: 08/01/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1931245-01A	Vial MeOH preserved	A	NA		2.7	Y	Absent		NYTCL-8260HLW(14)
L1931245-01B	Vial water preserved	A	NA		2.7	Y	Absent	16-JUL-19 23:31	NYTCL-8260HLW(14)
L1931245-01C	Vial water preserved	A	NA		2.7	Y	Absent	16-JUL-19 23:31	NYTCL-8260HLW(14)
L1931245-01D	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L1931245-01E	Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1931245-01F	Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		NYTCL-8270(14),NYTCL-8082(14)
L1931245-01G	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		NYTCL-8270(14),NYTCL-8082(14)
L1931245-02A	Vial MeOH preserved	A	NA		2.7	Y	Absent		NYTCL-8260HLW(14)
L1931245-02B	Vial water preserved	A	NA		2.7	Y	Absent	16-JUL-19 23:31	NYTCL-8260HLW(14)
L1931245-02C	Vial water preserved	A	NA		2.7	Y	Absent	16-JUL-19 23:31	NYTCL-8260HLW(14)
L1931245-02D	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L1931245-02E	Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1931245-02F	Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		NYTCL-8270(14),NYTCL-8082(14)
L1931245-02G	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		NYTCL-8270(14),NYTCL-8082(14)
L1931245-03A	Vial MeOH preserved	A	NA		2.7	Y	Absent		NYTCL-8260HLW(14)
L1931245-03B	Vial water preserved	A	NA		2.7	Y	Absent	16-JUL-19 23:31	NYTCL-8260HLW(14)
L1931245-03C	Vial water preserved	A	NA		2.7	Y	Absent	16-JUL-19 23:31	NYTCL-8260HLW(14)
L1931245-03D	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: 450 JOHNSON AVENUE
Project Number: 170588001

Lab Number: L1931245
Report Date: 08/01/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1931245-03E	Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1931245-03F	Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		NYTCL-8270(14),HOLD-8082(14)
L1931245-03G	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		NYTCL-8270(14),HOLD-8082(14)
L1931245-04A	Vial MeOH preserved	A	NA		2.7	Y	Absent		NYTCL-8260HLW(14)
L1931245-04B	Vial water preserved	A	NA		2.7	Y	Absent	16-JUL-19 23:31	NYTCL-8260HLW(14)
L1931245-04C	Vial water preserved	A	NA		2.7	Y	Absent	16-JUL-19 23:31	NYTCL-8260HLW(14)
L1931245-04D	Plastic 2oz unpreserved for TS	A	NA		2.7	Y	Absent		TS(7)
L1931245-04E	Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1931245-04F	Glass 60mL/2oz unpreserved	A	NA		2.7	Y	Absent		NYTCL-8270(14),HOLD-8082(14)
L1931245-04G	Glass 120ml/4oz unpreserved	A	NA		2.7	Y	Absent		NYTCL-8270(14),HOLD-8082(14)

*Values in parentheses indicate holding time in days

Project Name:	450 JOHNSON AVENUE	**Lab Number:**	L1931245
Project Number:	170588001	**Report Date:**	08/01/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	450 JOHNSON AVENUE	**Lab Number:**	L1931245
Project Number:	170588001	**Report Date:**	08/01/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	450 JOHNSON AVENUE	**Lab Number:**	L1931245
Project Number:	170588001	**Report Date:**	08/01/19

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581 — 8 Walkup Dr. — TEL: 508-898-9220 — FAX: 508-898-9193

Mansfield, MA 02048 — 320 Forbes Blvd — TEL: 508-822-9300 — FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 7/16/19

ALPHA Job #: L1931745

Client Information

Client: Langan
Address: 360 W31st Street NY, NY 10001
Phone: 212-479-5400
Fax: 212-479-2727
Email: jleung@langan.com

Project Information

Project Name: 450 Johnson Avenue
Project Location: Brooklyn, NY
Project #: 170588001
(Use Project name as Project #) ☐
Project Manager: Julia Zeung
ALPHAQuote #:

Turn-Around Time

Standard ☐ ASAP Due Date:
Rush (only if pre approved) ☒ # of Days:

Deliverables

☐ ASP-A ☒ ASP-B
☐ EQuIS (1 File) ☒ EQuIS (4 File)
☐ Other

Regulatory Requirement

☒ NY TOGS ☒ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information

☐ Same as Client Info
PO # Concur

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

ASAP-24hr if possible, 48if not

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TCL VOCs	TCL SVOCs	TAL Metals	Pesticides	PCBs	PCBs HOLD			Sample Specific Comments	Total Bottle
36945-01	DUP-071619	7/16/19	—	S	DC	X	X	X		X					6
02	SB03-14.0-14.5	7/16/19	0920	S	DC	X	X	X		X					6
03	SB04-11.0-11.5	7/16/19	1145	S	DC	X	X	X			X				6
	SB13-8.0-8.5	7/16/19	1352	S	DC	X	X	X			X				6

Container Type	A/P	A	A					
Preservative	A/F	A	A					

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
	7/16/19 14:25		7/16/19 14:25
	7/16/19 16:25		7/16/19 16:30
	7/16/19 20:50		7/16/19 16:25

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

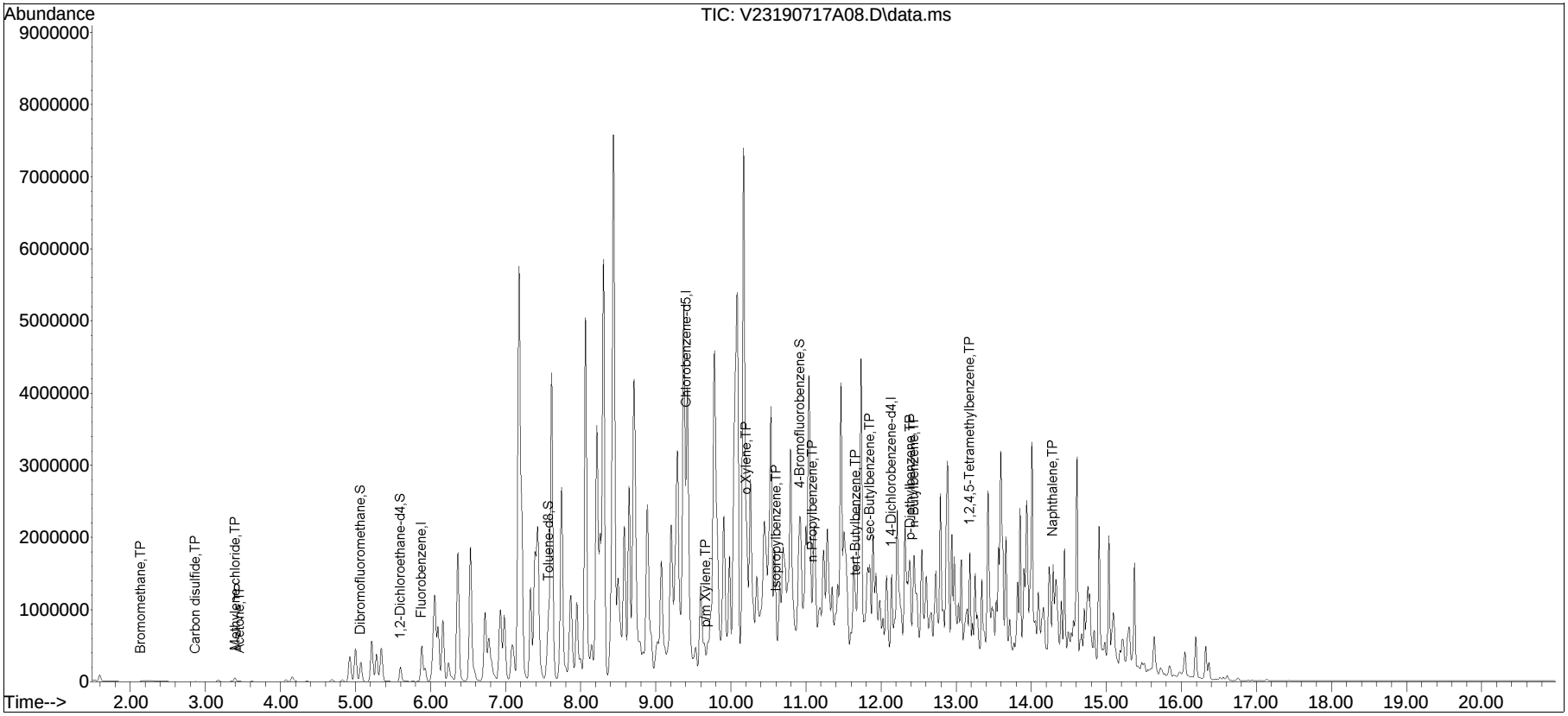
Form No: 01-25 HC (rev. 30-Sept-2013)

Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA123\2019\190717A\
Data File : V23190717A08.D
Acq On : 17 Jul 2019 07:16 am
Operator : VOA123:mv
Sample : l1931245-01D,31H,6.69,5,0.050,,a
Misc : WG1260933,ICAL15898
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Jul 17 08:47:38 2019
Quant Method : I:\VOLATILES\VOA123\2019\190717A\V123_190621_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Jun 25 09:48:51 2019
Response via : Initial Calibration

Sub List : 8260-NYTCL - Megamix plus Diox90717A\V23190717A01.D•

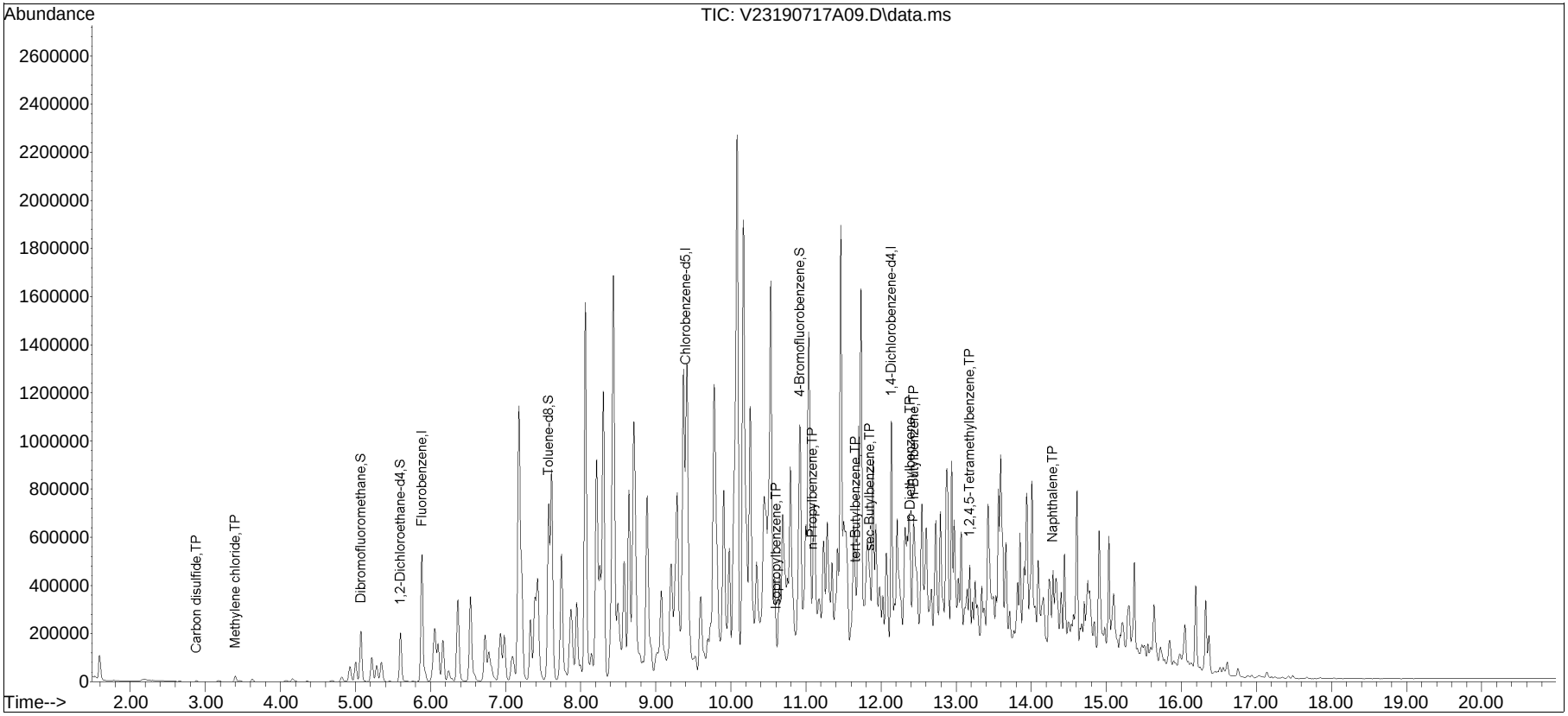


Quantitation Report (QT Reviewed)

Data Path : I:\VOLATILES\VOA123\2019\190717A\
Data File : V23190717A09.D
Acq On : 17 Jul 2019 07:41 am
Operator : VOA123:mv
Sample : l1931245-02D,31H,6.10,5,0.010,,a
Misc : WG1260933,ICAL15898
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Jul 17 08:48:53 2019
Quant Method : I:\VOLATILES\VOA123\2019\190717A\V123_190621_8260.m
Quant Title : VOLATILES BY GC/MS
QLast Update : Tue Jun 25 09:48:51 2019
Response via : Initial Calibration

Sub List : 8260-NYTCL - Megamix plus Diox90717A\V23190717A01.D•



ANALYTICAL REPORT

Lab Number:	L1931524
Client:	Langan Engineering & Environmental 21 Penn Plaza 360 W. 31st Street, 8th Floor New York, NY 10001-2727
ATTN:	Julia Leung
Phone:	(212) 479-5400
Project Name:	450 JOHNSON AVE.
Project Number:	170588001
Report Date:	08/02/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1931524-01	SB01_1.0-1.5	SOIL	BROOKLYN, NY	07/17/19 14:25	07/17/19
L1931524-02	SB02_8.0-8.5	SOIL	BROOKLYN, NY	07/17/19 15:30	07/17/19
L1931524-03	SB01_8.0-8.5	SOIL	BROOKLYN, NY	07/17/19 14:30	07/17/19
L1931524-04	SB09_3.0-3.5	SOIL	BROOKLYN, NY	07/17/19 08:40	07/17/19
L1931524-05	SB11_5.0-5.5	SOIL	BROOKLYN, NY	07/17/19 10:40	07/17/19
L1931524-06	TMW04_071719	WATER	BROOKLYN, NY	07/17/19 13:00	07/17/19
L1931524-07	TMW01_071719	WATER	BROOKLYN, NY	07/17/19 13:25	07/17/19
L1931524-08	TMW03_071719	WATER	BROOKLYN, NY	07/17/19 11:00	07/17/19
L1931524-09	TMW04_071719 (UF SVOC)	WATER	BROOKLYN, NY	07/17/19 13:00	07/17/19
L1931524-10	TMW01_071719 (UF SVOC)	WATER	BROOKLYN, NY	07/17/19 13:25	07/17/19
L1931524-11	TMW03_071719 (UF SVOC)	WATER	BROOKLYN, NY	07/17/19 11:00	07/17/19

Project Name:	450 JOHNSON AVE.	**Lab Number:**	L1931524
Project Number:	170588001	**Report Date:**	08/02/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	450 JOHNSON AVE.	**Lab Number:**	L1931524
Project Number:	170588001	**Report Date:**	08/02/19

Case Narrative (continued)

Report Submission

August 02, 2019: This final report includes the results of all requested analyses.

July 19, 2019: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

The analyses performed were specified by the client.

L1931524-06, -07 and -08: The Client IDs were specified by the client.

L1931524-06, -07 and -08: The sample was received above the appropriate pH for the Dissolved Metals analysis. The laboratory added additional HNO3 to a pH <2.

L1931524-06, -07 and -08: At the client's request, unfiltered Semivolatile Organics analysis was performed; the results are reported as L1931524-09, -10 and -11, respectively.

Semivolatile Organics

The WG1261662-2/-3 LCS/LCSD recoveries, associated with L1931524-09 through -11, are below the acceptance criteria for benzoic acid (0%/0%); however, it has been identified as a "difficult" analyte. The results of the associated samples are reported.

Total Metals

L1931524-01 through -05: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by matrix interferences encountered during analysis.

Dissolved Metals

The WG1261422-3 MS recoveries, performed on L1931524-08, are outside the acceptance criteria for antimony (144%) and manganese (126%). A post digestion spike was performed and was within acceptance

Project Name:	450 JOHNSON AVE.	**Lab Number:**	L1931524
Project Number:	170588001	**Report Date:**	08/02/19

Case Narrative (continued)

criteria.

The WG1261422-3 MS recoveries for calcium (153%), iron (270%) and magnesium (141%), performed on L1931524-08, do not apply because the sample concentrations are greater than four times the spike amounts added.

The WG1261422-4 Laboratory Duplicate RPDs for arsenic (29%), performed on L1931524-08, is above the acceptance criteria; however, the sample and duplicate results are less than five times the reporting limit. Therefore, the RPD is valid.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Lisa Westerlind

Title: Technical Director/Representative Date: 08/02/19

ORGANICS

VOLATILES

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-01
Client ID: SB01_1.0-1.5
Sample Location: BROOKLYN, NY

Date Collected: 07/17/19 14:25
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/18/19 07:26
Analyst: MV
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.5	2.5	1
1,1-Dichloroethane	ND		ug/kg	1.1	0.16	1
Chloroform	ND		ug/kg	1.7	0.16	1
Carbon tetrachloride	ND		ug/kg	1.1	0.25	1
1,2-Dichloropropane	ND		ug/kg	1.1	0.14	1
Dibromochloromethane	ND		ug/kg	1.1	0.16	1
1,1,2-Trichloroethane	ND		ug/kg	1.1	0.30	1
Tetrachloroethene	ND		ug/kg	0.55	0.22	1
Chlorobenzene	ND		ug/kg	0.55	0.14	1
Trichlorofluoromethane	ND		ug/kg	4.4	0.77	1
1,2-Dichloroethane	ND		ug/kg	1.1	0.28	1
1,1,1-Trichloroethane	ND		ug/kg	0.55	0.18	1
Bromodichloromethane	ND		ug/kg	0.55	0.12	1
trans-1,3-Dichloropropene	ND		ug/kg	1.1	0.30	1
cis-1,3-Dichloropropene	ND		ug/kg	0.55	0.18	1
1,3-Dichloropropene, Total	ND		ug/kg	0.55	0.18	1
1,1-Dichloropropene	ND		ug/kg	0.55	0.18	1
Bromoform	ND		ug/kg	4.4	0.27	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.55	0.18	1
Benzene	ND		ug/kg	0.55	0.18	1
Toluene	ND		ug/kg	1.1	0.60	1
Ethylbenzene	ND		ug/kg	1.1	0.16	1
Chloromethane	ND		ug/kg	4.4	1.0	1
Bromomethane	ND		ug/kg	2.2	0.64	1
Vinyl chloride	ND		ug/kg	1.1	0.37	1
Chloroethane	ND		ug/kg	2.2	0.50	1
1,1-Dichloroethene	ND		ug/kg	1.1	0.26	1
trans-1,2-Dichloroethene	ND		ug/kg	1.7	0.15	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-01 Date Collected: 07/17/19 14:25

Client ID: SB01_1.0-1.5 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.55	0.15	1
1,2-Dichlorobenzene	ND		ug/kg	2.2	0.16	1
1,3-Dichlorobenzene	ND		ug/kg	2.2	0.16	1
1,4-Dichlorobenzene	ND		ug/kg	2.2	0.19	1
Methyl tert butyl ether	ND		ug/kg	2.2	0.22	1
p/m-Xylene	ND		ug/kg	2.2	0.62	1
o-Xylene	ND		ug/kg	1.1	0.32	1
Xylenes, Total	ND		ug/kg	1.1	0.32	1
cis-1,2-Dichloroethene	ND		ug/kg	1.1	0.19	1
1,2-Dichloroethene, Total	ND		ug/kg	1.1	0.15	1
Dibromomethane	ND		ug/kg	2.2	0.26	1
Styrene	ND		ug/kg	1.1	0.22	1
Dichlorodifluoromethane	ND		ug/kg	11	1.0	1
Acetone	11		ug/kg	11	5.3	1
Carbon disulfide	ND		ug/kg	11	5.0	1
2-Butanone	ND		ug/kg	11	2.4	1
Vinyl acetate	ND		ug/kg	11	2.4	1
4-Methyl-2-pentanone	ND		ug/kg	11	1.4	1
1,2,3-Trichloropropane	ND		ug/kg	2.2	0.14	1
2-Hexanone	ND		ug/kg	11	1.3	1
Bromochloromethane	ND		ug/kg	2.2	0.23	1
2,2-Dichloropropane	ND		ug/kg	2.2	0.22	1
1,2-Dibromoethane	ND		ug/kg	1.1	0.31	1
1,3-Dichloropropane	ND		ug/kg	2.2	0.18	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.55	0.15	1
Bromobenzene	ND		ug/kg	2.2	0.16	1
n-Butylbenzene	ND		ug/kg	1.1	0.18	1
sec-Butylbenzene	ND		ug/kg	1.1	0.16	1
tert-Butylbenzene	ND		ug/kg	2.2	0.13	1
o-Chlorotoluene	ND		ug/kg	2.2	0.21	1
p-Chlorotoluene	ND		ug/kg	2.2	0.12	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.3	1.1	1
Hexachlorobutadiene	ND		ug/kg	4.4	0.19	1
Isopropylbenzene	ND		ug/kg	1.1	0.12	1
p-Isopropyltoluene	ND		ug/kg	1.1	0.12	1
Naphthalene	ND		ug/kg	4.4	0.72	1
Acrylonitrile	ND		ug/kg	4.4	1.3	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-01 Date Collected: 07/17/19 14:25

Client ID: SB01_1.0-1.5 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.1	0.19	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.2	0.36	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.2	0.30	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.2	0.21	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.2	0.37	1
1,4-Dioxane	ND		ug/kg	89	39.	1
p-Diethylbenzene	ND		ug/kg	2.2	0.20	1
p-Ethyltoluene	ND		ug/kg	2.2	0.42	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.2	0.21	1
Ethyl ether	ND		ug/kg	2.2	0.38	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.5	1.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	94		70-130

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-02 Date Collected: 07/17/19 15:30
Client ID: SB02_8.0-8.5 Date Received: 07/17/19
Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/18/19 07:51
Analyst: MV
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.8	2.6	1
1,1-Dichloroethane	ND		ug/kg	1.2	0.17	1
Chloroform	ND		ug/kg	1.7	0.16	1
Carbon tetrachloride	ND		ug/kg	1.2	0.27	1
1,2-Dichloropropane	ND		ug/kg	1.2	0.14	1
Dibromochloromethane	ND		ug/kg	1.2	0.16	1
1,1,2-Trichloroethane	ND		ug/kg	1.2	0.31	1
Tetrachloroethene	ND		ug/kg	0.58	0.23	1
Chlorobenzene	ND		ug/kg	0.58	0.15	1
Trichlorofluoromethane	ND		ug/kg	4.6	0.80	1
1,2-Dichloroethane	ND		ug/kg	1.2	0.30	1
1,1,1-Trichloroethane	ND		ug/kg	0.58	0.19	1
Bromodichloromethane	ND		ug/kg	0.58	0.13	1
trans-1,3-Dichloropropene	ND		ug/kg	1.2	0.32	1
cis-1,3-Dichloropropene	ND		ug/kg	0.58	0.18	1
1,3-Dichloropropene, Total	ND		ug/kg	0.58	0.18	1
1,1-Dichloropropene	ND		ug/kg	0.58	0.18	1
Bromoform	ND		ug/kg	4.6	0.28	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.58	0.19	1
Benzene	ND		ug/kg	0.58	0.19	1
Toluene	ND		ug/kg	1.2	0.63	1
Ethylbenzene	ND		ug/kg	1.2	0.16	1
Chloromethane	ND		ug/kg	4.6	1.1	1
Bromomethane	ND		ug/kg	2.3	0.67	1
Vinyl chloride	ND		ug/kg	1.2	0.39	1
Chloroethane	ND		ug/kg	2.3	0.52	1
1,1-Dichloroethene	ND		ug/kg	1.2	0.28	1
trans-1,2-Dichloroethene	ND		ug/kg	1.7	0.16	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-02 Date Collected: 07/17/19 15:30

Client ID: SB02_8.0-8.5 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	0.19	J	ug/kg	0.58	0.16	1
1,2-Dichlorobenzene	ND		ug/kg	2.3	0.17	1
1,3-Dichlorobenzene	ND		ug/kg	2.3	0.17	1
1,4-Dichlorobenzene	ND		ug/kg	2.3	0.20	1
Methyl tert butyl ether	ND		ug/kg	2.3	0.23	1
p/m-Xylene	ND		ug/kg	2.3	0.65	1
o-Xylene	ND		ug/kg	1.2	0.34	1
Xylenes, Total	ND		ug/kg	1.2	0.34	1
cis-1,2-Dichloroethene	ND		ug/kg	1.2	0.20	1
1,2-Dichloroethene, Total	ND		ug/kg	1.2	0.16	1
Dibromomethane	ND		ug/kg	2.3	0.28	1
Styrene	ND		ug/kg	1.2	0.23	1
Dichlorodifluoromethane	ND		ug/kg	12	1.1	1
Acetone	ND		ug/kg	12	5.6	1
Carbon disulfide	ND		ug/kg	12	5.3	1
2-Butanone	ND		ug/kg	12	2.6	1
Vinyl acetate	ND		ug/kg	12	2.5	1
4-Methyl-2-pentanone	ND		ug/kg	12	1.5	1
1,2,3-Trichloropropane	ND		ug/kg	2.3	0.15	1
2-Hexanone	ND		ug/kg	12	1.4	1
Bromochloromethane	ND		ug/kg	2.3	0.24	1
2,2-Dichloropropane	ND		ug/kg	2.3	0.23	1
1,2-Dibromoethane	ND		ug/kg	1.2	0.32	1
1,3-Dichloropropane	ND		ug/kg	2.3	0.19	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.58	0.15	1
Bromobenzene	ND		ug/kg	2.3	0.17	1
n-Butylbenzene	ND		ug/kg	1.2	0.19	1
sec-Butylbenzene	ND		ug/kg	1.2	0.17	1
tert-Butylbenzene	ND		ug/kg	2.3	0.14	1
o-Chlorotoluene	ND		ug/kg	2.3	0.22	1
p-Chlorotoluene	ND		ug/kg	2.3	0.12	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.5	1.2	1
Hexachlorobutadiene	ND		ug/kg	4.6	0.20	1
Isopropylbenzene	ND		ug/kg	1.2	0.13	1
p-Isopropyltoluene	ND		ug/kg	1.2	0.13	1
Naphthalene	ND		ug/kg	4.6	0.75	1
Acrylonitrile	ND		ug/kg	4.6	1.3	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-02 Date Collected: 07/17/19 15:30

Client ID: SB02_8.0-8.5 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.2	0.20	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.3	0.37	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.3	0.32	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.3	0.22	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.3	0.39	1
1,4-Dioxane	ND		ug/kg	93	41.	1
p-Diethylbenzene	ND		ug/kg	2.3	0.20	1
p-Ethyltoluene	ND		ug/kg	2.3	0.44	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.3	0.22	1
Ethyl ether	ND		ug/kg	2.3	0.40	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.8	1.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	94		70-130

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-03 Date Collected: 07/17/19 14:30
Client ID: SB01_8.0-8.5 Date Received: 07/17/19
Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/18/19 08:17
Analyst: MV
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	4.8	2.2	1
1,1-Dichloroethane	ND		ug/kg	0.95	0.14	1
Chloroform	ND		ug/kg	1.4	0.13	1
Carbon tetrachloride	ND		ug/kg	0.95	0.22	1
1,2-Dichloropropane	ND		ug/kg	0.95	0.12	1
Dibromochloromethane	ND		ug/kg	0.95	0.13	1
1,1,2-Trichloroethane	ND		ug/kg	0.95	0.25	1
Tetrachloroethene	ND		ug/kg	0.48	0.19	1
Chlorobenzene	ND		ug/kg	0.48	0.12	1
Trichlorofluoromethane	ND		ug/kg	3.8	0.66	1
1,2-Dichloroethane	ND		ug/kg	0.95	0.24	1
1,1,1-Trichloroethane	ND		ug/kg	0.48	0.16	1
Bromodichloromethane	ND		ug/kg	0.48	0.10	1
trans-1,3-Dichloropropene	ND		ug/kg	0.95	0.26	1
cis-1,3-Dichloropropene	ND		ug/kg	0.48	0.15	1
1,3-Dichloropropene, Total	ND		ug/kg	0.48	0.15	1
1,1-Dichloropropene	ND		ug/kg	0.48	0.15	1
Bromoform	ND		ug/kg	3.8	0.23	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.48	0.16	1
Benzene	ND		ug/kg	0.48	0.16	1
Toluene	ND		ug/kg	0.95	0.52	1
Ethylbenzene	ND		ug/kg	0.95	0.13	1
Chloromethane	ND		ug/kg	3.8	0.89	1
Bromomethane	ND		ug/kg	1.9	0.55	1
Vinyl chloride	ND		ug/kg	0.95	0.32	1
Chloroethane	ND		ug/kg	1.9	0.43	1
1,1-Dichloroethene	ND		ug/kg	0.95	0.23	1
trans-1,2-Dichloroethene	ND		ug/kg	1.4	0.13	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-03 Date Collected: 07/17/19 14:30

Client ID: SB01_8.0-8.5 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.48	0.13	1
1,2-Dichlorobenzene	ND		ug/kg	1.9	0.14	1
1,3-Dichlorobenzene	ND		ug/kg	1.9	0.14	1
1,4-Dichlorobenzene	ND		ug/kg	1.9	0.16	1
Methyl tert butyl ether	0.20	J	ug/kg	1.9	0.19	1
p/m-Xylene	ND		ug/kg	1.9	0.53	1
o-Xylene	ND		ug/kg	0.95	0.28	1
Xylenes, Total	ND		ug/kg	0.95	0.28	1
cis-1,2-Dichloroethene	ND		ug/kg	0.95	0.17	1
1,2-Dichloroethene, Total	ND		ug/kg	0.95	0.13	1
Dibromomethane	ND		ug/kg	1.9	0.23	1
Styrene	ND		ug/kg	0.95	0.19	1
Dichlorodifluoromethane	ND		ug/kg	9.5	0.87	1
Acetone	6.2	J	ug/kg	9.5	4.6	1
Carbon disulfide	ND		ug/kg	9.5	4.3	1
2-Butanone	ND		ug/kg	9.5	2.1	1
Vinyl acetate	ND		ug/kg	9.5	2.0	1
4-Methyl-2-pentanone	ND		ug/kg	9.5	1.2	1
1,2,3-Trichloropropane	ND		ug/kg	1.9	0.12	1
2-Hexanone	ND		ug/kg	9.5	1.1	1
Bromochloromethane	ND		ug/kg	1.9	0.20	1
2,2-Dichloropropane	ND		ug/kg	1.9	0.19	1
1,2-Dibromoethane	ND		ug/kg	0.95	0.26	1
1,3-Dichloropropane	ND		ug/kg	1.9	0.16	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.48	0.12	1
Bromobenzene	ND		ug/kg	1.9	0.14	1
n-Butylbenzene	ND		ug/kg	0.95	0.16	1
sec-Butylbenzene	ND		ug/kg	0.95	0.14	1
tert-Butylbenzene	ND		ug/kg	1.9	0.11	1
o-Chlorotoluene	ND		ug/kg	1.9	0.18	1
p-Chlorotoluene	ND		ug/kg	1.9	0.10	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.8	0.95	1
Hexachlorobutadiene	ND		ug/kg	3.8	0.16	1
Isopropylbenzene	ND		ug/kg	0.95	0.10	1
p-Isopropyltoluene	ND		ug/kg	0.95	0.10	1
Naphthalene	ND		ug/kg	3.8	0.62	1
Acrylonitrile	ND		ug/kg	3.8	1.1	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-03 Date Collected: 07/17/19 14:30

Client ID: SB01_8.0-8.5 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	0.95	0.16	1
1,2,3-Trichlorobenzene	ND		ug/kg	1.9	0.31	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.9	0.26	1
1,3,5-Trimethylbenzene	ND		ug/kg	1.9	0.18	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.9	0.32	1
1,4-Dioxane	ND		ug/kg	76	33.	1
p-Diethylbenzene	ND		ug/kg	1.9	0.17	1
p-Ethyltoluene	ND		ug/kg	1.9	0.36	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	1.9	0.18	1
Ethyl ether	ND		ug/kg	1.9	0.32	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	4.8	1.4	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	95		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	96		70-130

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-04 Date Collected: 07/17/19 08:40
Client ID: SB09_3.0-3.5 Date Received: 07/17/19
Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/18/19 08:43
Analyst: MV
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.4	2.5	1
1,1-Dichloroethane	ND		ug/kg	1.1	0.16	1
Chloroform	ND		ug/kg	1.6	0.15	1
Carbon tetrachloride	ND		ug/kg	1.1	0.25	1
1,2-Dichloropropane	ND		ug/kg	1.1	0.13	1
Dibromochloromethane	ND		ug/kg	1.1	0.15	1
1,1,2-Trichloroethane	ND		ug/kg	1.1	0.29	1
Tetrachloroethene	ND		ug/kg	0.54	0.21	1
Chlorobenzene	ND		ug/kg	0.54	0.14	1
Trichlorofluoromethane	ND		ug/kg	4.3	0.75	1
1,2-Dichloroethane	ND		ug/kg	1.1	0.28	1
1,1,1-Trichloroethane	ND		ug/kg	0.54	0.18	1
Bromodichloromethane	ND		ug/kg	0.54	0.12	1
trans-1,3-Dichloropropene	ND		ug/kg	1.1	0.29	1
cis-1,3-Dichloropropene	ND		ug/kg	0.54	0.17	1
1,3-Dichloropropene, Total	ND		ug/kg	0.54	0.17	1
1,1-Dichloropropene	ND		ug/kg	0.54	0.17	1
Bromoform	ND		ug/kg	4.3	0.26	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.54	0.18	1
Benzene	ND		ug/kg	0.54	0.18	1
Toluene	ND		ug/kg	1.1	0.58	1
Ethylbenzene	ND		ug/kg	1.1	0.15	1
Chloromethane	ND		ug/kg	4.3	1.0	1
Bromomethane	ND		ug/kg	2.1	0.62	1
Vinyl chloride	ND		ug/kg	1.1	0.36	1
Chloroethane	ND		ug/kg	2.1	0.48	1
1,1-Dichloroethene	ND		ug/kg	1.1	0.26	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	0.15	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-04 Date Collected: 07/17/19 08:40

Client ID: SB09_3.0-3.5 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.54	0.15	1
1,2-Dichlorobenzene	ND		ug/kg	2.1	0.15	1
1,3-Dichlorobenzene	ND		ug/kg	2.1	0.16	1
1,4-Dichlorobenzene	ND		ug/kg	2.1	0.18	1
Methyl tert butyl ether	ND		ug/kg	2.1	0.22	1
p/m-Xylene	ND		ug/kg	2.1	0.60	1
o-Xylene	ND		ug/kg	1.1	0.31	1
Xylenes, Total	ND		ug/kg	1.1	0.31	1
cis-1,2-Dichloroethene	ND		ug/kg	1.1	0.19	1
1,2-Dichloroethene, Total	ND		ug/kg	1.1	0.15	1
Dibromomethane	ND		ug/kg	2.1	0.26	1
Styrene	ND		ug/kg	1.1	0.21	1
Dichlorodifluoromethane	ND		ug/kg	11	0.98	1
Acetone	13		ug/kg	11	5.2	1
Carbon disulfide	ND		ug/kg	11	4.9	1
2-Butanone	ND		ug/kg	11	2.4	1
Vinyl acetate	ND		ug/kg	11	2.3	1
4-Methyl-2-pentanone	ND		ug/kg	11	1.4	1
1,2,3-Trichloropropane	ND		ug/kg	2.1	0.14	1
2-Hexanone	ND		ug/kg	11	1.3	1
Bromochloromethane	ND		ug/kg	2.1	0.22	1
2,2-Dichloropropane	ND		ug/kg	2.1	0.22	1
1,2-Dibromoethane	ND		ug/kg	1.1	0.30	1
1,3-Dichloropropane	ND		ug/kg	2.1	0.18	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.54	0.14	1
Bromobenzene	ND		ug/kg	2.1	0.16	1
n-Butylbenzene	ND		ug/kg	1.1	0.18	1
sec-Butylbenzene	ND		ug/kg	1.1	0.16	1
tert-Butylbenzene	ND		ug/kg	2.1	0.13	1
o-Chlorotoluene	ND		ug/kg	2.1	0.20	1
p-Chlorotoluene	ND		ug/kg	2.1	0.12	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.2	1.1	1
Hexachlorobutadiene	ND		ug/kg	4.3	0.18	1
Isopropylbenzene	ND		ug/kg	1.1	0.12	1
p-Isopropyltoluene	ND		ug/kg	1.1	0.12	1
Naphthalene	ND		ug/kg	4.3	0.70	1
Acrylonitrile	ND		ug/kg	4.3	1.2	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-04 Date Collected: 07/17/19 08:40

Client ID: SB09_3.0-3.5 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.1	0.18	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.1	0.34	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.1	0.29	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.1	0.21	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.1	0.36	1
1,4-Dioxane	ND		ug/kg	86	38.	1
p-Diethylbenzene	ND		ug/kg	2.1	0.19	1
p-Ethyltoluene	ND		ug/kg	2.1	0.41	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.1	0.20	1
Ethyl ether	ND		ug/kg	2.1	0.37	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.4	1.5	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	97		70-130

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-05 Date Collected: 07/17/19 10:40
Client ID: SB11_5.0-5.5 Date Received: 07/17/19
Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/18/19 09:08
Analyst: MV
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.4	2.5	1
1,1-Dichloroethane	ND		ug/kg	1.1	0.16	1
Chloroform	ND		ug/kg	1.6	0.15	1
Carbon tetrachloride	ND		ug/kg	1.1	0.25	1
1,2-Dichloropropane	ND		ug/kg	1.1	0.14	1
Dibromochloromethane	ND		ug/kg	1.1	0.15	1
1,1,2-Trichloroethane	ND		ug/kg	1.1	0.29	1
Tetrachloroethene	ND		ug/kg	0.54	0.21	1
Chlorobenzene	ND		ug/kg	0.54	0.14	1
Trichlorofluoromethane	ND		ug/kg	4.3	0.75	1
1,2-Dichloroethane	ND		ug/kg	1.1	0.28	1
1,1,1-Trichloroethane	ND		ug/kg	0.54	0.18	1
Bromodichloromethane	ND		ug/kg	0.54	0.12	1
trans-1,3-Dichloropropene	ND		ug/kg	1.1	0.30	1
cis-1,3-Dichloropropene	ND		ug/kg	0.54	0.17	1
1,3-Dichloropropene, Total	ND		ug/kg	0.54	0.17	1
1,1-Dichloropropene	ND		ug/kg	0.54	0.17	1
Bromoform	ND		ug/kg	4.3	0.26	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.54	0.18	1
Benzene	ND		ug/kg	0.54	0.18	1
Toluene	ND		ug/kg	1.1	0.59	1
Ethylbenzene	ND		ug/kg	1.1	0.15	1
Chloromethane	ND		ug/kg	4.3	1.0	1
Bromomethane	ND		ug/kg	2.2	0.63	1
Vinyl chloride	ND		ug/kg	1.1	0.36	1
Chloroethane	ND		ug/kg	2.2	0.49	1
1,1-Dichloroethene	ND		ug/kg	1.1	0.26	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	0.15	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-05 Date Collected: 07/17/19 10:40

Client ID: SB11_5.0-5.5 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	2.4		ug/kg	0.54	0.15	1
1,2-Dichlorobenzene	ND		ug/kg	2.2	0.16	1
1,3-Dichlorobenzene	ND		ug/kg	2.2	0.16	1
1,4-Dichlorobenzene	ND		ug/kg	2.2	0.18	1
Methyl tert butyl ether	0.23	J	ug/kg	2.2	0.22	1
p/m-Xylene	ND		ug/kg	2.2	0.60	1
o-Xylene	ND		ug/kg	1.1	0.31	1
Xylenes, Total	ND		ug/kg	1.1	0.31	1
cis-1,2-Dichloroethene	ND		ug/kg	1.1	0.19	1
1,2-Dichloroethene, Total	ND		ug/kg	1.1	0.15	1
Dibromomethane	ND		ug/kg	2.2	0.26	1
Styrene	ND		ug/kg	1.1	0.21	1
Dichlorodifluoromethane	ND		ug/kg	11	0.99	1
Acetone	15		ug/kg	11	5.2	1
Carbon disulfide	ND		ug/kg	11	4.9	1
2-Butanone	ND		ug/kg	11	2.4	1
Vinyl acetate	ND		ug/kg	11	2.3	1
4-Methyl-2-pentanone	ND		ug/kg	11	1.4	1
1,2,3-Trichloropropane	ND		ug/kg	2.2	0.14	1
2-Hexanone	ND		ug/kg	11	1.3	1
Bromochloromethane	ND		ug/kg	2.2	0.22	1
2,2-Dichloropropane	ND		ug/kg	2.2	0.22	1
1,2-Dibromoethane	ND		ug/kg	1.1	0.30	1
1,3-Dichloropropane	ND		ug/kg	2.2	0.18	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.54	0.14	1
Bromobenzene	ND		ug/kg	2.2	0.16	1
n-Butylbenzene	ND		ug/kg	1.1	0.18	1
sec-Butylbenzene	ND		ug/kg	1.1	0.16	1
tert-Butylbenzene	ND		ug/kg	2.2	0.13	1
o-Chlorotoluene	ND		ug/kg	2.2	0.21	1
p-Chlorotoluene	ND		ug/kg	2.2	0.12	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.2	1.1	1
Hexachlorobutadiene	ND		ug/kg	4.3	0.18	1
Isopropylbenzene	ND		ug/kg	1.1	0.12	1
p-Isopropyltoluene	ND		ug/kg	1.1	0.12	1
Naphthalene	ND		ug/kg	4.3	0.70	1
Acrylonitrile	ND		ug/kg	4.3	1.2	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-05 Date Collected: 07/17/19 10:40

Client ID: SB11_5.0-5.5 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.1	0.18	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.2	0.35	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.2	0.29	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.2	0.21	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.2	0.36	1
1,4-Dioxane	ND		ug/kg	86	38.	1
p-Diethylbenzene	ND		ug/kg	2.2	0.19	1
p-Ethyltoluene	ND		ug/kg	2.2	0.42	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.2	0.21	1
Ethyl ether	ND		ug/kg	2.2	0.37	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.4	1.5	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	96		70-130

Project Name: 450 JOHNSON AVE.
Lab Number: L1931524
Project Number: 170588001
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-06
Client ID: TMW04_071719
Sample Location: BROOKLYN, NY
Date Collected: 07/17/19 13:00
Date Received: 07/17/19
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/18/19 09:39
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14	1
1,1-Dichloropropene	ND		ug/l	2.5	0.70	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	0.19	J	ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	31		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-06 Date Collected: 07/17/19 13:00

Client ID: TMW04_071719 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: None

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	11		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
Xylenes, Total	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
1,2-Dichloroethene, Total	ND		ug/l	2.5	0.70	1
Dibromomethane	ND		ug/l	5.0	1.0	1
1,2,3-Trichloropropane	ND		ug/l	2.5	0.70	1
Acrylonitrile	ND		ug/l	5.0	1.5	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	2.2	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
Vinyl acetate	ND		ug/l	5.0	1.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
2,2-Dichloropropane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,3-Dichloropropane	ND		ug/l	2.5	0.70	1
1,1,1,2-Tetrachloroethane	ND		ug/l	2.5	0.70	1
Bromobenzene	ND		ug/l	2.5	0.70	1
n-Butylbenzene	9.4		ug/l	2.5	0.70	1
sec-Butylbenzene	7.3		ug/l	2.5	0.70	1
tert-Butylbenzene	1.1	J	ug/l	2.5	0.70	1
o-Chlorotoluene	ND		ug/l	2.5	0.70	1
p-Chlorotoluene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Hexachlorobutadiene	ND		ug/l	2.5	0.70	1
Isopropylbenzene	6.6		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
Naphthalene	3.0		ug/l	2.5	0.70	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-06 Date Collected: 07/17/19 13:00

Client ID: TMW04_071719 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: None

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
n-Propylbenzene	7.0		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,4-Dioxane	ND		ug/l	250	61.	1
p-Diethylbenzene	7.2		ug/l	2.0	0.70	1
p-Ethyltoluene	ND		ug/l	2.0	0.70	1
1,2,4,5-Tetramethylbenzene	34		ug/l	2.0	0.54	1
Ethyl ether	ND		ug/l	2.5	0.70	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.70	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	97		70-130

Project Name: 450 JOHNSON AVE.
Lab Number: L1931524
Project Number: 170588001
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-07
Client ID: TMW01_071719
Sample Location: BROOKLYN, NY
Date Collected: 07/17/19 13:25
Date Received: 07/17/19
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/18/19 10:36
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14	1
1,1-Dichloropropene	ND		ug/l	2.5	0.70	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	0.08	J	ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-07 Date Collected: 07/17/19 13:25

Client ID: TMW01_071719 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: None

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	2.4	J	ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
Xylenes, Total	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	1.5	J	ug/l	2.5	0.70	1
1,2-Dichloroethene, Total	1.5	J	ug/l	2.5	0.70	1
Dibromomethane	ND		ug/l	5.0	1.0	1
1,2,3-Trichloropropane	ND		ug/l	2.5	0.70	1
Acrylonitrile	ND		ug/l	5.0	1.5	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
Vinyl acetate	ND		ug/l	5.0	1.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
2,2-Dichloropropane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,3-Dichloropropane	ND		ug/l	2.5	0.70	1
1,1,1,2-Tetrachloroethane	ND		ug/l	2.5	0.70	1
Bromobenzene	ND		ug/l	2.5	0.70	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
o-Chlorotoluene	ND		ug/l	2.5	0.70	1
p-Chlorotoluene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Hexachlorobutadiene	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
Naphthalene	ND		ug/l	2.5	0.70	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-07 Date Collected: 07/17/19 13:25

Client ID: TMW01_071719 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: None

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,4-Dioxane	ND		ug/l	250	61.	1
p-Diethylbenzene	ND		ug/l	2.0	0.70	1
p-Ethyltoluene	ND		ug/l	2.0	0.70	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	0.54	1
Ethyl ether	ND		ug/l	2.5	0.70	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.70	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	74		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	93		70-130

Project Name: 450 JOHNSON AVE.
Project Number: 170588001
Lab Number: L1931524
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-08
Client ID: TMW03_071719
Sample Location: BROOKLYN, NY

Date Collected: 07/17/19 11:00
Date Received: 07/17/19
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/18/19 10:08
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	0.93	J	ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14	1
1,1-Dichloropropene	ND		ug/l	2.5	0.70	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	0.24	J	ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	0.38	J	ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-08 Date Collected: 07/17/19 11:00

Client ID: TMW03_071719 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: None

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	15		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
Xylenes, Total	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
1,2-Dichloroethene, Total	ND		ug/l	2.5	0.70	1
Dibromomethane	ND		ug/l	5.0	1.0	1
1,2,3-Trichloropropane	ND		ug/l	2.5	0.70	1
Acrylonitrile	ND		ug/l	5.0	1.5	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	4.2	J	ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
Vinyl acetate	ND		ug/l	5.0	1.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
2,2-Dichloropropane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,3-Dichloropropane	ND		ug/l	2.5	0.70	1
1,1,1,2-Tetrachloroethane	ND		ug/l	2.5	0.70	1
Bromobenzene	ND		ug/l	2.5	0.70	1
n-Butylbenzene	1.5	J	ug/l	2.5	0.70	1
sec-Butylbenzene	1.7	J	ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
o-Chlorotoluene	ND		ug/l	2.5	0.70	1
p-Chlorotoluene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Hexachlorobutadiene	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
Naphthalene	0.81	J	ug/l	2.5	0.70	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-08 Date Collected: 07/17/19 11:00

Client ID: TMW03_071719 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: None

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,4-Dioxane	ND		ug/l	250	61.	1
p-Diethylbenzene	1.9	J	ug/l	2.0	0.70	1
p-Ethyltoluene	ND		ug/l	2.0	0.70	1
1,2,4,5-Tetramethylbenzene	7.6		ug/l	2.0	0.54	1
Ethyl ether	ND		ug/l	2.5	0.70	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.70	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	75		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	92		70-130

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/18/19 06:34
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-05 Batch: WG1261466-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	ND		ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
1,2-Dichloropropane	ND		ug/kg	1.0	0.12
Dibromochloromethane	ND		ug/kg	1.0	0.14
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.27
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
Trichlorofluoromethane	ND		ug/kg	4.0	0.70
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Bromodichloromethane	ND		ug/kg	0.50	0.11
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.27
cis-1,3-Dichloropropene	ND		ug/kg	0.50	0.16
1,3-Dichloropropene, Total	ND		ug/kg	0.50	0.16
1,1-Dichloropropene	ND		ug/kg	0.50	0.16
Bromoform	ND		ug/kg	4.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Chloromethane	ND		ug/kg	4.0	0.93
Bromomethane	ND		ug/kg	2.0	0.58
Vinyl chloride	ND		ug/kg	1.0	0.34
Chloroethane	ND		ug/kg	2.0	0.45
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/18/19 06:34
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-05 Batch: WG1261466-5					
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
Xylenes, Total	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
1,2-Dichloroethene, Total	ND		ug/kg	1.0	0.14
Dibromomethane	ND		ug/kg	2.0	0.24
Styrene	ND		ug/kg	1.0	0.20
Dichlorodifluoromethane	ND		ug/kg	10	0.92
Acetone	ND		ug/kg	10	4.8
Carbon disulfide	ND		ug/kg	10	4.6
2-Butanone	ND		ug/kg	10	2.2
Vinyl acetate	ND		ug/kg	10	2.2
4-Methyl-2-pentanone	ND		ug/kg	10	1.3
1,2,3-Trichloropropane	ND		ug/kg	2.0	0.13
2-Hexanone	ND		ug/kg	10	1.2
Bromochloromethane	ND		ug/kg	2.0	0.20
2,2-Dichloropropane	ND		ug/kg	2.0	0.20
1,2-Dibromoethane	ND		ug/kg	1.0	0.28
1,3-Dichloropropane	ND		ug/kg	2.0	0.17
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	0.13
Bromobenzene	ND		ug/kg	2.0	0.14
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
o-Chlorotoluene	ND		ug/kg	2.0	0.19

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/18/19 06:34
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 01-05 Batch: WG1261466-5					
p-Chlorotoluene	ND		ug/kg	2.0	0.11
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	1.0
Hexachlorobutadiene	ND		ug/kg	4.0	0.17
Isopropylbenzene	ND		ug/kg	1.0	0.11
p-Isopropyltoluene	ND		ug/kg	1.0	0.11
Naphthalene	ND		ug/kg	4.0	0.65
Acrylonitrile	ND		ug/kg	4.0	1.2
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	0.32
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	0.27
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
1,4-Dioxane	ND		ug/kg	80	35.
p-Diethylbenzene	ND		ug/kg	2.0	0.18
p-Ethyltoluene	ND		ug/kg	2.0	0.38
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.0	0.19
Ethyl ether	ND		ug/kg	2.0	0.34
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	1.4

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	92		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	93		70-130

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/18/19 08:15
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 06-08 Batch: WG1261556-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14
1,1-Dichloropropene	ND		ug/l	2.5	0.70
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/18/19 08:15
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 06-08 Batch: WG1261556-5					
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.70
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
Xylenes, Total	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
1,2-Dichloroethene, Total	ND		ug/l	2.5	0.70
Dibromomethane	ND		ug/l	5.0	1.0
1,2,3-Trichloropropane	ND		ug/l	2.5	0.70
Acrylonitrile	ND		ug/l	5.0	1.5
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
Vinyl acetate	ND		ug/l	5.0	1.0
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
2,2-Dichloropropane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,3-Dichloropropane	ND		ug/l	2.5	0.70
1,1,1,2-Tetrachloroethane	ND		ug/l	2.5	0.70
Bromobenzene	ND		ug/l	2.5	0.70
n-Butylbenzene	ND		ug/l	2.5	0.70
sec-Butylbenzene	ND		ug/l	2.5	0.70
tert-Butylbenzene	ND		ug/l	2.5	0.70

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/18/19 08:15
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 06-08 Batch: WG1261556-5					
o-Chlorotoluene	ND		ug/l	2.5	0.70
p-Chlorotoluene	ND		ug/l	2.5	0.70
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Hexachlorobutadiene	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
p-Isopropyltoluene	ND		ug/l	2.5	0.70
Naphthalene	ND		ug/l	2.5	0.70
n-Propylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70
1,4-Dioxane	ND		ug/l	250	61.
p-Diethylbenzene	ND		ug/l	2.0	0.70
p-Ethyltoluene	ND		ug/l	2.0	0.70
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	0.54
Ethyl ether	ND		ug/l	2.5	0.70
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.70

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	100		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-05 Batch: WG1261466-3 WG1261466-4								
Methylene chloride	86		85		70-130	1		30
1,1-Dichloroethane	98		99		70-130	1		30
Chloroform	100		100		70-130	0		30
Carbon tetrachloride	100		99		70-130	1		30
1,2-Dichloropropane	102		101		70-130	1		30
Dibromochloromethane	95		93		70-130	2		30
1,1,2-Trichloroethane	102		99		70-130	3		30
Tetrachloroethene	98		94		70-130	4		30
Chlorobenzene	94		92		70-130	2		30
Trichlorofluoromethane	99		98		70-139	1		30
1,2-Dichloroethane	92		90		70-130	2		30
1,1,1-Trichloroethane	104		103		70-130	1		30
Bromodichloromethane	102		103		70-130	1		30
trans-1,3-Dichloropropene	100		98		70-130	2		30
cis-1,3-Dichloropropene	104		102		70-130	2		30
1,1-Dichloropropene	105		104		70-130	1		30
Bromoform	94		90		70-130	4		30
1,1,2,2-Tetrachloroethane	91		88		70-130	3		30
Benzene	101		100		70-130	1		30
Toluene	99		97		70-130	2		30
Ethylbenzene	103		100		70-130	3		30
Chloromethane	88		85		52-130	3		30
Bromomethane	98		100		57-147	2		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-05 Batch: WG1261466-3 WG1261466-4								
Vinyl chloride	103		102		67-130	1		30
Chloroethane	112		111		50-151	1		30
1,1-Dichloroethene	100		100		65-135	0		30
trans-1,2-Dichloroethene	99		100		70-130	1		30
Trichloroethene	103		103		70-130	0		30
1,2-Dichlorobenzene	88		86		70-130	2		30
1,3-Dichlorobenzene	89		87		70-130	2		30
1,4-Dichlorobenzene	89		86		70-130	3		30
Methyl tert butyl ether	88		88		66-130	0		30
p/m-Xylene	99		97		70-130	2		30
o-Xylene	99		96		70-130	3		30
cis-1,2-Dichloroethene	102		102		70-130	0		30
Dibromomethane	102		101		70-130	1		30
Styrene	99		95		70-130	4		30
Dichlorodifluoromethane	80		79		30-146	1		30
Acetone	68		66		54-140	3		30
Carbon disulfide	93		93		59-130	0		30
2-Butanone	**65**	Q	**67**	Q	70-130	3		30
Vinyl acetate	84		84		70-130	0		30
4-Methyl-2-pentanone	91		89		70-130	2		30
1,2,3-Trichloropropane	89		88		68-130	1		30
2-Hexanone	73		72		70-130	1		30
Bromochloromethane	100		95		70-130	5		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-05 Batch: WG1261466-3 WG1261466-4								
2,2-Dichloropropane	102		101		70-130	1		30
1,2-Dibromoethane	96		92		70-130	4		30
1,3-Dichloropropane	96		93		69-130	3		30
1,1,1,2-Tetrachloroethane	98		93		70-130	5		30
Bromobenzene	90		88		70-130	2		30
n-Butylbenzene	101		98		70-130	3		30
sec-Butylbenzene	93		91		70-130	2		30
tert-Butylbenzene	92		90		70-130	2		30
o-Chlorotoluene	80		80		70-130	0		30
p-Chlorotoluene	96		94		70-130	2		30
1,2-Dibromo-3-chloropropane	79		80		68-130	1		30
Hexachlorobutadiene	109		103		67-130	6		30
Isopropylbenzene	92		91		70-130	1		30
p-Isopropyltoluene	94		92		70-130	2		30
Naphthalene	82		78		70-130	5		30
Acrylonitrile	81		82		70-130	1		30
n-Propylbenzene	98		96		70-130	2		30
1,2,3-Trichlorobenzene	89		84		70-130	6		30
1,2,4-Trichlorobenzene	92		89		70-130	3		30
1,3,5-Trimethylbenzene	93		91		70-130	2		30
1,2,4-Trimethylbenzene	92		90		70-130	2		30
1,4-Dioxane	76		70		65-136	8		30
p-Diethylbenzene	93		92		70-130	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 01-05 Batch: WG1261466-3 WG1261466-4								
p-Ethyltoluene	93		90		70-130	3		30
1,2,4,5-Tetramethylbenzene	92		89		70-130	3		30
Ethyl ether	92		88		67-130	4		30
trans-1,4-Dichloro-2-butene	83		78		70-130	6		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	94		93		70-130
Toluene-d8	99		99		70-130
4-Bromofluorobenzene	97		95		70-130
Dibromofluoromethane	95		97		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 06-08 Batch: WG1261556-3 WG1261556-4								
Methylene chloride	110		110		70-130	0		20
1,1-Dichloroethane	98		98		70-130	0		20
Chloroform	100		100		70-130	0		20
Carbon tetrachloride	100		100		63-132	0		20
1,2-Dichloropropane	90		95		70-130	5		20
Dibromochloromethane	100		100		63-130	0		20
1,1,2-Trichloroethane	100		100		70-130	0		20
Tetrachloroethene	100		100		70-130	0		20
Chlorobenzene	110		100		75-130	10		20
Trichlorofluoromethane	100		97		62-150	3		20
1,2-Dichloroethane	93		92		70-130	1		20
1,1,1-Trichloroethane	100		100		67-130	0		20
Bromodichloromethane	98		99		67-130	1		20
trans-1,3-Dichloropropene	100		100		70-130	0		20
cis-1,3-Dichloropropene	86		92		70-130	7		20
1,1-Dichloropropene	98		99		70-130	1		20
Bromoform	94		98		54-136	4		20
1,1,2,2-Tetrachloroethane	100		100		67-130	0		20
Benzene	100		110		70-130	10		20
Toluene	110		110		70-130	0		20
Ethylbenzene	100		100		70-130	0		20
Chloromethane	87		87		64-130	0		20
Bromomethane	86		92		39-139	7		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.

Project Number: 170588001

Lab Number: L1931524

Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 06-08 Batch: WG1261556-3 WG1261556-4								
Vinyl chloride	94		91		55-140	3		20
Chloroethane	97		96		55-138	1		20
1,1-Dichloroethene	100		100		61-145	0		20
trans-1,2-Dichloroethene	100		100		70-130	0		20
Trichloroethene	100		100		70-130	0		20
1,2-Dichlorobenzene	100		100		70-130	0		20
1,3-Dichlorobenzene	100		100		70-130	0		20
1,4-Dichlorobenzene	100		100		70-130	0		20
Methyl tert butyl ether	88		100		63-130	13		20
p/m-Xylene	105		105		70-130	0		20
o-Xylene	105		105		70-130	0		20
cis-1,2-Dichloroethene	100		110		70-130	10		20
Dibromomethane	95		95		70-130	0		20
1,2,3-Trichloropropane	99		100		64-130	1		20
Acrylonitrile	99		96		70-130	3		20
Styrene	100		100		70-130	0		20
Dichlorodifluoromethane	110		110		36-147	0		20
Acetone	110		100		58-148	10		20
Carbon disulfide	100		100		51-130	0		20
2-Butanone	88		93		63-138	6		20
Vinyl acetate	87		87		70-130	0		20
4-Methyl-2-pentanone	92		96		59-130	4		20
2-Hexanone	86		84		57-130	2		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 06-08 Batch: WG1261556-3 WG1261556-4								
Bromochloromethane	110		110		70-130	0		20
2,2-Dichloropropane	100		100		63-133	0		20
1,2-Dibromoethane	100		100		70-130	0		20
1,3-Dichloropropane	100		100		70-130	0		20
1,1,1,2-Tetrachloroethane	100		100		64-130	0		20
Bromobenzene	100		100		70-130	0		20
n-Butylbenzene	100		100		53-136	0		20
sec-Butylbenzene	80		80		70-130	0		20
tert-Butylbenzene	100		100		70-130	0		20
o-Chlorotoluene	110		110		70-130	0		20
p-Chlorotoluene	110		100		70-130	10		20
1,2-Dibromo-3-chloropropane	95		99		41-144	4		20
Hexachlorobutadiene	93		96		63-130	3		20
Isopropylbenzene	110		100		70-130	10		20
p-Isopropyltoluene	110		100		70-130	10		20
Naphthalene	93		98		70-130	5		20
n-Propylbenzene	100		100		69-130	0		20
1,2,3-Trichlorobenzene	98		98		70-130	0		20
1,2,4-Trichlorobenzene	99		98		70-130	1		20
1,3,5-Trimethylbenzene	110		100		64-130	10		20
1,2,4-Trimethylbenzene	100		110		70-130	10		20
1,4-Dioxane	128		136		56-162	6		20
p-Diethylbenzene	100		100		70-130	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 06-08 Batch: WG1261556-3 WG1261556-4								
p-Ethyltoluene	110		110		70-130	0		20
1,2,4,5-Tetramethylbenzene	100		100		70-130	0		20
Ethyl ether	100		100		59-134	0		20
trans-1,4-Dichloro-2-butene	98		97		70-130	1		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		98		70-130
Toluene-d8	106		104		70-130
4-Bromofluorobenzene	99		97		70-130
Dibromofluoromethane	101		102		70-130

SEMIVOLATILES

Project Name: 450 JOHNSON AVE.
Project Number: 170588001
Lab Number: L1931524
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-01
Client ID: SB01_1.0-1.5
Sample Location: BROOKLYN, NY

Date Collected: 07/17/19 14:25
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/19/19 02:28
Analyst: RC
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 07/18/19 04:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	110	J	ug/kg	150	19.	1
1,2,4-Trichlorobenzene	ND		ug/kg	190	21.	1
Hexachlorobenzene	ND		ug/kg	110	21.	1
Bis(2-chloroethyl)ether	ND		ug/kg	170	25.	1
2-Chloronaphthalene	ND		ug/kg	190	19.	1
1,2-Dichlorobenzene	ND		ug/kg	190	34.	1
1,3-Dichlorobenzene	ND		ug/kg	190	32.	1
1,4-Dichlorobenzene	ND		ug/kg	190	33.	1
3,3'-Dichlorobenzidine	ND		ug/kg	190	50.	1
2,4-Dinitrotoluene	ND		ug/kg	190	38.	1
2,6-Dinitrotoluene	ND		ug/kg	190	32.	1
Fluoranthene	1900		ug/kg	110	22.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	190	20.	1
4-Bromophenyl phenyl ether	ND		ug/kg	190	29.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	220	32.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	200	19.	1
Hexachlorobutadiene	ND		ug/kg	190	27.	1
Hexachlorocyclopentadiene	ND		ug/kg	540	170	1
Hexachloroethane	ND		ug/kg	150	30.	1
Isophorone	ND		ug/kg	170	24.	1
Naphthalene	58	J	ug/kg	190	23.	1
Nitrobenzene	ND		ug/kg	170	28.	1
NDPA/DPA	ND		ug/kg	150	21.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	190	29.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	190	65.	1
Butyl benzyl phthalate	ND		ug/kg	190	47.	1
Di-n-butylphthalate	ND		ug/kg	190	36.	1
Di-n-octylphthalate	ND		ug/kg	190	64.	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-01 Date Collected: 07/17/19 14:25

Client ID: SB01_1.0-1.5 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	190	17.	1
Dimethyl phthalate	ND		ug/kg	190	39.	1
Benzo(a)anthracene	880		ug/kg	110	21.	1
Benzo(a)pyrene	780		ug/kg	150	46.	1
Benzo(b)fluoranthene	960		ug/kg	110	32.	1
Benzo(k)fluoranthene	340		ug/kg	110	30.	1
Chrysene	810		ug/kg	110	20.	1
Acenaphthylene	77	J	ug/kg	150	29.	1
Anthracene	320		ug/kg	110	37.	1
Benzo(ghi)perylene	440		ug/kg	150	22.	1
Fluorene	90	J	ug/kg	190	18.	1
Phenanthrene	1400		ug/kg	110	23.	1
Dibenzo(a,h)anthracene	100	J	ug/kg	110	22.	1
Indeno(1,2,3-cd)pyrene	460		ug/kg	150	26.	1
Pyrene	1700		ug/kg	110	19.	1
Biphenyl	ND		ug/kg	430	44.	1
4-Chloroaniline	ND		ug/kg	190	34.	1
2-Nitroaniline	ND		ug/kg	190	36.	1
3-Nitroaniline	ND		ug/kg	190	35.	1
4-Nitroaniline	ND		ug/kg	190	78.	1
Dibenzofuran	76	J	ug/kg	190	18.	1
2-Methylnaphthalene	30	J	ug/kg	220	23.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	190	20.	1
Acetophenone	ND		ug/kg	190	23.	1
2,4,6-Trichlorophenol	ND		ug/kg	110	36.	1
p-Chloro-m-cresol	ND		ug/kg	190	28.	1
2-Chlorophenol	ND		ug/kg	190	22.	1
2,4-Dichlorophenol	ND		ug/kg	170	30.	1
2,4-Dimethylphenol	ND		ug/kg	190	62.	1
2-Nitrophenol	ND		ug/kg	400	71.	1
4-Nitrophenol	ND		ug/kg	260	77.	1
2,4-Dinitrophenol	ND		ug/kg	900	88.	1
4,6-Dinitro-o-cresol	ND		ug/kg	490	90.	1
Pentachlorophenol	ND		ug/kg	150	41.	1
Phenol	ND		ug/kg	190	28.	1
2-Methylphenol	ND		ug/kg	190	29.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	270	29.	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-01 Date Collected: 07/17/19 14:25

Client ID: SB01_1.0-1.5 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	190	36.	1
Benzoic Acid	ND		ug/kg	610	190	1
Benzyl Alcohol	ND		ug/kg	190	57.	1
Carbazole	100	J	ug/kg	190	18.	1
1,4-Dioxane	ND		ug/kg	28	8.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	49		25-120
Phenol-d6	51		10-120
Nitrobenzene-d5	50		23-120
2-Fluorobiphenyl	52		30-120
2,4,6-Tribromophenol	57		10-136
4-Terphenyl-d14	42		18-120

Project Name: 450 JOHNSON AVE.
Project Number: 170588001
Lab Number: L1931524
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-02
Client ID: SB02_8.0-8.5
Sample Location: BROOKLYN, NY

Date Collected: 07/17/19 15:30
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/19/19 01:12
Analyst: RC
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 07/18/19 04:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	160	21.	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	23.	1
Hexachlorobenzene	ND		ug/kg	120	22.	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	27.	1
2-Chloronaphthalene	ND		ug/kg	200	20.	1
1,2-Dichlorobenzene	ND		ug/kg	200	36.	1
1,3-Dichlorobenzene	ND		ug/kg	200	34.	1
1,4-Dichlorobenzene	ND		ug/kg	200	35.	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	53.	1
2,4-Dinitrotoluene	ND		ug/kg	200	40.	1
2,6-Dinitrotoluene	ND		ug/kg	200	34.	1
Fluoranthene	41	J	ug/kg	120	23.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	200	21.	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	30.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	34.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	20.	1
Hexachlorobutadiene	ND		ug/kg	200	29.	1
Hexachlorocyclopentadiene	ND		ug/kg	570	180	1
Hexachloroethane	ND		ug/kg	160	32.	1
Isophorone	ND		ug/kg	180	26.	1
Naphthalene	ND		ug/kg	200	24.	1
Nitrobenzene	ND		ug/kg	180	30.	1
NDPA/DPA	ND		ug/kg	160	23.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	200	31.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	200	69.	1
Butyl benzyl phthalate	ND		ug/kg	200	50.	1
Di-n-butylphthalate	ND		ug/kg	200	38.	1
Di-n-octylphthalate	ND		ug/kg	200	68.	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-02 Date Collected: 07/17/19 15:30

Client ID: SB02_8.0-8.5 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	200	18.	1
Dimethyl phthalate	ND		ug/kg	200	42.	1
Benzo(a)anthracene	22	J	ug/kg	120	22.	1
Benzo(a)pyrene	ND		ug/kg	160	49.	1
Benzo(b)fluoranthene	ND		ug/kg	120	34.	1
Benzo(k)fluoranthene	ND		ug/kg	120	32.	1
Chrysene	ND		ug/kg	120	21.	1
Acenaphthylene	ND		ug/kg	160	31.	1
Anthracene	ND		ug/kg	120	39.	1
Benzo(ghi)perylene	ND		ug/kg	160	24.	1
Fluorene	ND		ug/kg	200	19.	1
Phenanthrene	30	J	ug/kg	120	24.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	23.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	28.	1
Pyrene	35	J	ug/kg	120	20.	1
Biphenyl	ND		ug/kg	460	46.	1
4-Chloroaniline	ND		ug/kg	200	36.	1
2-Nitroaniline	ND		ug/kg	200	38.	1
3-Nitroaniline	ND		ug/kg	200	38.	1
4-Nitroaniline	ND		ug/kg	200	83.	1
Dibenzofuran	ND		ug/kg	200	19.	1
2-Methylnaphthalene	ND		ug/kg	240	24.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	200	21.	1
Acetophenone	ND		ug/kg	200	25.	1
2,4,6-Trichlorophenol	ND		ug/kg	120	38.	1
p-Chloro-m-cresol	ND		ug/kg	200	30.	1
2-Chlorophenol	ND		ug/kg	200	24.	1
2,4-Dichlorophenol	ND		ug/kg	180	32.	1
2,4-Dimethylphenol	ND		ug/kg	200	66.	1
2-Nitrophenol	ND		ug/kg	430	75.	1
4-Nitrophenol	ND		ug/kg	280	82.	1
2,4-Dinitrophenol	ND		ug/kg	960	93.	1
4,6-Dinitro-o-cresol	ND		ug/kg	520	96.	1
Pentachlorophenol	ND		ug/kg	160	44.	1
Phenol	ND		ug/kg	200	30.	1
2-Methylphenol	ND		ug/kg	200	31.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	31.	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-02 Date Collected: 07/17/19 15:30

Client ID: SB02_8.0-8.5 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	200	38.	1
Benzoic Acid	ND		ug/kg	650	200	1
Benzyl Alcohol	ND		ug/kg	200	61.	1
Carbazole	ND		ug/kg	200	19.	1
1,4-Dioxane	ND		ug/kg	30	9.2	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	68		25-120
Phenol-d6	67		10-120
Nitrobenzene-d5	65		23-120
2-Fluorobiphenyl	74		30-120
2,4,6-Tribromophenol	71		10-136
4-Terphenyl-d14	72		18-120

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-03
Client ID: SB01_8.0-8.5
Sample Location: BROOKLYN, NY

Date Collected: 07/17/19 14:30
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/19/19 00:47
Analyst: RC
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 07/18/19 04:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	150	20.	1
1,2,4-Trichlorobenzene	ND		ug/kg	190	22.	1
Hexachlorobenzene	ND		ug/kg	110	21.	1
Bis(2-chloroethyl)ether	ND		ug/kg	170	26.	1
2-Chloronaphthalene	ND		ug/kg	190	19.	1
1,2-Dichlorobenzene	ND		ug/kg	190	34.	1
1,3-Dichlorobenzene	ND		ug/kg	190	33.	1
1,4-Dichlorobenzene	ND		ug/kg	190	33.	1
3,3'-Dichlorobenzidine	ND		ug/kg	190	51.	1
2,4-Dinitrotoluene	ND		ug/kg	190	38.	1
2,6-Dinitrotoluene	ND		ug/kg	190	33.	1
Fluoranthene	ND		ug/kg	110	22.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	190	20.	1
4-Bromophenyl phenyl ether	ND		ug/kg	190	29.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	230	33.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	210	19.	1
Hexachlorobutadiene	ND		ug/kg	190	28.	1
Hexachlorocyclopentadiene	ND		ug/kg	550	170	1
Hexachloroethane	ND		ug/kg	150	31.	1
Isophorone	ND		ug/kg	170	25.	1
Naphthalene	ND		ug/kg	190	23.	1
Nitrobenzene	ND		ug/kg	170	28.	1
NDPA/DPA	ND		ug/kg	150	22.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	190	30.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	190	66.	1
Butyl benzyl phthalate	ND		ug/kg	190	48.	1
Di-n-butylphthalate	ND		ug/kg	190	36.	1
Di-n-octylphthalate	ND		ug/kg	190	65.	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-03 Date Collected: 07/17/19 14:30

Client ID: SB01_8.0-8.5 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	190	18.	1
Dimethyl phthalate	ND		ug/kg	190	40.	1
Benzo(a)anthracene	ND		ug/kg	110	22.	1
Benzo(a)pyrene	ND		ug/kg	150	47.	1
Benzo(b)fluoranthene	ND		ug/kg	110	32.	1
Benzo(k)fluoranthene	ND		ug/kg	110	31.	1
Chrysene	ND		ug/kg	110	20.	1
Acenaphthylene	ND		ug/kg	150	30.	1
Anthracene	ND		ug/kg	110	37.	1
Benzo(ghi)perylene	ND		ug/kg	150	22.	1
Fluorene	ND		ug/kg	190	18.	1
Phenanthrene	ND		ug/kg	110	23.	1
Dibenzo(a,h)anthracene	ND		ug/kg	110	22.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	150	27.	1
Pyrene	ND		ug/kg	110	19.	1
Biphenyl	ND		ug/kg	440	44.	1
4-Chloroaniline	ND		ug/kg	190	35.	1
2-Nitroaniline	ND		ug/kg	190	37.	1
3-Nitroaniline	ND		ug/kg	190	36.	1
4-Nitroaniline	ND		ug/kg	190	79.	1
Dibenzofuran	ND		ug/kg	190	18.	1
2-Methylnaphthalene	ND		ug/kg	230	23.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	190	20.	1
Acetophenone	ND		ug/kg	190	24.	1
2,4,6-Trichlorophenol	ND		ug/kg	110	36.	1
p-Chloro-m-cresol	ND		ug/kg	190	28.	1
2-Chlorophenol	ND		ug/kg	190	23.	1
2,4-Dichlorophenol	ND		ug/kg	170	31.	1
2,4-Dimethylphenol	ND		ug/kg	190	63.	1
2-Nitrophenol	ND		ug/kg	410	72.	1
4-Nitrophenol	ND		ug/kg	270	78.	1
2,4-Dinitrophenol	ND		ug/kg	920	89.	1
4,6-Dinitro-o-cresol	ND		ug/kg	500	92.	1
Pentachlorophenol	ND		ug/kg	150	42.	1
Phenol	ND		ug/kg	190	29.	1
2-Methylphenol	ND		ug/kg	190	30.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	280	30.	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-03 Date Collected: 07/17/19 14:30

Client ID: SB01_8.0-8.5 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	190	37.	1
Benzoic Acid	ND		ug/kg	620	190	1
Benzyl Alcohol	ND		ug/kg	190	58.	1
Carbazole	ND		ug/kg	190	18.	1
1,4-Dioxane	ND		ug/kg	29	8.8	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	71		25-120
Phenol-d6	70		10-120
Nitrobenzene-d5	64		23-120
2-Fluorobiphenyl	74		30-120
2,4,6-Tribromophenol	77		10-136
4-Terphenyl-d14	67		18-120

Project Name: 450 JOHNSON AVE.
Lab Number: L1931524
Project Number: 170588001
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-04
Client ID: SB09_3.0-3.5
Sample Location: BROOKLYN, NY

Date Collected: 07/17/19 08:40
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/19/19 03:43
Analyst: RC
Percent Solids: 90%

Extraction Method: EPA 3546
Extraction Date: 07/18/19 04:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	960		ug/kg	140	19.	1
1,2,4-Trichlorobenzene	ND		ug/kg	180	21.	1
Hexachlorobenzene	ND		ug/kg	110	20.	1
Bis(2-chloroethyl)ether	ND		ug/kg	160	24.	1
2-Chloronaphthalene	ND		ug/kg	180	18.	1
1,2-Dichlorobenzene	ND		ug/kg	180	32.	1
1,3-Dichlorobenzene	ND		ug/kg	180	31.	1
1,4-Dichlorobenzene	ND		ug/kg	180	32.	1
3,3'-Dichlorobenzidine	ND		ug/kg	180	48.	1
2,4-Dinitrotoluene	ND		ug/kg	180	36.	1
2,6-Dinitrotoluene	ND		ug/kg	180	31.	1
Fluoranthene	6500		ug/kg	110	21.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	180	19.	1
4-Bromophenyl phenyl ether	ND		ug/kg	180	28.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	220	31.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	190	18.	1
Hexachlorobutadiene	ND		ug/kg	180	26.	1
Hexachlorocyclopentadiene	ND		ug/kg	520	160	1
Hexachloroethane	ND		ug/kg	140	29.	1
Isophorone	ND		ug/kg	160	23.	1
Naphthalene	570		ug/kg	180	22.	1
Nitrobenzene	ND		ug/kg	160	27.	1
NDPA/DPA	ND		ug/kg	140	20.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	180	28.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	180	62.	1
Butyl benzyl phthalate	ND		ug/kg	180	45.	1
Di-n-butylphthalate	ND		ug/kg	180	34.	1
Di-n-octylphthalate	ND		ug/kg	180	61.	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-04 Date Collected: 07/17/19 08:40

Client ID: SB09_3.0-3.5 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	180	17.	1
Dimethyl phthalate	ND		ug/kg	180	38.	1
Benzo(a)anthracene	3000		ug/kg	110	20.	1
Benzo(a)pyrene	2300		ug/kg	140	44.	1
Benzo(b)fluoranthene	3200		ug/kg	110	30.	1
Benzo(k)fluoranthene	1000		ug/kg	110	29.	1
Chrysene	2600		ug/kg	110	19.	1
Acenaphthylene	58	J	ug/kg	140	28.	1
Anthracene	1500		ug/kg	110	35.	1
Benzo(ghi)perylene	1300		ug/kg	140	21.	1
Fluorene	720		ug/kg	180	18.	1
Phenanthrene	6200		ug/kg	110	22.	1
Dibenzo(a,h)anthracene	340		ug/kg	110	21.	1
Indeno(1,2,3-cd)pyrene	1500		ug/kg	140	25.	1
Pyrene	5300		ug/kg	110	18.	1
Biphenyl	65	J	ug/kg	410	42.	1
4-Chloroaniline	ND		ug/kg	180	33.	1
2-Nitroaniline	ND		ug/kg	180	35.	1
3-Nitroaniline	ND		ug/kg	180	34.	1
4-Nitroaniline	ND		ug/kg	180	75.	1
Dibenzofuran	490		ug/kg	180	17.	1
2-Methylnaphthalene	220		ug/kg	220	22.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	180	19.	1
Acetophenone	ND		ug/kg	180	22.	1
2,4,6-Trichlorophenol	ND		ug/kg	110	34.	1
p-Chloro-m-cresol	ND		ug/kg	180	27.	1
2-Chlorophenol	ND		ug/kg	180	21.	1
2,4-Dichlorophenol	ND		ug/kg	160	29.	1
2,4-Dimethylphenol	ND		ug/kg	180	60.	1
2-Nitrophenol	ND		ug/kg	390	68.	1
4-Nitrophenol	ND		ug/kg	250	74.	1
2,4-Dinitrophenol	ND		ug/kg	870	84.	1
4,6-Dinitro-o-cresol	ND		ug/kg	470	87.	1
Pentachlorophenol	ND		ug/kg	140	40.	1
Phenol	ND		ug/kg	180	27.	1
2-Methylphenol	ND		ug/kg	180	28.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	260	28.	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-04 Date Collected: 07/17/19 08:40

Client ID: SB09_3.0-3.5 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	180	34.	1
Benzoic Acid	ND		ug/kg	580	180	1
Benzyl Alcohol	ND		ug/kg	180	55.	1
Carbazole	820		ug/kg	180	18.	1
1,4-Dioxane	ND		ug/kg	27	8.3	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	60		25-120
Phenol-d6	63		10-120
Nitrobenzene-d5	60		23-120
2-Fluorobiphenyl	59		30-120
2,4,6-Tribromophenol	74		10-136
4-Terphenyl-d14	48		18-120

Project Name: 450 JOHNSON AVE.
Project Number: 170588001
Lab Number: L1931524
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-05
Client ID: SB11_5.0-5.5
Sample Location: BROOKLYN, NY

Date Collected: 07/17/19 10:40
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/19/19 02:53
Analyst: RC
Percent Solids: 76%

Extraction Method: EPA 3546
Extraction Date: 07/18/19 04:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	480		ug/kg	170	22.	1
1,2,4-Trichlorobenzene	ND		ug/kg	220	25.	1
Hexachlorobenzene	ND		ug/kg	130	24.	1
Bis(2-chloroethyl)ether	ND		ug/kg	190	29.	1
2-Chloronaphthalene	ND		ug/kg	220	21.	1
1,2-Dichlorobenzene	ND		ug/kg	220	39.	1
1,3-Dichlorobenzene	ND		ug/kg	220	37.	1
1,4-Dichlorobenzene	ND		ug/kg	220	38.	1
3,3'-Dichlorobenzidine	ND		ug/kg	220	57.	1
2,4-Dinitrotoluene	ND		ug/kg	220	43.	1
2,6-Dinitrotoluene	ND		ug/kg	220	37.	1
Fluoranthene	2900		ug/kg	130	25.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	220	23.	1
4-Bromophenyl phenyl ether	ND		ug/kg	220	33.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	260	37.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	230	22.	1
Hexachlorobutadiene	ND		ug/kg	220	32.	1
Hexachlorocyclopentadiene	ND		ug/kg	620	200	1
Hexachloroethane	ND		ug/kg	170	35.	1
Isophorone	ND		ug/kg	190	28.	1
Naphthalene	210	J	ug/kg	220	26.	1
Nitrobenzene	ND		ug/kg	190	32.	1
NDPA/DPA	ND		ug/kg	170	24.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	220	33.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	220	74.	1
Butyl benzyl phthalate	ND		ug/kg	220	54.	1
Di-n-butylphthalate	ND		ug/kg	220	41.	1
Di-n-octylphthalate	ND		ug/kg	220	73.	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-05 Date Collected: 07/17/19 10:40

Client ID: SB11_5.0-5.5 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	220	20.	1
Dimethyl phthalate	ND		ug/kg	220	45.	1
Benzo(a)anthracene	1300		ug/kg	130	24.	1
Benzo(a)pyrene	960		ug/kg	170	52.	1
Benzo(b)fluoranthene	1200		ug/kg	130	36.	1
Benzo(k)fluoranthene	450		ug/kg	130	34.	1
Chrysene	1100		ug/kg	130	22.	1
Acenaphthylene	34	J	ug/kg	170	33.	1
Anthracene	860		ug/kg	130	42.	1
Benzo(ghi)perylene	430		ug/kg	170	25.	1
Fluorene	420		ug/kg	220	21.	1
Phenanthrene	3500		ug/kg	130	26.	1
Dibenzo(a,h)anthracene	140		ug/kg	130	25.	1
Indeno(1,2,3-cd)pyrene	500		ug/kg	170	30.	1
Pyrene	2400		ug/kg	130	21.	1
Biphenyl	ND		ug/kg	490	50.	1
4-Chloroaniline	ND		ug/kg	220	39.	1
2-Nitroaniline	ND		ug/kg	220	42.	1
3-Nitroaniline	ND		ug/kg	220	41.	1
4-Nitroaniline	ND		ug/kg	220	89.	1
Dibenzofuran	350		ug/kg	220	20.	1
2-Methylnaphthalene	160	J	ug/kg	260	26.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	220	22.	1
Acetophenone	ND		ug/kg	220	27.	1
2,4,6-Trichlorophenol	ND		ug/kg	130	41.	1
p-Chloro-m-cresol	ND		ug/kg	220	32.	1
2-Chlorophenol	ND		ug/kg	220	25.	1
2,4-Dichlorophenol	ND		ug/kg	190	35.	1
2,4-Dimethylphenol	ND		ug/kg	220	71.	1
2-Nitrophenol	ND		ug/kg	460	81.	1
4-Nitrophenol	ND		ug/kg	300	88.	1
2,4-Dinitrophenol	ND		ug/kg	1000	100	1
4,6-Dinitro-o-cresol	ND		ug/kg	560	100	1
Pentachlorophenol	ND		ug/kg	170	47.	1
Phenol	ND		ug/kg	220	32.	1
2-Methylphenol	ND		ug/kg	220	33.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	310	34.	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-05 Date Collected: 07/17/19 10:40

Client ID: SB11_5.0-5.5 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	220	41.	1
Benzoic Acid	ND		ug/kg	700	220	1
Benzyl Alcohol	ND		ug/kg	220	66.	1
Carbazole	410		ug/kg	220	21.	1
1,4-Dioxane	ND		ug/kg	32	9.9	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	70		25-120
Phenol-d6	69		10-120
Nitrobenzene-d5	71		23-120
2-Fluorobiphenyl	69		30-120
2,4,6-Tribromophenol	66		10-136
4-Terphenyl-d14	49		18-120

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-09
Client ID: TMW04_071719 (UF SVOC)
Sample Location: BROOKLYN, NY

Date Collected: 07/17/19 13:00
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 07/19/19 07:36
Analyst: JG

Extraction Method: EPA 3510C
Extraction Date: 07/18/19 15:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.50	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.45	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.40	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.43	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	1.8	J	ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-09 Date Collected: 07/17/19 13:00

Client ID: TMW04_071719 (UF SVOC) Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Dibenzofuran	5.0		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
2-Methylphenol	ND		ug/l	5.0	0.49	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Benzoic Acid	ND		ug/l	50	2.6	1
Benzyl Alcohol	ND		ug/l	2.0	0.59	1
Carbazole	ND		ug/l	2.0	0.49	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	76		21-120
Phenol-d6	65		10-120
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	99		15-120
2,4,6-Tribromophenol	102		10-120
4-Terphenyl-d14	106		41-149

Project Name: 450 JOHNSON AVE.
Lab Number: L1931524
Project Number: 170588001
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-09
Client ID: TMW04_071719 (UF SVOC)
Sample Location: BROOKLYN, NY

Date Collected: 07/17/19 13:00
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 07/19/19 12:26
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 07/18/19 15:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	14		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	2.7		ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	1.8		ug/l	0.10	0.05	1
Benzo(a)anthracene	0.89		ug/l	0.10	0.02	1
Benzo(a)pyrene	0.61		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	0.76		ug/l	0.10	0.01	1
Benzo(k)fluoranthene	0.27		ug/l	0.10	0.01	1
Chrysene	1.1		ug/l	0.10	0.01	1
Acenaphthylene	4.1		ug/l	0.10	0.01	1
Anthracene	3.7		ug/l	0.10	0.01	1
Benzo(ghi)perylene	0.41		ug/l	0.10	0.01	1
Fluorene	20		ug/l	0.10	0.01	1
Phenanthrene	46		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	0.11		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	0.41		ug/l	0.10	0.01	1
Pyrene	5.6		ug/l	0.10	0.02	1
2-Methylnaphthalene	0.65		ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-09 Date Collected: 07/17/19 13:00

Client ID: TMW04_071719 (UF SVOC) Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	69		21-120
Phenol-d6	60		10-120
Nitrobenzene-d5	**149**	Q	23-120
2-Fluorobiphenyl	91		15-120
2,4,6-Tribromophenol	102		10-120
4-Terphenyl-d14	97		41-149

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-10
Client ID: TMW01_071719 (UF SVOC)
Sample Location: BROOKLYN, NY

Date Collected: 07/17/19 13:25
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 07/19/19 08:01
Analyst: JG

Extraction Method: EPA 3510C
Extraction Date: 07/18/19 15:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.50	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.45	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.40	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.43	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	3.0		ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-10 Date Collected: 07/17/19 13:25

Client ID: TMW01_071719 (UF SVOC) Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Dibenzofuran	ND		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
2-Methylphenol	ND		ug/l	5.0	0.49	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Benzoic Acid	ND		ug/l	50	2.6	1
Benzyl Alcohol	ND		ug/l	2.0	0.59	1
Carbazole	ND		ug/l	2.0	0.49	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	41		21-120
Phenol-d6	33		10-120
Nitrobenzene-d5	45		23-120
2-Fluorobiphenyl	51		15-120
2,4,6-Tribromophenol	54		10-120
4-Terphenyl-d14	55		41-149

Project Name: 450 JOHNSON AVE.
Lab Number: L1931524
Project Number: 170588001
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-10
Client ID: TMW01_071719 (UF SVOC)
Sample Location: BROOKLYN, NY

Date Collected: 07/17/19 13:25
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 07/19/19 12:43
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 07/18/19 15:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	ND		ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	ND		ug/l	0.10	0.05	1
Benzo(a)anthracene	ND		ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01	1
Chrysene	ND		ug/l	0.10	0.01	1
Acenaphthylene	ND		ug/l	0.10	0.01	1
Anthracene	ND		ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1
Fluorene	ND		ug/l	0.10	0.01	1
Phenanthrene	ND		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Pyrene	ND		ug/l	0.10	0.02	1
2-Methylnaphthalene	ND		ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-10 Date Collected: 07/17/19 13:25

Client ID: TMW01_071719 (UF SVOC) Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	42		21-120
Phenol-d6	34		10-120
Nitrobenzene-d5	53		23-120
2-Fluorobiphenyl	51		15-120
2,4,6-Tribromophenol	64		10-120
4-Terphenyl-d14	59		41-149

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-11
Client ID: TMW03_071719 (UF SVOC)
Sample Location: BROOKLYN, NY

Date Collected: 07/17/19 11:00
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 07/19/19 08:27
Analyst: JG

Extraction Method: EPA 3510C
Extraction Date: 07/18/19 15:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.50	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.45	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.40	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.43	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-11 Date Collected: 07/17/19 11:00

Client ID: TMW03_071719 (UF SVOC) Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Dibenzofuran	0.77	J	ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
2-Methylphenol	ND		ug/l	5.0	0.49	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Benzoic Acid	12.	J	ug/l	50	2.6	1
Benzyl Alcohol	ND		ug/l	2.0	0.59	1
Carbazole	ND		ug/l	2.0	0.49	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	80		21-120
Phenol-d6	66		10-120
Nitrobenzene-d5	91		23-120
2-Fluorobiphenyl	103		15-120
2,4,6-Tribromophenol	97		10-120
4-Terphenyl-d14	121		41-149

Project Name: 450 JOHNSON AVE.
Lab Number: L1931524
Project Number: 170588001
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-11
Client ID: TMW03_071719 (UF SVOC)
Sample Location: BROOKLYN, NY

Date Collected: 07/17/19 11:00
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 07/19/19 12:59
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 07/18/19 15:43

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	2.5		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	0.32		ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	0.57		ug/l	0.10	0.05	1
Benzo(a)anthracene	0.11		ug/l	0.10	0.02	1
Benzo(a)pyrene	0.08	J	ug/l	0.10	0.02	1
Benzo(b)fluoranthene	0.10		ug/l	0.10	0.01	1
Benzo(k)fluoranthene	0.05	J	ug/l	0.10	0.01	1
Chrysene	0.11		ug/l	0.10	0.01	1
Acenaphthylene	0.55		ug/l	0.10	0.01	1
Anthracene	0.40		ug/l	0.10	0.01	1
Benzo(ghi)perylene	0.07	J	ug/l	0.10	0.01	1
Fluorene	3.3		ug/l	0.10	0.01	1
Phenanthrene	5.4		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	0.07	J	ug/l	0.10	0.01	1
Pyrene	0.58		ug/l	0.10	0.02	1
2-Methylnaphthalene	0.13		ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-11 Date Collected: 07/17/19 11:00

Client ID: TMW03_071719 (UF SVOC) Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	70		21-120
Phenol-d6	60		10-120
Nitrobenzene-d5	98		23-120
2-Fluorobiphenyl	91		15-120
2,4,6-Tribromophenol	110		10-120
4-Terphenyl-d14	98		41-149

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/17/19 21:38
Analyst: RC

Extraction Method: EPA 3546
Extraction Date: 07/17/19 05:18

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-05 Batch: WG1260798-1					
Acenaphthene	ND		ug/kg	130	17.
1,2,4-Trichlorobenzene	ND		ug/kg	160	19.
Hexachlorobenzene	ND		ug/kg	98	18.
Bis(2-chloroethyl)ether	ND		ug/kg	150	22.
2-Chloronaphthalene	ND		ug/kg	160	16.
1,2-Dichlorobenzene	ND		ug/kg	160	29.
1,3-Dichlorobenzene	ND		ug/kg	160	28.
1,4-Dichlorobenzene	ND		ug/kg	160	29.
3,3'-Dichlorobenzidine	ND		ug/kg	160	44.
2,4-Dinitrotoluene	ND		ug/kg	160	33.
2,6-Dinitrotoluene	ND		ug/kg	160	28.
Fluoranthene	ND		ug/kg	98	19.
4-Chlorophenyl phenyl ether	ND		ug/kg	160	18.
4-Bromophenyl phenyl ether	ND		ug/kg	160	25.
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	28.
Bis(2-chloroethoxy)methane	ND		ug/kg	180	16.
Hexachlorobutadiene	ND		ug/kg	160	24.
Hexachlorocyclopentadiene	ND		ug/kg	470	150
Hexachloroethane	ND		ug/kg	130	26.
Isophorone	ND		ug/kg	150	21.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	150	24.
NDPA/DPA	ND		ug/kg	130	19.
n-Nitrosodi-n-propylamine	ND		ug/kg	160	25.
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	57.
Butyl benzyl phthalate	ND		ug/kg	160	41.
Di-n-butylphthalate	ND		ug/kg	160	31.
Di-n-octylphthalate	ND		ug/kg	160	56.
Diethyl phthalate	ND		ug/kg	160	15.

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/17/19 21:38
Analyst: RC

Extraction Method: EPA 3546
Extraction Date: 07/17/19 05:18

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-05 Batch: WG1260798-1					
Dimethyl phthalate	97	J	ug/kg	160	34.
Benzo(a)anthracene	ND		ug/kg	98	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	98	28.
Benzo(k)fluoranthene	ND		ug/kg	98	26.
Chrysene	ND		ug/kg	98	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	98	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	98	20.
Dibenzo(a,h)anthracene	ND		ug/kg	98	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	98	16.
Biphenyl	ND		ug/kg	370	38.
4-Chloroaniline	ND		ug/kg	160	30.
2-Nitroaniline	ND		ug/kg	160	32.
3-Nitroaniline	ND		ug/kg	160	31.
4-Nitroaniline	ND		ug/kg	160	68.
Dibenzofuran	ND		ug/kg	160	16.
2-Methylnaphthalene	ND		ug/kg	200	20.
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	160	17.
Acetophenone	ND		ug/kg	160	20.
2,4,6-Trichlorophenol	ND		ug/kg	98	31.
p-Chloro-m-cresol	ND		ug/kg	160	24.
2-Chlorophenol	ND		ug/kg	160	19.
2,4-Dichlorophenol	ND		ug/kg	150	26.
2,4-Dimethylphenol	ND		ug/kg	160	54.
2-Nitrophenol	ND		ug/kg	350	62.

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/17/19 21:38
Analyst: RC

Extraction Method: EPA 3546
Extraction Date: 07/17/19 05:18

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-05 Batch: WG1260798-1					
4-Nitrophenol	ND		ug/kg	230	67.
2,4-Dinitrophenol	ND		ug/kg	790	76.
4,6-Dinitro-o-cresol	ND		ug/kg	430	79.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	25.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.
2,4,5-Trichlorophenol	ND		ug/kg	160	31.
Benzoic Acid	ND		ug/kg	530	160
Benzyl Alcohol	ND		ug/kg	160	50.
Carbazole	ND		ug/kg	160	16.
1,4-Dioxane	ND		ug/kg	24	7.5

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	76		25-120
Phenol-d6	80		10-120
Nitrobenzene-d5	72		23-120
2-Fluorobiphenyl	68		30-120
2,4,6-Tribromophenol	84		10-136
4-Terphenyl-d14	76		18-120

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/19/19 05:53
Analyst: JG

Extraction Method: EPA 3510C
Extraction Date: 07/18/19 15:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 09-11 Batch: WG1261662-1					
Acenaphthene	ND		ug/l	2.0	0.44
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.50
Hexachlorobenzene	ND		ug/l	2.0	0.46
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50
2-Chloronaphthalene	ND		ug/l	2.0	0.44
1,2-Dichlorobenzene	ND		ug/l	2.0	0.45
1,3-Dichlorobenzene	ND		ug/l	2.0	0.40
1,4-Dichlorobenzene	ND		ug/l	2.0	0.43
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93
Fluoranthene	ND		ug/l	2.0	0.26
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50
Hexachlorobutadiene	ND		ug/l	2.0	0.66
Hexachlorocyclopentadiene	ND		ug/l	20	0.69
Hexachloroethane	ND		ug/l	2.0	0.58
Isophorone	ND		ug/l	5.0	1.2
Naphthalene	ND		ug/l	2.0	0.46
Nitrobenzene	ND		ug/l	2.0	0.77
NDPA/DPA	ND		ug/l	2.0	0.42
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5
Butyl benzyl phthalate	ND		ug/l	5.0	1.2
Di-n-butylphthalate	ND		ug/l	5.0	0.39
Di-n-octylphthalate	ND		ug/l	5.0	1.3
Diethyl phthalate	ND		ug/l	5.0	0.38

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/19/19 05:53
Analyst: JG

Extraction Method: EPA 3510C
Extraction Date: 07/18/19 15:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 09-11 Batch: WG1261662-1					
Dimethyl phthalate	ND		ug/l	5.0	1.8
Benzo(a)anthracene	ND		ug/l	2.0	0.32
Benzo(a)pyrene	ND		ug/l	2.0	0.41
Benzo(b)fluoranthene	ND		ug/l	2.0	0.35
Benzo(k)fluoranthene	ND		ug/l	2.0	0.37
Chrysene	ND		ug/l	2.0	0.34
Acenaphthylene	ND		ug/l	2.0	0.46
Anthracene	ND		ug/l	2.0	0.33
Benzo(ghi)perylene	ND		ug/l	2.0	0.30
Fluorene	ND		ug/l	2.0	0.41
Phenanthrene	ND		ug/l	2.0	0.33
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.32
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.40
Pyrene	ND		ug/l	2.0	0.28
Biphenyl	ND		ug/l	2.0	0.46
4-Chloroaniline	ND		ug/l	5.0	1.1
2-Nitroaniline	ND		ug/l	5.0	0.50
3-Nitroaniline	ND		ug/l	5.0	0.81
4-Nitroaniline	ND		ug/l	5.0	0.80
Dibenzofuran	ND		ug/l	2.0	0.50
2-Methylnaphthalene	ND		ug/l	2.0	0.45
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44
Acetophenone	ND		ug/l	5.0	0.53
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61
p-Chloro-m-cresol	ND		ug/l	2.0	0.35
2-Chlorophenol	ND		ug/l	2.0	0.48
2,4-Dichlorophenol	ND		ug/l	5.0	0.41
2,4-Dimethylphenol	ND		ug/l	5.0	1.8
2-Nitrophenol	ND		ug/l	10	0.85

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/19/19 05:53
Analyst: JG

Extraction Method: EPA 3510C
Extraction Date: 07/18/19 15:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 09-11 Batch: WG1261662-1					
4-Nitrophenol	ND		ug/l	10	0.67
2,4-Dinitrophenol	ND		ug/l	20	6.6
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8
Pentachlorophenol	ND		ug/l	10	1.8
Phenol	ND		ug/l	5.0	0.57
2-Methylphenol	ND		ug/l	5.0	0.49
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77
Benzoic Acid	ND		ug/l	50	2.6
Benzyl Alcohol	ND		ug/l	2.0	0.59
Carbazole	ND		ug/l	2.0	0.49

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	63		21-120
Phenol-d6	52		10-120
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	71		15-120
2,4,6-Tribromophenol	59		10-120
4-Terphenyl-d14	100		41-149

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 07/19/19 10:14
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 07/18/19 15:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 09-11 Batch: WG1261673-1					
Acenaphthene	ND		ug/l	0.10	0.01
2-Chloronaphthalene	ND		ug/l	0.20	0.02
Fluoranthene	ND		ug/l	0.10	0.02
Hexachlorobutadiene	ND		ug/l	0.50	0.05
Naphthalene	ND		ug/l	0.10	0.05
Benzo(a)anthracene	ND		ug/l	0.10	0.02
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01
Chrysene	ND		ug/l	0.10	0.01
Acenaphthylene	ND		ug/l	0.10	0.01
Anthracene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.10	0.02
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
2-Methylnaphthalene	ND		ug/l	0.10	0.02
Pentachlorophenol	ND		ug/l	0.80	0.01
Hexachlorobenzene	ND		ug/l	0.80	0.01
Hexachloroethane	ND		ug/l	0.80	0.06

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 07/19/19 10:14
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 07/18/19 15:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 09-11 Batch: WG1261673-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	59		21-120
Phenol-d6	49		10-120
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	70		15-120
2,4,6-Tribromophenol	81		10-120
4-Terphenyl-d14	90		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-05 Batch: WG1260798-2 WG1260798-3								
Acenaphthene	76		79		31-137	4		50
1,2,4-Trichlorobenzene	73		78		38-107	7		50
Hexachlorobenzene	84		90		40-140	7		50
Bis(2-chloroethyl)ether	72		79		40-140	9		50
2-Chloronaphthalene	72		76		40-140	5		50
1,2-Dichlorobenzene	77		83		40-140	8		50
1,3-Dichlorobenzene	72		77		40-140	7		50
1,4-Dichlorobenzene	73		79		28-104	8		50
3,3'-Dichlorobenzidine	77		83		40-140	8		50
2,4-Dinitrotoluene	90		93		40-132	3		50
2,6-Dinitrotoluene	83		87		40-140	5		50
Fluoranthene	81		83		40-140	2		50
4-Chlorophenyl phenyl ether	75		78		40-140	4		50
4-Bromophenyl phenyl ether	82		86		40-140	5		50
Bis(2-chloroisopropyl)ether	58		61		40-140	5		50
Bis(2-chloroethoxy)methane	74		79		40-117	7		50
Hexachlorobutadiene	76		80		40-140	5		50
Hexachlorocyclopentadiene	55		60		40-140	9		50
Hexachloroethane	74		80		40-140	8		50
Isophorone	78		83		40-140	6		50
Naphthalene	76		78		40-140	3		50
Nitrobenzene	78		84		40-140	7		50
NDPA/DPA	79		82		36-157	4		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-05 Batch: WG1260798-2 WG1260798-3								
n-Nitrosodi-n-propylamine	81		85		32-121	5		50
Bis(2-ethylhexyl)phthalate	80		83		40-140	4		50
Butyl benzyl phthalate	89		92		40-140	3		50
Di-n-butylphthalate	89		91		40-140	2		50
Di-n-octylphthalate	90		92		40-140	2		50
Diethyl phthalate	80		83		40-140	4		50
Dimethyl phthalate	82		84		40-140	2		50
Benzo(a)anthracene	83		86		40-140	4		50
Benzo(a)pyrene	79		80		40-140	1		50
Benzo(b)fluoranthene	87		92		40-140	6		50
Benzo(k)fluoranthene	73		74		40-140	1		50
Chrysene	74		78		40-140	5		50
Acenaphthylene	77		80		40-140	4		50
Anthracene	81		83		40-140	2		50
Benzo(ghi)perylene	84		87		40-140	4		50
Fluorene	79		82		40-140	4		50
Phenanthrene	76		82		40-140	8		50
Dibenzo(a,h)anthracene	85		90		40-140	6		50
Indeno(1,2,3-cd)pyrene	86		96		40-140	11		50
Pyrene	78		82		35-142	5		50
Biphenyl	79		82		54-104	4		50
4-Chloroaniline	60		66		40-140	10		50
2-Nitroaniline	88		93		47-134	6		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-05 Batch: WG1260798-2 WG1260798-3								
3-Nitroaniline	69		74		26-129	7		50
4-Nitroaniline	79		84		41-125	6		50
Dibenzofuran	80		83		40-140	4		50
2-Methylnaphthalene	74		78		40-140	5		50
1,2,4,5-Tetrachlorobenzene	82		85		40-117	4		50
Acetophenone	84		89		14-144	6		50
2,4,6-Trichlorophenol	85		88		30-130	3		50
p-Chloro-m-cresol	86		91		26-103	6		50
2-Chlorophenol	85		88		25-102	3		50
2,4-Dichlorophenol	83		88		30-130	6		50
2,4-Dimethylphenol	80		86		30-130	7		50
2-Nitrophenol	86		92		30-130	7		50
4-Nitrophenol	84		91		11-114	8		50
2,4-Dinitrophenol	77		82		4-130	6		50
4,6-Dinitro-o-cresol	101		104		10-130	3		50
Pentachlorophenol	75		79		17-109	5		50
Phenol	77		81		26-90	5		50
2-Methylphenol	89		93		30-130.	4		50
3-Methylphenol/4-Methylphenol	92		97		30-130	5		50
2,4,5-Trichlorophenol	87		93		30-130	7		50
Benzoic Acid	60		61		10-110	2		50
Benzyl Alcohol	86		92		40-140	7		50
Carbazole	82		86		54-128	5		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-05 Batch: WG1260798-2 WG1260798-3								
1,4-Dioxane	61		67		40-140	9		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	88		93		25-120
Phenol-d6	90		94		10-120
Nitrobenzene-d5	82		89		23-120
2-Fluorobiphenyl	74		78		30-120
2,4,6-Tribromophenol	92		100		10-136
4-Terphenyl-d14	82		84		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 09-11 Batch: WG1261662-2 WG1261662-3								
Acenaphthene	69		81		37-111	16		30
1,2,4-Trichlorobenzene	73		81		39-98	10		30
Hexachlorobenzene	85		98		40-140	14		30
Bis(2-chloroethyl)ether	68		79		40-140	15		30
2-Chloronaphthalene	79		89		40-140	12		30
1,2-Dichlorobenzene	68		79		40-140	15		30
1,3-Dichlorobenzene	66		77		40-140	15		30
1,4-Dichlorobenzene	69		79		36-97	14		30
3,3'-Dichlorobenzidine	75		89		40-140	17		30
2,4-Dinitrotoluene	74		85		48-143	14		30
2,6-Dinitrotoluene	84		93		40-140	10		30
Fluoranthene	93		95		40-140	2		30
4-Chlorophenyl phenyl ether	75		90		40-140	18		30
4-Bromophenyl phenyl ether	89		98		40-140	10		30
Bis(2-chloroisopropyl)ether	85		110		40-140	26		30
Bis(2-chloroethoxy)methane	76		100		40-140	27		30
Hexachlorobutadiene	78		90		40-140	14		30
Hexachlorocyclopentadiene	80		94		40-140	16		30
Hexachloroethane	69		83		40-140	18		30
Isophorone	80		94		40-140	16		30
Naphthalene	71		85		40-140	18		30
Nitrobenzene	80		93		40-140	15		30
NDPA/DPA	78		90		40-140	14		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 09-11 Batch: WG1261662-2 WG1261662-3								
n-Nitrosodi-n-propylamine	85		101		29-132	17		30
Bis(2-ethylhexyl)phthalate	95		98		40-140	3		30
Butyl benzyl phthalate	98		106		40-140	8		30
Di-n-butylphthalate	88		98		40-140	11		30
Di-n-octylphthalate	101		108		40-140	7		30
Diethyl phthalate	86		97		40-140	12		30
Dimethyl phthalate	92		98		40-140	6		30
Benzo(a)anthracene	90		95		40-140	5		30
Benzo(a)pyrene	93		105		40-140	12		30
Benzo(b)fluoranthene	101		107		40-140	6		30
Benzo(k)fluoranthene	85		99		40-140	15		30
Chrysene	84		93		40-140	10		30
Acenaphthylene	82		93		45-123	13		30
Anthracene	85		96		40-140	12		30
Benzo(ghi)perylene	93		96		40-140	3		30
Fluorene	73		87		40-140	18		30
Phenanthrene	81		92		40-140	13		30
Dibenzo(a,h)anthracene	87		96		40-140	10		30
Indeno(1,2,3-cd)pyrene	84		92		40-140	9		30
Pyrene	91		92		26-127	1		30
Biphenyl	71		81		40-140	13		30
4-Chloroaniline	74		94		40-140	24		30
2-Nitroaniline	83		91		52-143	9		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 09-11 Batch: WG1261662-2 WG1261662-3								
3-Nitroaniline	64		77		25-145	18		30
4-Nitroaniline	72		83		51-143	14		30
Dibenzofuran	71		83		40-140	16		30
2-Methylnaphthalene	71		82		40-140	14		30
1,2,4,5-Tetrachlorobenzene	74		83		2-134	11		30
Acetophenone	66		79		39-129	18		30
2,4,6-Trichlorophenol	79		93		30-130	16		30
p-Chloro-m-cresol	88		95		23-97	8		30
2-Chlorophenol	74		86		27-123	15		30
2,4-Dichlorophenol	75		90		30-130	18		30
2,4-Dimethylphenol	59		87		30-130	**38**	Q	30
2-Nitrophenol	80		94		30-130	16		30
4-Nitrophenol	78		**82**	Q	10-80	5		30
2,4-Dinitrophenol	74		78		20-130	5		30
4,6-Dinitro-o-cresol	89		100		20-164	12		30
Pentachlorophenol	80		91		9-103	13		30
Phenol	63		67		12-110	6		30
2-Methylphenol	70		88		30-130	23		30
3-Methylphenol/4-Methylphenol	73		82		30-130	12		30
2,4,5-Trichlorophenol	86		99		30-130	14		30
Benzoic Acid	**0**	Q	**0**	Q	10-164	NC		30
Benzyl Alcohol	78		87		26-116	11		30
Carbazole	87		96		55-144	10		30

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.

Project Number: 170588001

Lab Number: L1931524

Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 09-11 Batch: WG1261662-2 WG1261662-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	65		77		21-120
Phenol-d6	64		70		10-120
Nitrobenzene-d5	84		96		23-120
2-Fluorobiphenyl	82		95		15-120
2,4,6-Tribromophenol	80		93		10-120
4-Terphenyl-d14	100		94		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 09-11 Batch: WG1261673-2 WG1261673-3								
Acenaphthene	92		92		40-140	0		40
2-Chloronaphthalene	86		84		40-140	2		40
Fluoranthene	**166**	Q	100		40-140	**50**	Q	40
Hexachlorobutadiene	70		67		40-140	4		40
Naphthalene	80		76		40-140	5		40
Benzo(a)anthracene	134		105		40-140	24		40
Benzo(a)pyrene	134		110		40-140	20		40
Benzo(b)fluoranthene	138		104		40-140	28		40
Benzo(k)fluoranthene	117		106		40-140	10		40
Chrysene	135		104		40-140	26		40
Acenaphthylene	92		87		40-140	6		40
Anthracene	100		103		40-140	3		40
Benzo(ghi)perylene	129		134		40-140	4		40
Fluorene	92		92		40-140	0		40
Phenanthrene	106		98		40-140	8		40
Dibenzo(a,h)anthracene	115		126		40-140	9		40
Indeno(1,2,3-cd)pyrene	133		126		40-140	5		40
Pyrene	**162**	Q	101		40-140	**46**	Q	40
2-Methylnaphthalene	84		82		40-140	2		40
Pentachlorophenol	108		119		40-140	10		40
Hexachlorobenzene	102		105		40-140	3		40
Hexachloroethane	72		68		40-140	6		40

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 09-11 Batch: WG1261673-2 WG1261673-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	63		59		21-120
Phenol-d6	55		53		10-120
Nitrobenzene-d5	83		80		23-120
2-Fluorobiphenyl	84		82		15-120
2,4,6-Tribromophenol	98		99		10-120
4-Terphenyl-d14	106		105		41-149

PCBS

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-01
Client ID: SB01_1.0-1.5
Sample Location: BROOKLYN, NY

Date Collected: 07/17/19 14:25
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 07/18/19 19:49
Analyst: WR
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 07/18/19 04:41
Cleanup Method: EPA 3665A
Cleanup Date: 07/18/19
Cleanup Method: EPA 3660B
Cleanup Date: 07/18/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	36.8	3.27	1	A
Aroclor 1221	ND		ug/kg	36.8	3.69	1	A
Aroclor 1232	ND		ug/kg	36.8	7.81	1	A
Aroclor 1242	ND		ug/kg	36.8	4.96	1	A
Aroclor 1248	ND		ug/kg	36.8	5.52	1	A
Aroclor 1254	ND		ug/kg	36.8	4.03	1	A
Aroclor 1260	ND		ug/kg	36.8	6.81	1	A
Aroclor 1262	ND		ug/kg	36.8	4.68	1	A
Aroclor 1268	ND		ug/kg	36.8	3.82	1	A
PCBs, Total	ND		ug/kg	36.8	3.27	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	88		30-150	A
Decachlorobiphenyl	55		30-150	A
2,4,5,6-Tetrachloro-m-xylene	78		30-150	B
Decachlorobiphenyl	61		30-150	B

Project Name: 450 JOHNSON AVE.
Lab Number: L1931524
Project Number: 170588001
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-03
Client ID: SB01_8.0-8.5
Sample Location: BROOKLYN, NY

Date Collected: 07/17/19 14:30
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 07/18/19 20:02
Analyst: WR
Percent Solids: 86%

Extraction Method: EPA 3546
Extraction Date: 07/18/19 04:41
Cleanup Method: EPA 3665A
Cleanup Date: 07/18/19
Cleanup Method: EPA 3660B
Cleanup Date: 07/18/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	37.2	3.30	1	A
Aroclor 1221	ND		ug/kg	37.2	3.72	1	A
Aroclor 1232	ND		ug/kg	37.2	7.88	1	A
Aroclor 1242	ND		ug/kg	37.2	5.01	1	A
Aroclor 1248	ND		ug/kg	37.2	5.58	1	A
Aroclor 1254	ND		ug/kg	37.2	4.07	1	A
Aroclor 1260	ND		ug/kg	37.2	6.87	1	A
Aroclor 1262	ND		ug/kg	37.2	4.72	1	A
Aroclor 1268	ND		ug/kg	37.2	3.85	1	A
PCBs, Total	ND		ug/kg	37.2	3.30	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	100		30-150	A
Decachlorobiphenyl	61		30-150	A
2,4,5,6-Tetrachloro-m-xylene	93		30-150	B
Decachlorobiphenyl	75		30-150	B

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 07/18/19 16:18
Analyst: AWS

Extraction Method: EPA 3546
Extraction Date: 07/18/19 00:58
Cleanup Method: EPA 3665A
Cleanup Date: 07/18/19
Cleanup Method: EPA 3660B
Cleanup Date: 07/18/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 01,03 Batch: WG1261257-1						
Aroclor 1016	ND		ug/kg	33.0	2.93	A
Aroclor 1221	ND		ug/kg	33.0	3.31	A
Aroclor 1232	ND		ug/kg	33.0	7.00	A
Aroclor 1242	ND		ug/kg	33.0	4.45	A
Aroclor 1248	ND		ug/kg	33.0	4.95	A
Aroclor 1254	ND		ug/kg	33.0	3.61	A
Aroclor 1260	ND		ug/kg	33.0	6.10	A
Aroclor 1262	ND		ug/kg	33.0	4.19	A
Aroclor 1268	ND		ug/kg	33.0	3.42	A
PCBs, Total	ND		ug/kg	33.0	2.93	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	92		30-150	A
Decachlorobiphenyl	53		30-150	A
2,4,5,6-Tetrachloro-m-xylene	86		30-150	B
Decachlorobiphenyl	65		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.

Project Number: 170588001

Lab Number: L1931524

Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 01,03 Batch: WG1261257-2 WG1261257-3									
Aroclor 1016	88		96		40-140	9		50	A
Aroclor 1260	56		63		40-140	12		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	92		99		30-150	A
Decachlorobiphenyl	53		56		30-150	A
2,4,5,6-Tetrachloro-m-xylene	86		93		30-150	B
Decachlorobiphenyl	67		71		30-150	B

METALS

Project Name: 450 JOHNSON AVE.
Lab Number: L1931524
Project Number: 170588001
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-01
Client ID: SB01_1.0-1.5
Sample Location: BROOKLYN, NY
Date Collected: 07/17/19 14:25
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	6610		mg/kg	8.84	2.39	2	07/18/19 08:30	07/18/19 14:04	EPA 3050B	1,6010D	LC
Antimony, Total	1.30	J	mg/kg	4.42	0.336	2	07/18/19 08:30	07/18/19 14:04	EPA 3050B	1,6010D	LC
Arsenic, Total	5.75		mg/kg	0.884	0.184	2	07/18/19 08:30	07/18/19 14:04	EPA 3050B	1,6010D	LC
Barium, Total	68.4		mg/kg	0.884	0.154	2	07/18/19 08:30	07/18/19 14:04	EPA 3050B	1,6010D	LC
Beryllium, Total	0.336	J	mg/kg	0.442	0.029	2	07/18/19 08:30	07/18/19 14:04	EPA 3050B	1,6010D	LC
Cadmium, Total	1.49		mg/kg	0.884	0.087	2	07/18/19 08:30	07/18/19 14:04	EPA 3050B	1,6010D	LC
Calcium, Total	2820		mg/kg	8.84	3.09	2	07/18/19 08:30	07/18/19 14:04	EPA 3050B	1,6010D	LC
Chromium, Total	15.5		mg/kg	0.884	0.085	2	07/18/19 08:30	07/18/19 14:04	EPA 3050B	1,6010D	LC
Cobalt, Total	7.50		mg/kg	1.77	0.147	2	07/18/19 08:30	07/18/19 14:04	EPA 3050B	1,6010D	LC
Copper, Total	44.9		mg/kg	0.884	0.228	2	07/18/19 08:30	07/18/19 14:04	EPA 3050B	1,6010D	LC
Iron, Total	16100		mg/kg	4.42	0.798	2	07/18/19 08:30	07/18/19 14:04	EPA 3050B	1,6010D	LC
Lead, Total	172		mg/kg	4.42	0.237	2	07/18/19 08:30	07/18/19 14:04	EPA 3050B	1,6010D	LC
Magnesium, Total	1900		mg/kg	8.84	1.36	2	07/18/19 08:30	07/18/19 14:04	EPA 3050B	1,6010D	LC
Manganese, Total	317		mg/kg	0.884	0.140	2	07/18/19 08:30	07/18/19 14:04	EPA 3050B	1,6010D	LC
Mercury, Total	1.96		mg/kg	0.071	0.046	1	07/18/19 06:30	07/18/19 13:08	EPA 7471B	1,7471B	GD
Nickel, Total	15.1		mg/kg	2.21	0.214	2	07/18/19 08:30	07/18/19 14:04	EPA 3050B	1,6010D	LC
Potassium, Total	887		mg/kg	221	12.7	2	07/18/19 08:30	07/18/19 14:04	EPA 3050B	1,6010D	LC
Selenium, Total	0.849	J	mg/kg	1.77	0.228	2	07/18/19 08:30	07/18/19 14:04	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.884	0.250	2	07/18/19 08:30	07/18/19 14:04	EPA 3050B	1,6010D	LC
Sodium, Total	87.6	J	mg/kg	177	2.78	2	07/18/19 08:30	07/18/19 14:04	EPA 3050B	1,6010D	LC
Thallium, Total	ND		mg/kg	1.77	0.278	2	07/18/19 08:30	07/18/19 14:04	EPA 3050B	1,6010D	LC
Vanadium, Total	25.2		mg/kg	0.884	0.179	2	07/18/19 08:30	07/18/19 14:04	EPA 3050B	1,6010D	LC
Zinc, Total	178		mg/kg	4.42	0.259	2	07/18/19 08:30	07/18/19 14:04	EPA 3050B	1,6010D	LC

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-02 Date Collected: 07/17/19 15:30

Client ID: SB02_8.0-8.5 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	6150		mg/kg	9.35	2.52	2	07/18/19 08:30	07/18/19 14:32	EPA 3050B	1,6010D	LC
Antimony, Total	1.02	J	mg/kg	4.68	0.355	2	07/18/19 08:30	07/18/19 14:32	EPA 3050B	1,6010D	LC
Arsenic, Total	4.15		mg/kg	0.935	0.194	2	07/18/19 08:30	07/18/19 14:32	EPA 3050B	1,6010D	LC
Barium, Total	60.8		mg/kg	0.935	0.163	2	07/18/19 08:30	07/18/19 14:32	EPA 3050B	1,6010D	LC
Beryllium, Total	0.411	J	mg/kg	0.468	0.031	2	07/18/19 08:30	07/18/19 14:32	EPA 3050B	1,6010D	LC
Cadmium, Total	1.70		mg/kg	0.935	0.092	2	07/18/19 08:30	07/18/19 14:32	EPA 3050B	1,6010D	LC
Calcium, Total	1200		mg/kg	9.35	3.27	2	07/18/19 08:30	07/18/19 14:32	EPA 3050B	1,6010D	LC
Chromium, Total	17.6		mg/kg	0.935	0.090	2	07/18/19 08:30	07/18/19 14:32	EPA 3050B	1,6010D	LC
Cobalt, Total	9.86		mg/kg	1.87	0.155	2	07/18/19 08:30	07/18/19 14:32	EPA 3050B	1,6010D	LC
Copper, Total	30.0		mg/kg	0.935	0.241	2	07/18/19 08:30	07/18/19 14:32	EPA 3050B	1,6010D	LC
Iron, Total	17200		mg/kg	4.68	0.844	2	07/18/19 08:30	07/18/19 14:32	EPA 3050B	1,6010D	LC
Lead, Total	95.9		mg/kg	4.68	0.251	2	07/18/19 08:30	07/18/19 14:32	EPA 3050B	1,6010D	LC
Magnesium, Total	1330		mg/kg	9.35	1.44	2	07/18/19 08:30	07/18/19 14:32	EPA 3050B	1,6010D	LC
Manganese, Total	212		mg/kg	0.935	0.149	2	07/18/19 08:30	07/18/19 14:32	EPA 3050B	1,6010D	LC
Mercury, Total	0.411		mg/kg	0.076	0.050	1	07/18/19 06:30	07/18/19 13:10	EPA 7471B	1,7471B	GD
Nickel, Total	20.8		mg/kg	2.34	0.226	2	07/18/19 08:30	07/18/19 14:32	EPA 3050B	1,6010D	LC
Potassium, Total	602		mg/kg	234	13.5	2	07/18/19 08:30	07/18/19 14:32	EPA 3050B	1,6010D	LC
Selenium, Total	0.888	J	mg/kg	1.87	0.241	2	07/18/19 08:30	07/18/19 14:32	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.935	0.265	2	07/18/19 08:30	07/18/19 14:32	EPA 3050B	1,6010D	LC
Sodium, Total	64.3	J	mg/kg	187	2.94	2	07/18/19 08:30	07/18/19 14:32	EPA 3050B	1,6010D	LC
Thallium, Total	ND		mg/kg	1.87	0.294	2	07/18/19 08:30	07/18/19 14:32	EPA 3050B	1,6010D	LC
Vanadium, Total	26.7		mg/kg	0.935	0.190	2	07/18/19 08:30	07/18/19 14:32	EPA 3050B	1,6010D	LC
Zinc, Total	431		mg/kg	4.68	0.274	2	07/18/19 08:30	07/18/19 14:32	EPA 3050B	1,6010D	LC

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-03 Date Collected: 07/17/19 14:30

Client ID: SB01_8.0-8.5 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	7760		mg/kg	8.88	2.40	2	07/18/19 08:30	07/18/19 14:37	EPA 3050B	1,6010D	LC
Antimony, Total	0.764	J	mg/kg	4.44	0.337	2	07/18/19 08:30	07/18/19 14:37	EPA 3050B	1,6010D	LC
Arsenic, Total	2.50		mg/kg	0.888	0.185	2	07/18/19 08:30	07/18/19 14:37	EPA 3050B	1,6010D	LC
Barium, Total	33.6		mg/kg	0.888	0.154	2	07/18/19 08:30	07/18/19 14:37	EPA 3050B	1,6010D	LC
Beryllium, Total	0.355	J	mg/kg	0.444	0.029	2	07/18/19 08:30	07/18/19 14:37	EPA 3050B	1,6010D	LC
Cadmium, Total	1.09		mg/kg	0.888	0.087	2	07/18/19 08:30	07/18/19 14:37	EPA 3050B	1,6010D	LC
Calcium, Total	570		mg/kg	8.88	3.11	2	07/18/19 08:30	07/18/19 14:37	EPA 3050B	1,6010D	LC
Chromium, Total	14.0		mg/kg	0.888	0.085	2	07/18/19 08:30	07/18/19 14:37	EPA 3050B	1,6010D	LC
Cobalt, Total	7.79		mg/kg	1.78	0.147	2	07/18/19 08:30	07/18/19 14:37	EPA 3050B	1,6010D	LC
Copper, Total	12.8		mg/kg	0.888	0.229	2	07/18/19 08:30	07/18/19 14:37	EPA 3050B	1,6010D	LC
Iron, Total	15400		mg/kg	4.44	0.802	2	07/18/19 08:30	07/18/19 14:37	EPA 3050B	1,6010D	LC
Lead, Total	5.75		mg/kg	4.44	0.238	2	07/18/19 08:30	07/18/19 14:37	EPA 3050B	1,6010D	LC
Magnesium, Total	2050		mg/kg	8.88	1.37	2	07/18/19 08:30	07/18/19 14:37	EPA 3050B	1,6010D	LC
Manganese, Total	395		mg/kg	0.888	0.141	2	07/18/19 08:30	07/18/19 14:37	EPA 3050B	1,6010D	LC
Mercury, Total	ND		mg/kg	0.073	0.047	1	07/18/19 06:30	07/18/19 13:12	EPA 7471B	1,7471B	GD
Nickel, Total	12.8		mg/kg	2.22	0.215	2	07/18/19 08:30	07/18/19 14:37	EPA 3050B	1,6010D	LC
Potassium, Total	764		mg/kg	222	12.8	2	07/18/19 08:30	07/18/19 14:37	EPA 3050B	1,6010D	LC
Selenium, Total	0.533	J	mg/kg	1.78	0.229	2	07/18/19 08:30	07/18/19 14:37	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.888	0.251	2	07/18/19 08:30	07/18/19 14:37	EPA 3050B	1,6010D	LC
Sodium, Total	48.0	J	mg/kg	178	2.80	2	07/18/19 08:30	07/18/19 14:37	EPA 3050B	1,6010D	LC
Thallium, Total	ND		mg/kg	1.78	0.280	2	07/18/19 08:30	07/18/19 14:37	EPA 3050B	1,6010D	LC
Vanadium, Total	23.8		mg/kg	0.888	0.180	2	07/18/19 08:30	07/18/19 14:37	EPA 3050B	1,6010D	LC
Zinc, Total	24.7		mg/kg	4.44	0.260	2	07/18/19 08:30	07/18/19 14:37	EPA 3050B	1,6010D	LC

Project Name: 450 JOHNSON AVE.
Lab Number: L1931524
Project Number: 170588001
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-04
Client ID: SB09_3.0-3.5
Sample Location: BROOKLYN, NY
Date Collected: 07/17/19 08:40
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	5920		mg/kg	8.46	2.28	2	07/18/19 08:30	07/18/19 14:42	EPA 3050B	1,6010D	LC
Antimony, Total	15.0		mg/kg	4.23	0.322	2	07/18/19 08:30	07/18/19 14:42	EPA 3050B	1,6010D	LC
Arsenic, Total	14.3		mg/kg	0.846	0.176	2	07/18/19 08:30	07/18/19 14:42	EPA 3050B	1,6010D	LC
Barium, Total	176		mg/kg	0.846	0.147	2	07/18/19 08:30	07/18/19 14:42	EPA 3050B	1,6010D	LC
Beryllium, Total	0.330	J	mg/kg	0.423	0.028	2	07/18/19 08:30	07/18/19 14:42	EPA 3050B	1,6010D	LC
Cadmium, Total	3.80		mg/kg	0.846	0.083	2	07/18/19 08:30	07/18/19 14:42	EPA 3050B	1,6010D	LC
Calcium, Total	4600		mg/kg	8.46	2.96	2	07/18/19 08:30	07/18/19 14:42	EPA 3050B	1,6010D	LC
Chromium, Total	25.8		mg/kg	0.846	0.081	2	07/18/19 08:30	07/18/19 14:42	EPA 3050B	1,6010D	LC
Cobalt, Total	8.44		mg/kg	1.69	0.140	2	07/18/19 08:30	07/18/19 14:42	EPA 3050B	1,6010D	LC
Copper, Total	136		mg/kg	0.846	0.218	2	07/18/19 08:30	07/18/19 14:42	EPA 3050B	1,6010D	LC
Iron, Total	23500		mg/kg	4.23	0.764	2	07/18/19 08:30	07/18/19 14:42	EPA 3050B	1,6010D	LC
Lead, Total	1050		mg/kg	4.23	0.227	2	07/18/19 08:30	07/18/19 14:42	EPA 3050B	1,6010D	LC
Magnesium, Total	2180		mg/kg	8.46	1.30	2	07/18/19 08:30	07/18/19 14:42	EPA 3050B	1,6010D	LC
Manganese, Total	630		mg/kg	0.846	0.134	2	07/18/19 08:30	07/18/19 14:42	EPA 3050B	1,6010D	LC
Mercury, Total	2.53		mg/kg	0.071	0.046	1	07/18/19 06:30	07/18/19 13:18	EPA 7471B	1,7471B	GD
Nickel, Total	16.6		mg/kg	2.12	0.205	2	07/18/19 08:30	07/18/19 14:42	EPA 3050B	1,6010D	LC
Potassium, Total	865		mg/kg	212	12.2	2	07/18/19 08:30	07/18/19 14:42	EPA 3050B	1,6010D	LC
Selenium, Total	1.81		mg/kg	1.69	0.218	2	07/18/19 08:30	07/18/19 14:42	EPA 3050B	1,6010D	LC
Silver, Total	0.812	J	mg/kg	0.846	0.240	2	07/18/19 08:30	07/18/19 14:42	EPA 3050B	1,6010D	LC
Sodium, Total	124	J	mg/kg	169	2.67	2	07/18/19 08:30	07/18/19 14:42	EPA 3050B	1,6010D	LC
Thallium, Total	ND		mg/kg	1.69	0.267	2	07/18/19 08:30	07/18/19 14:42	EPA 3050B	1,6010D	LC
Vanadium, Total	27.8		mg/kg	0.846	0.172	2	07/18/19 08:30	07/18/19 14:42	EPA 3050B	1,6010D	LC
Zinc, Total	650		mg/kg	4.23	0.248	2	07/18/19 08:30	07/18/19 14:42	EPA 3050B	1,6010D	LC

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-05 Date Collected: 07/17/19 10:40

Client ID: SB11_5.0-5.5 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	6150		mg/kg	10.4	2.81	2	07/18/19 08:30	07/18/19 14:46	EPA 3050B	1,6010D	LC
Antimony, Total	1.36	J	mg/kg	5.20	0.395	2	07/18/19 08:30	07/18/19 14:46	EPA 3050B	1,6010D	LC
Arsenic, Total	6.50		mg/kg	1.04	0.216	2	07/18/19 08:30	07/18/19 14:46	EPA 3050B	1,6010D	LC
Barium, Total	84.8		mg/kg	1.04	0.181	2	07/18/19 08:30	07/18/19 14:46	EPA 3050B	1,6010D	LC
Beryllium, Total	0.385	J	mg/kg	0.520	0.034	2	07/18/19 08:30	07/18/19 14:46	EPA 3050B	1,6010D	LC
Cadmium, Total	1.67		mg/kg	1.04	0.102	2	07/18/19 08:30	07/18/19 14:46	EPA 3050B	1,6010D	LC
Calcium, Total	1690		mg/kg	10.4	3.64	2	07/18/19 08:30	07/18/19 14:46	EPA 3050B	1,6010D	LC
Chromium, Total	12.1		mg/kg	1.04	0.100	2	07/18/19 08:30	07/18/19 14:46	EPA 3050B	1,6010D	LC
Cobalt, Total	6.49		mg/kg	2.08	0.173	2	07/18/19 08:30	07/18/19 14:46	EPA 3050B	1,6010D	LC
Copper, Total	43.7		mg/kg	1.04	0.268	2	07/18/19 08:30	07/18/19 14:46	EPA 3050B	1,6010D	LC
Iron, Total	18700		mg/kg	5.20	0.939	2	07/18/19 08:30	07/18/19 14:46	EPA 3050B	1,6010D	LC
Lead, Total	369		mg/kg	5.20	0.279	2	07/18/19 08:30	07/18/19 14:46	EPA 3050B	1,6010D	LC
Magnesium, Total	1210		mg/kg	10.4	1.60	2	07/18/19 08:30	07/18/19 14:46	EPA 3050B	1,6010D	LC
Manganese, Total	231		mg/kg	1.04	0.165	2	07/18/19 08:30	07/18/19 14:46	EPA 3050B	1,6010D	LC
Mercury, Total	3.57		mg/kg	0.166	0.108	2	07/18/19 06:30	07/18/19 14:57	EPA 7471B	1,7471B	GD
Nickel, Total	13.5		mg/kg	2.60	0.252	2	07/18/19 08:30	07/18/19 14:46	EPA 3050B	1,6010D	LC
Potassium, Total	452		mg/kg	260	15.0	2	07/18/19 08:30	07/18/19 14:46	EPA 3050B	1,6010D	LC
Selenium, Total	0.894	J	mg/kg	2.08	0.268	2	07/18/19 08:30	07/18/19 14:46	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	1.04	0.294	2	07/18/19 08:30	07/18/19 14:46	EPA 3050B	1,6010D	LC
Sodium, Total	66.0	J	mg/kg	208	3.28	2	07/18/19 08:30	07/18/19 14:46	EPA 3050B	1,6010D	LC
Thallium, Total	ND		mg/kg	2.08	0.328	2	07/18/19 08:30	07/18/19 14:46	EPA 3050B	1,6010D	LC
Vanadium, Total	20.1		mg/kg	1.04	0.211	2	07/18/19 08:30	07/18/19 14:46	EPA 3050B	1,6010D	LC
Zinc, Total	502		mg/kg	5.20	0.305	2	07/18/19 08:30	07/18/19 14:46	EPA 3050B	1,6010D	LC

Project Name: 450 JOHNSON AVE.
Lab Number: L1931524
Project Number: 170588001
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-06
Client ID: TMW04_071719
Sample Location: BROOKLYN, NY
Date Collected: 07/17/19 13:00
Date Received: 07/17/19
Field Prep: None

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Aluminum, Dissolved	0.00824	J	mg/l	0.0100	0.00327	1	07/18/19 09:19	07/18/19 13:03	EPA 3005A	1,6020B	AM
Antimony, Dissolved	0.00057	J	mg/l	0.00400	0.00042	1	07/18/19 09:19	07/18/19 13:03	EPA 3005A	1,6020B	AM
Arsenic, Dissolved	0.00291		mg/l	0.00050	0.00016	1	07/18/19 09:19	07/18/19 13:03	EPA 3005A	1,6020B	AM
Barium, Dissolved	0.1862		mg/l	0.00050	0.00017	1	07/18/19 09:19	07/18/19 13:03	EPA 3005A	1,6020B	AM
Beryllium, Dissolved	ND		mg/l	0.00050	0.00010	1	07/18/19 09:19	07/18/19 13:03	EPA 3005A	1,6020B	AM
Cadmium, Dissolved	ND		mg/l	0.00020	0.00005	1	07/18/19 09:19	07/18/19 13:03	EPA 3005A	1,6020B	AM
Calcium, Dissolved	80.9		mg/l	0.100	0.0394	1	07/18/19 09:19	07/18/19 13:03	EPA 3005A	1,6020B	AM
Chromium, Dissolved	0.00060	J	mg/l	0.00100	0.00017	1	07/18/19 09:19	07/18/19 13:03	EPA 3005A	1,6020B	AM
Cobalt, Dissolved	0.00099		mg/l	0.00050	0.00016	1	07/18/19 09:19	07/18/19 13:03	EPA 3005A	1,6020B	AM
Copper, Dissolved	0.00099	J	mg/l	0.00100	0.00038	1	07/18/19 09:19	07/18/19 13:03	EPA 3005A	1,6020B	AM
Iron, Dissolved	16.5		mg/l	0.0500	0.0191	1	07/18/19 09:19	07/18/19 13:03	EPA 3005A	1,6020B	AM
Lead, Dissolved	ND		mg/l	0.00100	0.00034	1	07/18/19 09:19	07/18/19 13:03	EPA 3005A	1,6020B	AM
Magnesium, Dissolved	29.4		mg/l	0.0700	0.0242	1	07/18/19 09:19	07/18/19 13:03	EPA 3005A	1,6020B	AM
Manganese, Dissolved	1.254		mg/l	0.00100	0.00044	1	07/18/19 09:19	07/18/19 13:03	EPA 3005A	1,6020B	AM
Mercury, Dissolved	ND		mg/l	0.00020	0.00009	1	07/18/19 11:15	07/18/19 14:58	EPA 7470A	1,7470A	GD
Nickel, Dissolved	0.00132	J	mg/l	0.00200	0.00055	1	07/18/19 09:19	07/18/19 13:03	EPA 3005A	1,6020B	AM
Potassium, Dissolved	16.2		mg/l	0.100	0.0309	1	07/18/19 09:19	07/18/19 13:03	EPA 3005A	1,6020B	AM
Selenium, Dissolved	ND		mg/l	0.00500	0.00173	1	07/18/19 09:19	07/18/19 13:03	EPA 3005A	1,6020B	AM
Silver, Dissolved	ND		mg/l	0.00040	0.00016	1	07/18/19 09:19	07/18/19 13:03	EPA 3005A	1,6020B	AM
Sodium, Dissolved	68.2		mg/l	0.100	0.0293	1	07/18/19 09:19	07/18/19 13:03	EPA 3005A	1,6020B	AM
Thallium, Dissolved	ND		mg/l	0.00050	0.00014	1	07/18/19 09:19	07/18/19 13:03	EPA 3005A	1,6020B	AM
Vanadium, Dissolved	ND		mg/l	0.00500	0.00157	1	07/18/19 09:19	07/18/19 13:03	EPA 3005A	1,6020B	AM
Zinc, Dissolved	ND		mg/l	0.01000	0.00341	1	07/18/19 09:19	07/18/19 13:03	EPA 3005A	1,6020B	AM

Project Name: 450 JOHNSON AVE.
Lab Number: L1931524
Project Number: 170588001
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-07
Client ID: TMW01_071719
Sample Location: BROOKLYN, NY
Date Collected: 07/17/19 13:25
Date Received: 07/17/19
Field Prep: None

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Aluminum, Dissolved	0.0460		mg/l	0.0100	0.00327	1	07/18/19 09:19	07/18/19 13:07	EPA 3005A	1,6020B	AM
Antimony, Dissolved	0.00050	J	mg/l	0.00400	0.00042	1	07/18/19 09:19	07/18/19 13:07	EPA 3005A	1,6020B	AM
Arsenic, Dissolved	0.00021	J	mg/l	0.00050	0.00016	1	07/18/19 09:19	07/18/19 13:07	EPA 3005A	1,6020B	AM
Barium, Dissolved	0.1242		mg/l	0.00050	0.00017	1	07/18/19 09:19	07/18/19 13:07	EPA 3005A	1,6020B	AM
Beryllium, Dissolved	ND		mg/l	0.00050	0.00010	1	07/18/19 09:19	07/18/19 13:07	EPA 3005A	1,6020B	AM
Cadmium, Dissolved	ND		mg/l	0.00020	0.00005	1	07/18/19 09:19	07/18/19 13:07	EPA 3005A	1,6020B	AM
Calcium, Dissolved	82.7		mg/l	0.100	0.0394	1	07/18/19 09:19	07/18/19 13:07	EPA 3005A	1,6020B	AM
Chromium, Dissolved	0.00029	J	mg/l	0.00100	0.00017	1	07/18/19 09:19	07/18/19 13:07	EPA 3005A	1,6020B	AM
Cobalt, Dissolved	0.00089		mg/l	0.00050	0.00016	1	07/18/19 09:19	07/18/19 13:07	EPA 3005A	1,6020B	AM
Copper, Dissolved	0.00139		mg/l	0.00100	0.00038	1	07/18/19 09:19	07/18/19 13:07	EPA 3005A	1,6020B	AM
Iron, Dissolved	4.72		mg/l	0.0500	0.0191	1	07/18/19 09:19	07/18/19 13:07	EPA 3005A	1,6020B	AM
Lead, Dissolved	0.00137		mg/l	0.00100	0.00034	1	07/18/19 09:19	07/18/19 13:07	EPA 3005A	1,6020B	AM
Magnesium, Dissolved	17.1		mg/l	0.0700	0.0242	1	07/18/19 09:19	07/18/19 13:07	EPA 3005A	1,6020B	AM
Manganese, Dissolved	0.6106		mg/l	0.00100	0.00044	1	07/18/19 09:19	07/18/19 13:07	EPA 3005A	1,6020B	AM
Mercury, Dissolved	ND		mg/l	0.00020	0.00009	1	07/18/19 11:15	07/18/19 15:00	EPA 7470A	1,7470A	GD
Nickel, Dissolved	0.00155	J	mg/l	0.00200	0.00055	1	07/18/19 09:19	07/18/19 13:07	EPA 3005A	1,6020B	AM
Potassium, Dissolved	12.0		mg/l	0.100	0.0309	1	07/18/19 09:19	07/18/19 13:07	EPA 3005A	1,6020B	AM
Selenium, Dissolved	ND		mg/l	0.00500	0.00173	1	07/18/19 09:19	07/18/19 13:07	EPA 3005A	1,6020B	AM
Silver, Dissolved	ND		mg/l	0.00040	0.00016	1	07/18/19 09:19	07/18/19 13:07	EPA 3005A	1,6020B	AM
Sodium, Dissolved	58.1		mg/l	0.100	0.0293	1	07/18/19 09:19	07/18/19 13:07	EPA 3005A	1,6020B	AM
Thallium, Dissolved	ND		mg/l	0.00050	0.00014	1	07/18/19 09:19	07/18/19 13:07	EPA 3005A	1,6020B	AM
Vanadium, Dissolved	ND		mg/l	0.00500	0.00157	1	07/18/19 09:19	07/18/19 13:07	EPA 3005A	1,6020B	AM
Zinc, Dissolved	0.00974	J	mg/l	0.01000	0.00341	1	07/18/19 09:19	07/18/19 13:07	EPA 3005A	1,6020B	AM

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-08 Date Collected: 07/17/19 11:00

Client ID: TMW03_071719 Date Received: 07/17/19

Sample Location: BROOKLYN, NY Field Prep: None

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Aluminum, Dissolved	0.00334	J	mg/l	0.0100	0.00327	1	07/18/19 09:19	07/18/19 12:54	EPA 3005A	1,6020B	AM
Antimony, Dissolved	0.00113	J	mg/l	0.00400	0.00042	1	07/18/19 09:19	07/18/19 12:54	EPA 3005A	1,6020B	AM
Arsenic, Dissolved	0.00076		mg/l	0.00050	0.00016	1	07/18/19 09:19	07/18/19 12:54	EPA 3005A	1,6020B	AM
Barium, Dissolved	0.2266		mg/l	0.00050	0.00017	1	07/18/19 09:19	07/18/19 12:54	EPA 3005A	1,6020B	AM
Beryllium, Dissolved	ND		mg/l	0.00050	0.00010	1	07/18/19 09:19	07/18/19 12:54	EPA 3005A	1,6020B	AM
Cadmium, Dissolved	ND		mg/l	0.00020	0.00005	1	07/18/19 09:19	07/18/19 12:54	EPA 3005A	1,6020B	AM
Calcium, Dissolved	75.9		mg/l	0.100	0.0394	1	07/18/19 09:19	07/18/19 12:54	EPA 3005A	1,6020B	AM
Chromium, Dissolved	0.00026	J	mg/l	0.00100	0.00017	1	07/18/19 09:19	07/18/19 12:54	EPA 3005A	1,6020B	AM
Cobalt, Dissolved	0.00189		mg/l	0.00050	0.00016	1	07/18/19 09:19	07/18/19 12:54	EPA 3005A	1,6020B	AM
Copper, Dissolved	0.00071	J	mg/l	0.00100	0.00038	1	07/18/19 09:19	07/18/19 12:54	EPA 3005A	1,6020B	AM
Iron, Dissolved	25.8		mg/l	0.0500	0.0191	1	07/18/19 09:19	07/18/19 12:54	EPA 3005A	1,6020B	AM
Lead, Dissolved	ND		mg/l	0.00100	0.00034	1	07/18/19 09:19	07/18/19 12:54	EPA 3005A	1,6020B	AM
Magnesium, Dissolved	54.0		mg/l	0.0700	0.0242	1	07/18/19 09:19	07/18/19 12:54	EPA 3005A	1,6020B	AM
Manganese, Dissolved	1.807		mg/l	0.00100	0.00044	1	07/18/19 09:19	07/18/19 12:54	EPA 3005A	1,6020B	AM
Mercury, Dissolved	ND		mg/l	0.00020	0.00009	1	07/18/19 11:15	07/18/19 15:01	EPA 7470A	1,7470A	GD
Nickel, Dissolved	0.00132	J	mg/l	0.00200	0.00055	1	07/18/19 09:19	07/18/19 12:54	EPA 3005A	1,6020B	AM
Potassium, Dissolved	22.4		mg/l	0.100	0.0309	1	07/18/19 09:19	07/18/19 12:54	EPA 3005A	1,6020B	AM
Selenium, Dissolved	ND		mg/l	0.00500	0.00173	1	07/18/19 09:19	07/18/19 12:54	EPA 3005A	1,6020B	AM
Silver, Dissolved	ND		mg/l	0.00040	0.00016	1	07/18/19 09:19	07/18/19 12:54	EPA 3005A	1,6020B	AM
Sodium, Dissolved	109.		mg/l	0.100	0.0293	1	07/18/19 09:19	07/18/19 12:54	EPA 3005A	1,6020B	AM
Thallium, Dissolved	ND		mg/l	0.00050	0.00014	1	07/18/19 09:19	07/18/19 12:54	EPA 3005A	1,6020B	AM
Vanadium, Dissolved	ND		mg/l	0.00500	0.00157	1	07/18/19 09:19	07/18/19 12:54	EPA 3005A	1,6020B	AM
Zinc, Dissolved	0.00445	J	mg/l	0.01000	0.00341	1	07/18/19 09:19	07/18/19 12:54	EPA 3005A	1,6020B	AM

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931524

Project Number: 170588001 **Report Date:** 08/02/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-05 Batch: WG1261345-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	07/18/19 06:30	07/18/19 12:56	1,7471B	GD

Prep Information

Digestion Method: EPA 7471B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-05 Batch: WG1261381-1										
Aluminum, Total	1.16	J	mg/kg	4.00	1.08	1	07/18/19 08:30	07/18/19 13:36	1,6010D	LC
Antimony, Total	ND		mg/kg	2.00	0.152	1	07/18/19 08:30	07/18/19 13:36	1,6010D	LC
Arsenic, Total	ND		mg/kg	0.400	0.083	1	07/18/19 08:30	07/18/19 13:36	1,6010D	LC
Barium, Total	ND		mg/kg	0.400	0.070	1	07/18/19 08:30	07/18/19 13:36	1,6010D	LC
Beryllium, Total	ND		mg/kg	0.200	0.013	1	07/18/19 08:30	07/18/19 13:36	1,6010D	LC
Cadmium, Total	ND		mg/kg	0.400	0.039	1	07/18/19 08:30	07/18/19 13:36	1,6010D	LC
Calcium, Total	1.49	J	mg/kg	4.00	1.40	1	07/18/19 08:30	07/18/19 16:38	1,6010D	AB
Chromium, Total	0.068	J	mg/kg	0.400	0.038	1	07/18/19 08:30	07/18/19 13:36	1,6010D	LC
Cobalt, Total	ND		mg/kg	0.800	0.066	1	07/18/19 08:30	07/18/19 13:36	1,6010D	LC
Copper, Total	ND		mg/kg	0.400	0.103	1	07/18/19 08:30	07/18/19 13:36	1,6010D	LC
Iron, Total	1.47	J	mg/kg	2.00	0.361	1	07/18/19 08:30	07/18/19 13:36	1,6010D	LC
Lead, Total	ND		mg/kg	2.00	0.107	1	07/18/19 08:30	07/18/19 13:36	1,6010D	LC
Magnesium, Total	ND		mg/kg	4.00	0.616	1	07/18/19 08:30	07/18/19 13:36	1,6010D	LC
Manganese, Total	0.220	J	mg/kg	0.400	0.064	1	07/18/19 08:30	07/18/19 16:38	1,6010D	AB
Nickel, Total	ND		mg/kg	1.00	0.097	1	07/18/19 08:30	07/18/19 13:36	1,6010D	LC
Potassium, Total	6.85	J	mg/kg	100	5.76	1	07/18/19 08:30	07/18/19 13:36	1,6010D	LC
Selenium, Total	ND		mg/kg	0.800	0.103	1	07/18/19 08:30	07/18/19 13:36	1,6010D	LC
Silver, Total	ND		mg/kg	0.400	0.113	1	07/18/19 08:30	07/18/19 13:36	1,6010D	LC
Sodium, Total	10.7	J	mg/kg	80.0	1.26	1	07/18/19 08:30	07/18/19 13:36	1,6010D	LC
Thallium, Total	ND		mg/kg	0.800	0.126	1	07/18/19 08:30	07/18/19 13:36	1,6010D	LC
Vanadium, Total	ND		mg/kg	0.400	0.081	1	07/18/19 08:30	07/18/19 13:36	1,6010D	LC
Zinc, Total	ND		mg/kg	2.00	0.117	1	07/18/19 08:30	07/18/19 13:36	1,6010D	LC

Project Name: 450 JOHNSON AVE.
Project Number: 170588001
Lab Number: L1931524
Report Date: 08/02/19

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 06-08 Batch: WG1261422-1										
Aluminum, Dissolved	ND		mg/l	0.0100	0.00327	1	07/18/19 09:19	07/18/19 12:33	1,6020B	AM
Antimony, Dissolved	0.00063	J	mg/l	0.00400	0.00042	1	07/18/19 09:19	07/18/19 12:33	1,6020B	AM
Arsenic, Dissolved	ND		mg/l	0.00050	0.00016	1	07/18/19 09:19	07/18/19 12:33	1,6020B	AM
Barium, Dissolved	ND		mg/l	0.00050	0.00017	1	07/18/19 09:19	07/18/19 12:33	1,6020B	AM
Beryllium, Dissolved	ND		mg/l	0.00050	0.00010	1	07/18/19 09:19	07/18/19 12:33	1,6020B	AM
Cadmium, Dissolved	ND		mg/l	0.00020	0.00005	1	07/18/19 09:19	07/18/19 12:33	1,6020B	AM
Calcium, Dissolved	ND		mg/l	0.100	0.0394	1	07/18/19 09:19	07/18/19 12:33	1,6020B	AM
Chromium, Dissolved	ND		mg/l	0.00100	0.00017	1	07/18/19 09:19	07/18/19 12:33	1,6020B	AM
Cobalt, Dissolved	ND		mg/l	0.00050	0.00016	1	07/18/19 09:19	07/18/19 12:33	1,6020B	AM
Copper, Dissolved	ND		mg/l	0.00100	0.00038	1	07/18/19 09:19	07/18/19 12:33	1,6020B	AM
Iron, Dissolved	0.0281	J	mg/l	0.0500	0.0191	1	07/18/19 09:19	07/18/19 12:33	1,6020B	AM
Lead, Dissolved	ND		mg/l	0.00100	0.00034	1	07/18/19 09:19	07/18/19 12:33	1,6020B	AM
Magnesium, Dissolved	ND		mg/l	0.0700	0.0242	1	07/18/19 09:19	07/18/19 12:33	1,6020B	AM
Manganese, Dissolved	ND		mg/l	0.00100	0.00044	1	07/18/19 09:19	07/18/19 12:33	1,6020B	AM
Nickel, Dissolved	ND		mg/l	0.00200	0.00055	1	07/18/19 09:19	07/18/19 12:33	1,6020B	AM
Potassium, Dissolved	ND		mg/l	0.100	0.0309	1	07/18/19 09:19	07/18/19 12:33	1,6020B	AM
Selenium, Dissolved	ND		mg/l	0.00500	0.00173	1	07/18/19 09:19	07/18/19 12:33	1,6020B	AM
Silver, Dissolved	ND		mg/l	0.00040	0.00016	1	07/18/19 09:19	07/18/19 12:33	1,6020B	AM
Sodium, Dissolved	0.0348	J	mg/l	0.100	0.0293	1	07/18/19 09:19	07/18/19 12:33	1,6020B	AM
Thallium, Dissolved	0.00024	J	mg/l	0.00050	0.00014	1	07/18/19 09:19	07/18/19 12:33	1,6020B	AM
Vanadium, Dissolved	ND		mg/l	0.00500	0.00157	1	07/18/19 09:19	07/18/19 12:33	1,6020B	AM
Zinc, Dissolved	ND		mg/l	0.01000	0.00341	1	07/18/19 09:19	07/18/19 12:33	1,6020B	AM

Prep Information

Digestion Method: EPA 3005A

Project Name: 450 JOHNSON AVE.
Project Number: 170588001
Lab Number: L1931524
Report Date: 08/02/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 06-08 Batch: WG1261524-1										
Mercury, Dissolved	ND		mg/l	0.00020	0.00009	1	07/18/19 11:15	07/18/19 14:44	1,7470A	GD

Prep Information

Digestion Method: EPA 7470A

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.

Project Number: 170588001

Lab Number: L1931524

Report Date: 08/02/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 Batch: WG1261345-2 SRM Lot Number: D105-540								
Mercury, Total	113		-		72-128	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 Batch: WG1261381-2 SRM Lot Number: D105-540					
Aluminum, Total	59	-	51-149	-	
Antimony, Total	168	-	19-249	-	
Arsenic, Total	114	-	70-130	-	
Barium, Total	93	-	75-125	-	
Beryllium, Total	94	-	75-125	-	
Cadmium, Total	97	-	75-125	-	
Calcium, Total	88	-	73-127	-	
Chromium, Total	94	-	70-130	-	
Cobalt, Total	99	-	75-125	-	
Copper, Total	104	-	75-125	-	
Iron, Total	78	-	38-162	-	
Lead, Total	104	-	71-128	-	
Magnesium, Total	79	-	63-137	-	
Manganese, Total	87	-	76-124	-	
Nickel, Total	101	-	70-131	-	
Potassium, Total	81	-	60-140	-	
Selenium, Total	107	-	63-137	-	
Silver, Total	100	-	69-131	-	
Sodium, Total	98	-	37-162	-	
Thallium, Total	100	-	68-132	-	
Vanadium, Total	94	-	65-135	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.

Project Number: 170588001

Lab Number: L1931524

Report Date: 08/02/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 Batch: WG1261381-2 SRM Lot Number: D105-540					
Zinc, Total	98	-	70-130	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.

Project Number: 170588001

Lab Number: L1931524

Report Date: 08/02/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 06-08 Batch: WG1261422-2					
Aluminum, Dissolved	104	-	80-120	-	
Antimony, Dissolved	91	-	80-120	-	
Arsenic, Dissolved	104	-	80-120	-	
Barium, Dissolved	104	-	80-120	-	
Beryllium, Dissolved	110	-	80-120	-	
Cadmium, Dissolved	104	-	80-120	-	
Calcium, Dissolved	102	-	80-120	-	
Chromium, Dissolved	102	-	80-120	-	
Cobalt, Dissolved	102	-	80-120	-	
Copper, Dissolved	98	-	80-120	-	
Iron, Dissolved	106	-	80-120	-	
Lead, Dissolved	107	-	80-120	-	
Magnesium, Dissolved	110	-	80-120	-	
Manganese, Dissolved	99	-	80-120	-	
Nickel, Dissolved	102	-	80-120	-	
Potassium, Dissolved	106	-	80-120	-	
Selenium, Dissolved	107	-	80-120	-	
Silver, Dissolved	100	-	80-120	-	
Sodium, Dissolved	107	-	80-120	-	
Thallium, Dissolved	103	-	80-120	-	
Vanadium, Dissolved	102	-	80-120	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.

Project Number: 170588001

Lab Number: L1931524

Report Date: 08/02/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 06-08 Batch: WG1261422-2					
Zinc, Dissolved	107	-	80-120	-	
Dissolved Metals - Mansfield Lab Associated sample(s): 06-08 Batch: WG1261524-2					
Mercury, Dissolved	101	-	80-120	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1261345-3 QC Sample: L1931408-01 Client ID: MS Sample												
Mercury, Total	ND	0.145	0.160	110		-	-		80-120	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1261381-3 QC Sample: L1931408-01 Client ID: MS Sample										
Aluminum, Total	4600	178	5130	**297**	Q	-	-	75-125	-	20
Antimony, Total	0.462J	44.6	43.6	98		-	-	75-125	-	20
Arsenic, Total	1.99	10.7	13.1	104		-	-	75-125	-	20
Barium, Total	15.5	178	194	100		-	-	75-125	-	20
Beryllium, Total	0.253J	4.46	4.61	103		-	-	75-125	-	20
Cadmium, Total	0.592J	4.55	4.98	110		-	-	75-125	-	20
Calcium, Total	510	892	1480	109		-	-	75-125	-	20
Chromium, Total	11.1	17.8	27.2	90		-	-	75-125	-	20
Cobalt, Total	4.26	44.6	46.0	94		-	-	75-125	-	20
Copper, Total	10.3	22.3	32.9	101		-	-	75-125	-	20
Iron, Total	8190	89.2	8470	**314**	Q	-	-	75-125	-	20
Lead, Total	12.8	45.5	59.3	102		-	-	75-125	-	20
Magnesium, Total	1970	892	2600	**71**	Q	-	-	75-125	-	20
Manganese, Total	113	44.6	169	**126**	Q	-	-	75-125	-	20
Nickel, Total	23.3	44.6	63.1	89		-	-	75-125	-	20
Potassium, Total	355	892	1240	99		-	-	75-125	-	20
Selenium, Total	0.357J	10.7	11.3	106		-	-	75-125	-	20
Silver, Total	ND	26.8	25.6	96		-	-	75-125	-	20
Sodium, Total	54.1J	892	972	109		-	-	75-125	-	20
Thallium, Total	ND	10.7	10.2	95		-	-	75-125	-	20
Vanadium, Total	20.1	44.6	59.4	88		-	-	75-125	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1261381-3 QC Sample: L1931408-01 Client ID: MS Sample									
Zinc, Total	24.3	44.6	68.6	99	-	-	75-125	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 06-08 QC Batch ID: WG1261422-3 QC Sample: L1931524-08 Client ID: TMW03_071719										
Aluminum, Dissolved	0.00334J	2	2.19	110		-	-	75-125	-	20
Antimony, Dissolved	0.00113J	0.5	0.7222	**144**	Q	-	-	75-125	-	20
Arsenic, Dissolved	0.00076	0.12	0.1312	109		-	-	75-125	-	20
Barium, Dissolved	0.2266	2	2.419	110		-	-	75-125	-	20
Beryllium, Dissolved	ND	0.05	0.05579	112		-	-	75-125	-	20
Cadmium, Dissolved	ND	0.051	0.05340	105		-	-	75-125	-	20
Calcium, Dissolved	75.9	10	91.2	**153**	Q	-	-	75-125	-	20
Chromium, Dissolved	0.00026J	0.2	0.2183	109		-	-	75-125	-	20
Cobalt, Dissolved	0.00189	0.5	0.5418	108		-	-	75-125	-	20
Copper, Dissolved	0.00071J	0.25	0.2598	104		-	-	75-125	-	20
Iron, Dissolved	25.8	1	28.5	**270**	Q	-	-	75-125	-	20
Lead, Dissolved	ND	0.51	0.5613	110		-	-	75-125	-	20
Magnesium, Dissolved	54.0	10	68.1	**141**	Q	-	-	75-125	-	20
Manganese, Dissolved	1.807	0.5	2.436	**126**	Q	-	-	75-125	-	20
Nickel, Dissolved	0.00132J	0.5	0.5364	107		-	-	75-125	-	20
Potassium, Dissolved	22.4	10	34.5	121		-	-	75-125	-	20
Selenium, Dissolved	ND	0.12	0.136	113		-	-	75-125	-	20
Silver, Dissolved	ND	0.05	0.05278	106		-	-	75-125	-	20
Sodium, Dissolved	109.	10	117	80		-	-	75-125	-	20
Thallium, Dissolved	ND	0.12	0.1295	108		-	-	75-125	-	20
Vanadium, Dissolved	ND	0.5	0.5445	109		-	-	75-125	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 06-08 QC Batch ID: WG1261422-3 QC Sample: L1931524-08 Client ID: TMW03_071719									
Zinc, Dissolved	0.00445J	0.5	0.5570	111	-	-	75-125	-	20
Dissolved Metals - Mansfield Lab Associated sample(s): 06-08 QC Batch ID: WG1261524-3 QC Sample: L1930447-11 Client ID: MS Sample									
Mercury, Dissolved	ND	0.005	0.00502	100	-	-	75-125	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.

Project Number: 170588001

Lab Number: L1931524

Report Date: 08/02/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1261345-4 QC Sample: L1931408-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/kg	NC		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	Native Sample	Duplicate Sample	Units	RPD		RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1261381-4 QC Sample: L1931408-01 Client ID: DUP Sample						
Aluminum, Total	4600	4210	mg/kg	9		20
Antimony, Total	0.462J	0.464J	mg/kg	NC		20
Arsenic, Total	1.99	2.12	mg/kg	6		20
Barium, Total	15.5	18.1	mg/kg	15		20
Beryllium, Total	0.253J	0.245J	mg/kg	NC		20
Cadmium, Total	0.592J	0.605J	mg/kg	NC		20
Calcium, Total	510	575	mg/kg	12		20
Chromium, Total	11.1	8.84	mg/kg	**23**	Q	20
Cobalt, Total	4.26	4.13	mg/kg	3		20
Copper, Total	10.3	10.3	mg/kg	0		20
Iron, Total	8190	8060	mg/kg	2		20
Lead, Total	12.8	15.2	mg/kg	17		20
Magnesium, Total	1970	1770	mg/kg	11		20
Manganese, Total	113	118	mg/kg	4		20
Nickel, Total	23.3	21.3	mg/kg	9		20
Potassium, Total	355	284	mg/kg	**22**	Q	20
Selenium, Total	0.357J	0.456J	mg/kg	NC		20
Silver, Total	ND	ND	mg/kg	NC		20
Sodium, Total	54.1J	49.7J	mg/kg	NC		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.

Project Number: 170588001

Lab Number: L1931524

Report Date: 08/02/19

Parameter	Native Sample	Duplicate Sample	Units	RPD		RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG1261381-4 QC Sample: L1931408-01 Client ID: DUP Sample						
Thallium, Total	ND	ND	mg/kg	NC		20
Vanadium, Total	20.1	15.4	mg/kg	**26**	Q	20
Zinc, Total	24.3	28.3	mg/kg	15		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	Native Sample	Duplicate Sample	Units	RPD		RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 06-08 QC Batch ID: WG1261422-4 QC Sample: L1931524-08 Client ID: TMW03_071719						
Aluminum, Dissolved	0.00334J	0.00328J	mg/l	NC		20
Antimony, Dissolved	0.00113J	0.00308J	mg/l	NC		20
Arsenic, Dissolved	0.00076	0.00102	mg/l	**29**	Q	20
Barium, Dissolved	0.2266	0.2258	mg/l	0		20
Beryllium, Dissolved	ND	ND	mg/l	NC		20
Cadmium, Dissolved	ND	ND	mg/l	NC		20
Calcium, Dissolved	75.9	75.1	mg/l	1		20
Chromium, Dissolved	0.00026J	0.00026J	mg/l	NC		20
Cobalt, Dissolved	0.00189	0.00190	mg/l	1		20
Copper, Dissolved	0.00071J	0.00077J	mg/l	NC		20
Iron, Dissolved	25.8	25.7	mg/l	0		20
Lead, Dissolved	ND	ND	mg/l	NC		20
Magnesium, Dissolved	54.0	53.6	mg/l	1		20
Manganese, Dissolved	1.807	1.800	mg/l	0		20
Nickel, Dissolved	0.00132J	0.00130J	mg/l	NC		20
Potassium, Dissolved	22.4	22.1	mg/l	1		20
Selenium, Dissolved	ND	ND	mg/l	NC		20
Silver, Dissolved	ND	ND	mg/l	NC		20
Sodium, Dissolved	109.	110	mg/l	1		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 06-08 QC Batch ID: WG1261422-4 QC Sample: L1931524-08 Client ID: TMW03_071719					
Thallium, Dissolved	ND	0.00015J	mg/l	NC	20
Vanadium, Dissolved	ND	ND	mg/l	NC	20
Zinc, Dissolved	0.00445J	0.00398J	mg/l	NC	20
Dissolved Metals - Mansfield Lab Associated sample(s): 06-08 QC Batch ID: WG1261524-4 QC Sample: L1930447-11 Client ID: DUP Sample					
Mercury, Dissolved	ND	ND	mg/l	NC	20

INORGANICS
&
MISCELLANEOUS

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-01
Client ID: SB01_1.0-1.5
Sample Location: BROOKLYN, NY

Date Collected: 07/17/19 14:25
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.5		%	0.100	NA	1	-	07/18/19 04:27	121,2540G	YA

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-02
Client ID: SB02_8.0-8.5
Sample Location: BROOKLYN, NY

Date Collected: 07/17/19 15:30
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.2		%	0.100	NA	1	-	07/18/19 04:27	121,2540G	YA

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-03
Client ID: SB01_8.0-8.5
Sample Location: BROOKLYN, NY

Date Collected: 07/17/19 14:30
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	86.1		%	0.100	NA	1	-	07/18/19 04:27	121,2540G	YA

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-04
Client ID: SB09_3.0-3.5
Sample Location: BROOKLYN, NY

Date Collected: 07/17/19 08:40
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.5		%	0.100	NA	1	-	07/18/19 04:27	121,2540G	YA

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

SAMPLE RESULTS

Lab ID: L1931524-05
Client ID: SB11_5.0-5.5
Sample Location: BROOKLYN, NY

Date Collected: 07/17/19 10:40
Date Received: 07/17/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	75.7		%	0.100	NA	1	-	07/18/19 04:27	121,2540G	YA

Lab Duplicate Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.

Project Number: 170588001

Lab Number: L1931524

Report Date: 08/02/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG1261301-1 QC Sample: L1931582-06 Client ID: DUP Sample						
Solids, Total	86.8	85.7	%	1		20

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1931524-01A	Vial MeOH preserved	A	NA		2.8	Y	Absent		NYTCL-8260HLW(14)
L1931524-01B	Vial water preserved	A	NA		2.8	Y	Absent	18-JUL-19 03:16	NYTCL-8260HLW(14)
L1931524-01C	Vial water preserved	A	NA		2.8	Y	Absent	18-JUL-19 03:16	NYTCL-8260HLW(14)
L1931524-01D	Plastic 2oz unpreserved for TS	A	NA		2.8	Y	Absent		TS(7)
L1931524-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.8	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1931524-01F	Glass 60mL/2oz unpreserved	A	NA		2.8	Y	Absent		NYTCL-8270(14),NYTCL-8082(14)
L1931524-01G	Glass 120ml/4oz unpreserved	A	NA		2.8	Y	Absent		NYTCL-8270(14),NYTCL-8082(14)
L1931524-02A	Vial MeOH preserved	A	NA		2.8	Y	Absent		NYTCL-8260HLW(14)
L1931524-02B	Vial water preserved	A	NA		2.8	Y	Absent	18-JUL-19 03:16	NYTCL-8260HLW(14)
L1931524-02C	Vial water preserved	A	NA		2.8	Y	Absent	18-JUL-19 03:16	NYTCL-8260HLW(14)
L1931524-02D	Plastic 2oz unpreserved for TS	A	NA		2.8	Y	Absent		TS(7)
L1931524-02E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.8	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1931524-02F	Glass 60mL/2oz unpreserved	A	NA		2.8	Y	Absent		NYTCL-8270(14)
L1931524-02G	Glass 120ml/4oz unpreserved	A	NA		2.8	Y	Absent		NYTCL-8270(14)
L1931524-03A	Vial MeOH preserved	A	NA		2.8	Y	Absent		NYTCL-8260HLW(14)
L1931524-03B	Vial water preserved	A	NA		2.8	Y	Absent	18-JUL-19 03:16	NYTCL-8260HLW(14)
L1931524-03C	Vial water preserved	A	NA		2.8	Y	Absent	18-JUL-19 03:16	NYTCL-8260HLW(14)
L1931524-03D	Plastic 2oz unpreserved for TS	A	NA		2.8	Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1931524-03E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.8	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1931524-03F	Glass 60mL/2oz unpreserved	A	NA		2.8	Y	Absent		NYTCL-8270(14),NYTCL-8082(14)
L1931524-03G	Glass 120ml/4oz unpreserved	A	NA		2.8	Y	Absent		NYTCL-8270(14),NYTCL-8082(14)
L1931524-04A	Vial MeOH preserved	A	NA		2.8	Y	Absent		NYTCL-8260HLW(14)
L1931524-04B	Vial water preserved	A	NA		2.8	Y	Absent	18-JUL-19 03:16	NYTCL-8260HLW(14)
L1931524-04C	Vial water preserved	A	NA		2.8	Y	Absent	18-JUL-19 03:16	NYTCL-8260HLW(14)
L1931524-04D	Plastic 2oz unpreserved for TS	A	NA		2.8	Y	Absent		TS(7)
L1931524-04E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.8	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1931524-04F	Glass 60mL/2oz unpreserved	A	NA		2.8	Y	Absent		NYTCL-8270(14)
L1931524-04G	Glass 120ml/4oz unpreserved	A	NA		2.8	Y	Absent		NYTCL-8270(14)
L1931524-05A	Vial MeOH preserved	A	NA		2.8	Y	Absent		NYTCL-8260HLW(14)
L1931524-05B	Vial water preserved	A	NA		2.8	Y	Absent	18-JUL-19 03:16	NYTCL-8260HLW(14)
L1931524-05C	Vial water preserved	A	NA		2.8	Y	Absent	18-JUL-19 03:16	NYTCL-8260HLW(14)
L1931524-05D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		2.8	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1931524-05E	Glass 60mL/2oz unpreserved	A	NA		2.8	Y	Absent		NYTCL-8270(14),TS(7),HOLD-8082(14)
L1931524-05F	Glass 120ml/4oz unpreserved	A	NA		2.8	Y	Absent		NYTCL-8270(14),TS(7),HOLD-8082(14)
L1931524-06A	Vial HCl preserved	A	NA		2.8	Y	Absent		NYTCL-8260(14)
L1931524-06B	Vial HCl preserved	A	NA		2.8	Y	Absent		NYTCL-8260(14)
L1931524-06C	Vial HCl preserved	A	NA		2.8	Y	Absent		NYTCL-8260(14)

*Values in parentheses indicate holding time in days

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1931524-06D	Plastic 250ml HNO3 preserved split	A	7	<2	2.8	N	Absent		CU-6020S(180),K-6020S(180),SE-6020S(180),V-6020S(180),MN-6020S(180),BE-6020S(180),CO-6020S(180),MG-6020S(180),ZN-6020S(180),CA-6020S(180),CR-6020S(180),FE-6020S(180),BA-6020S(180),NA-6020S(180),NI-6020S(180),PB-6020S(180),TL-6020S(180),AG-6020S(180),AS-6020S(180),SB-6020S(180),AL-6020S(180),CD-6020S(180),HG-S(28)
L1931524-06E	Amber 250ml unpreserved	A	7	7	2.8	Y	Absent		L-EXT-8270(7),L-EXT-8270SIM(7)
L1931524-06F	Amber 250ml unpreserved	A	7	7	2.8	Y	Absent		L-EXT-8270(7),L-EXT-8270SIM(7)
L1931524-06G	Amber 250ml unpreserved	A	7	7	2.8	Y	Absent		-
L1931524-06H	Amber 250ml unpreserved	A	7	7	2.8	Y	Absent		-
L1931524-07A	Vial HCl preserved	A	NA		2.8	Y	Absent		NYTCL-8260(14)
L1931524-07B	Vial HCl preserved	A	NA		2.8	Y	Absent		NYTCL-8260(14)
L1931524-07C	Vial HCl preserved	A	NA		2.8	Y	Absent		NYTCL-8260(14)
L1931524-07D	Plastic 250ml HNO3 preserved split	A	7	<2	2.8	N	Absent		CU-6020S(180),K-6020S(180),SE-6020S(180),V-6020S(180),MN-6020S(180),BE-6020S(180),CO-6020S(180),MG-6020S(180),ZN-6020S(180),CA-6020S(180),CR-6020S(180),FE-6020S(180),BA-6020S(180),NA-6020S(180),NI-6020S(180),PB-6020S(180),TL-6020S(180),AG-6020S(180),AS-6020S(180),SB-6020S(180),AL-6020S(180),CD-6020S(180),HG-S(28)
L1931524-07E	Amber 250ml unpreserved	A	7	7	2.8	Y	Absent		L-EXT-8270(7),L-EXT-8270SIM(7)
L1931524-07F	Amber 250ml unpreserved	A	7	7	2.8	Y	Absent		L-EXT-8270(7),L-EXT-8270SIM(7)
L1931524-07G	Amber 250ml unpreserved	A	7	7	2.8	Y	Absent		-
L1931524-07H	Amber 250ml unpreserved	A	7	7	2.8	Y	Absent		-
L1931524-08A	Vial HCl preserved	A	NA		2.8	Y	Absent		NYTCL-8260(14)
L1931524-08B	Vial HCl preserved	A	NA		2.8	Y	Absent		NYTCL-8260(14)
L1931524-08C	Vial HCl preserved	A	NA		2.8	Y	Absent		NYTCL-8260(14)

*Values in parentheses indicate holding time in days

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931524
Report Date: 08/02/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1931524-08D	Plastic 250ml HNO3 preserved split	A	7	<2	2.8	N	Absent		CU-6020S(180),K-6020S(180),SE-6020S(180),V-6020S(180),MN-6020S(180),BE-6020S(180),CO-6020S(180),MG-6020S(180),ZN-6020S(180),CA-6020S(180),CR-6020S(180),FE-6020S(180),BA-6020S(180),NA-6020S(180),NI-6020S(180),PB-6020S(180),TL-6020S(180),AG-6020S(180),AS-6020S(180),SB-6020S(180),AL-6020S(180),CD-6020S(180),HG-S(28)
L1931524-08E	Amber 250ml unpreserved	A	7	7	2.8	Y	Absent		L-EXT-8270(7),L-EXT-8270SIM(7)
L1931524-08F	Amber 250ml unpreserved	A	7	7	2.8	Y	Absent		L-EXT-8270(7),L-EXT-8270SIM(7)
L1931524-08G	Amber 250ml unpreserved	A	7	7	2.8	Y	Absent		-
L1931524-08H	Amber 250ml unpreserved	A	7	7	2.8	Y	Absent		-
L1931524-09A	Amber 250ml unpreserved	A	7	7	2.8	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1931524-09B	Amber 250ml unpreserved	A	7	7	2.8	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1931524-10A	Amber 250ml unpreserved	A	7	7	2.8	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1931524-10B	Amber 250ml unpreserved	A	7	7	2.8	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1931524-11A	Amber 250ml unpreserved	A	7	7	2.8	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1931524-11B	Amber 250ml unpreserved	A	7	7	2.8	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)

*Values in parentheses indicate holding time in days

Project Name:	450 JOHNSON AVE.	**Lab Number:**	L1931524
Project Number:	170588001	**Report Date:**	08/02/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	450 JOHNSON AVE.	**Lab Number:**	L1931524
Project Number:	170588001	**Report Date:**	08/02/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	450 JOHNSON AVE.	**Lab Number:**	L1931524
Project Number:	170588001	**Report Date:**	08/02/19

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 2

Date Rec'd in Lab: 7/18/19

ALPHA Job #: L1931524

Client Information

Client: Langan
Address: 360 W 31st St
NY NY 10001
Phone: 2124795405
Fax: 2124792727
Email: steungalangan.com

Project Information

Project Name: 458 Johnson ave
Project Location: Brooklyn NY
Project #: 170588004
(Use Project name as Project #) ☐
Project Manager: Julia Leung
ALPHAQuote #: —

Turn-Around Time

Standard ☐ ASAP
Rush (only if pre approved) ☒ Due Date:
# of Days: 24-48hrs

Deliverables

☐ ASP-A ☒ ASP-B
☐ EQuIS (1 File) ☒ EQuIS (4 File)
☐ Other

Billing Information

☐ Same as Client Info
PO # concur

Regulatory Requirement

☒ NY TOGS ☒ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information

Please identify below location of applicable disposal facilities.

Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☒ Lab to do
(Please Specify below)
preserve metals SC

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TCL VOCs	TCL SVOCs	PCBs	Metals	PCBs hold				Sample Specific Comments	Total Bottle
31524-01	SB01_1.0-1.5	7/17/19	1425	S	DC	X	X	X	X						7
-02	SB12_8.0-8.5	7/17/19	1530	S	DC	X	X		X	X					7
-03	SB01_8.0-8.5	7/17/19	1430	S	DC	X	X	X	X						7
-04	SB09_3.0-3.5	7/17/19	0840	S	DC	X	X		X	X					7
-05	SB11_5.0-5.5	7/17/19	1040	S	DC	X	X		X	X					6

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	A	A	A	A	A			
Preservative	B	A	A	A	A			

Relinquished By:	Date/Time	Received By:	Date/Time
	7/17/19 1555	Romeik Hackson AAL	7/17 1555
	7/17 1750		7/17/19 2000
AAL	7/18/19 0110		7/18/19 01:10

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 2 of 2

Date Rec'd in Lab: 7/18/19

ALPHA Job #: L1931524

Client Information

Client: Langan
Address: 360 W 31st St
NY NY 10001
Phone: 212 479 5400
Fax: 212 479 2727
Email: jleung@langan.com

Project Information

Project Name: 450 Johnson Ave
Project Location: Brooklyn NY
Project #: 170588001
(Use Project name as Project #) ☐
Project Manager: Julia Leung
ALPHAQuote #:

Turn-Around Time

Standard ☐ Due Date:
Rush (only if pre approved) ☒ 24-48 # of Days: 5

Deliverables

☐ ASP-A ☒ ASP-B
☐ EQuIS (1 File) ☒ EQuIS (4 File)
☐ Other

Billing Information

☐ Same as Client Info
PO # CONCUR

Regulatory Requirement

☒ NY TOGS ☒ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

* D Field Filtered

Please specify Metals or TAL.

ANALYSIS

TCL VOCs | TCL SVOCs | TCL/STARS HOLD | Dissolved Metals

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☒ Lab to do
(Please Specify below)

Total Bottle

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TCL VOCs	TCL SVOCs	TCL/STARS HOLD	Dissolved Metals	Sample Specific Comments	Total Bottle
31524-06	TMW04	7/17/19	1300	GW	DC	X	X	X	X	lab to preserve metals	8
-07	TMW01	7/17/19	1325	GW	DC	X	X	X	X	lab preserve metals	8
-08	TMW03	7/17/19	1400	GW	DC	X	X	X	X	lab preserve metals	8

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	A	A	A	A	
Preservative	B	A	A	A	

Relinquished By:	Date/Time	Received By:	Date/Time
	7/17/19 1555		7/17 1555
	7/17 1730		7/17/19 2000
TAL	7/18/19 0110		7/18/19 0110

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L1931803
Client:	Langan Engineering & Environmental 21 Penn Plaza 360 W. 31st Street, 8th Floor New York, NY 10001-2727
ATTN:	Julia Leung
Phone:	(212) 479-5400
Project Name:	450 JOHNSON AVE.
Project Number:	170588001
Report Date:	07/23/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1931803-01	TMW02_071819	WATER	BROOKLYN, NY	07/18/19 09:17	07/18/19
L1931803-02	TMW08_071819	WATER	BROOKLYN, NY	07/18/19 11:25	07/18/19
L1931803-03	DUP02_071819	WATER	BROOKLYN, NY	07/18/19 00:00	07/18/19
L1931803-04	SB08_5.0-5.5	SOIL	BROOKLYN, NY	07/18/19 11:20	07/18/19
L1931803-05	SB08_14.0-14.5	SOIL	BROOKLYN, NY	07/18/19 11:10	07/18/19
L1931803-06	SB12_6.5-7.0	SOIL	BROOKLYN, NY	07/18/19 10:15	07/18/19
L1931803-07	SB07_4.5-5.0	SOIL	BROOKLYN, NY	07/18/19 15:00	07/18/19
L1931803-08	SB14_4.5-5.0	SOIL	BROOKLYN, NY	07/18/19 14:05	07/18/19
L1931803-09	TMW02_071819 (UF SVOC)	WATER	BROOKLYN, NY	07/18/19 09:17	07/18/19
L1931803-10	TMW08_071819 (UF SVOC)	WATER	BROOKLYN, NY	07/18/19 11:25	07/18/19
L1931803-11	DUP02_071819 (UF SVOC)	WATER	BROOKLYN, NY	07/18/19 00:00	07/18/19

Project Name:	450 JOHNSON AVE.	**Lab Number:**	L1931803
Project Number:	170588001	**Report Date:**	07/23/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803
Project Number: 170588001 **Report Date:** 07/23/19

Case Narrative (continued)

Report Submission

July 23, 2019: This final report includes the results of all requested analyses.

July 23, 2019: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

The Client IDs and analyses performed were specified by the client.

Volatile Organics

L1931803-07: The internal standard (IS) response for 1,4-dichlorobenzene-d4 (42%) and the surrogate recovery for 4-bromofluorobenzene (137%) were outside the acceptance criteria; however, re-analysis achieved similar results: 1,4-dichlorobenzene-d4 (41%) and 4-bromofluorobenzene (143%). The results of both analyses are reported.

Semivolatile Organics

The WG1261662-2/-3 LCS/LCSD recoveries, associated with L1931803-09 through -11, are below the acceptance criteria for benzoic acid (0%/0%); however, it has been identified as a "difficult" analyte. The results of the associated samples are reported.

Total Metals

L1931803-04 through -08: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by matrix interferences encountered during analysis.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Michelle M. Morris

Title: Technical Director/Representative Date: 07/23/19

ORGANICS

VOLATILES

Project Name: 450 JOHNSON AVE.
Lab Number: L1931803
Project Number: 170588001
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-01
Client ID: TMW02_071819
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 09:17
Date Received: 07/18/19
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/19/19 12:26
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14	1
1,1-Dichloropropene	ND		ug/l	2.5	0.70	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-01 Date Collected: 07/18/19 09:17

Client ID: TMW02_071819 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	0.91	J	ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
Xylenes, Total	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
1,2-Dichloroethene, Total	ND		ug/l	2.5	0.70	1
Dibromomethane	ND		ug/l	5.0	1.0	1
1,2,3-Trichloropropane	ND		ug/l	2.5	0.70	1
Acrylonitrile	ND		ug/l	5.0	1.5	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
Vinyl acetate	ND		ug/l	5.0	1.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
2,2-Dichloropropane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,3-Dichloropropane	ND		ug/l	2.5	0.70	1
1,1,1,2-Tetrachloroethane	ND		ug/l	2.5	0.70	1
Bromobenzene	ND		ug/l	2.5	0.70	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
o-Chlorotoluene	ND		ug/l	2.5	0.70	1
p-Chlorotoluene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Hexachlorobutadiene	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
Naphthalene	2.0	J	ug/l	2.5	0.70	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-01 Date Collected: 07/18/19 09:17

Client ID: TMW02_071819 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,4-Dioxane	ND		ug/l	250	61.	1
p-Diethylbenzene	ND		ug/l	2.0	0.70	1
p-Ethyltoluene	ND		ug/l	2.0	0.70	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	0.54	1
Ethyl ether	ND		ug/l	2.5	0.70	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.70	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	86		70-130
Toluene-d8	87		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	96		70-130

Project Name: 450 JOHNSON AVE.
Lab Number: L1931803
Project Number: 170588001
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-02
Client ID: TMW08_071819
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 11:25
Date Received: 07/18/19
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/19/19 12:52
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	13		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	64		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14	1
1,1-Dichloropropene	ND		ug/l	2.5	0.70	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	0.23	J	ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	220	E	ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	0.31	J	ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	2.3	J	ug/l	2.5	0.70	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-02 Date Collected: 07/18/19 11:25

Client ID: TMW08_071819 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Trichloroethene	72		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	7.9		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
Xylenes, Total	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	170		ug/l	2.5	0.70	1
1,2-Dichloroethene, Total	170	J	ug/l	2.5	0.70	1
Dibromomethane	ND		ug/l	5.0	1.0	1
1,2,3-Trichloropropane	ND		ug/l	2.5	0.70	1
Acrylonitrile	ND		ug/l	5.0	1.5	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	19		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	3.5	J	ug/l	5.0	1.9	1
Vinyl acetate	ND		ug/l	5.0	1.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	2.2	J	ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
2,2-Dichloropropane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,3-Dichloropropane	ND		ug/l	2.5	0.70	1
1,1,1,2-Tetrachloroethane	ND		ug/l	2.5	0.70	1
Bromobenzene	ND		ug/l	2.5	0.70	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
o-Chlorotoluene	ND		ug/l	2.5	0.70	1
p-Chlorotoluene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Hexachlorobutadiene	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
Naphthalene	1.4	J	ug/l	2.5	0.70	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-02 Date Collected: 07/18/19 11:25

Client ID: TMW08_071819 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,4-Dioxane	ND		ug/l	250	61.	1
p-Diethylbenzene	ND		ug/l	2.0	0.70	1
p-Ethyltoluene	ND		ug/l	2.0	0.70	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	0.54	1
Ethyl ether	ND		ug/l	2.5	0.70	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.70	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	86		70-130
Toluene-d8	87		70-130
4-Bromofluorobenzene	88		70-130
Dibromofluoromethane	100		70-130

Project Name: 450 JOHNSON AVE.
Lab Number: L1931803
Project Number: 170588001
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-02 D
Client ID: TMW08_071819
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 11:25
Date Received: 07/18/19
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/22/19 08:45
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Vinyl chloride	170		ug/l	4.0	0.28	4

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	85		70-130
Toluene-d8	85		70-130
4-Bromofluorobenzene	88		70-130
Dibromofluoromethane	100		70-130

Project Name: 450 JOHNSON AVE.
Lab Number: L1931803
Project Number: 170588001
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-03
Client ID: DUP02_071819
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 00:00
Date Received: 07/18/19
Field Prep: Refer to COC

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/19/19 13:17
Analyst: KJD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14	1
1,1-Dichloropropene	ND		ug/l	2.5	0.70	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	0.08	J	ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-03 Date Collected: 07/18/19 00:00

Client ID: DUP02_071819 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	0.78	J	ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
Xylenes, Total	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
1,2-Dichloroethene, Total	ND		ug/l	2.5	0.70	1
Dibromomethane	ND		ug/l	5.0	1.0	1
1,2,3-Trichloropropane	ND		ug/l	2.5	0.70	1
Acrylonitrile	ND		ug/l	5.0	1.5	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
Vinyl acetate	ND		ug/l	5.0	1.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
2,2-Dichloropropane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,3-Dichloropropane	ND		ug/l	2.5	0.70	1
1,1,1,2-Tetrachloroethane	ND		ug/l	2.5	0.70	1
Bromobenzene	ND		ug/l	2.5	0.70	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
o-Chlorotoluene	ND		ug/l	2.5	0.70	1
p-Chlorotoluene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Hexachlorobutadiene	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
Naphthalene	1.3	J	ug/l	2.5	0.70	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-03 Date Collected: 07/18/19 00:00

Client ID: DUP02_071819 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Refer to COC

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,4-Dioxane	ND		ug/l	250	61.	1
p-Diethylbenzene	ND		ug/l	2.0	0.70	1
p-Ethyltoluene	ND		ug/l	2.0	0.70	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	0.54	1
Ethyl ether	ND		ug/l	2.5	0.70	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.70	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	85		70-130
Toluene-d8	88		70-130
4-Bromofluorobenzene	88		70-130
Dibromofluoromethane	96		70-130

Project Name: 450 JOHNSON AVE.
Lab Number: L1931803
Project Number: 170588001
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-04
Client ID: SB08_5.0-5.5
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 11:20
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/19 17:23
Analyst: JC
Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	3.4	1.6	1
1,1-Dichloroethane	ND		ug/kg	0.68	0.10	1
Chloroform	ND		ug/kg	1.0	0.10	1
Carbon tetrachloride	ND		ug/kg	0.68	0.16	1
1,2-Dichloropropane	ND		ug/kg	0.68	0.09	1
Dibromochloromethane	ND		ug/kg	0.68	0.10	1
1,1,2-Trichloroethane	ND		ug/kg	0.68	0.18	1
Tetrachloroethene	8.7		ug/kg	0.34	0.13	1
Chlorobenzene	ND		ug/kg	0.34	0.09	1
Trichlorofluoromethane	ND		ug/kg	2.7	0.47	1
1,2-Dichloroethane	ND		ug/kg	0.68	0.17	1
1,1,1-Trichloroethane	ND		ug/kg	0.34	0.11	1
Bromodichloromethane	ND		ug/kg	0.34	0.07	1
trans-1,3-Dichloropropene	ND		ug/kg	0.68	0.18	1
cis-1,3-Dichloropropene	ND		ug/kg	0.34	0.11	1
1,3-Dichloropropene, Total	ND		ug/kg	0.34	0.11	1
1,1-Dichloropropene	ND		ug/kg	0.34	0.11	1
Bromoform	ND		ug/kg	2.7	0.17	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.34	0.11	1
Benzene	ND		ug/kg	0.34	0.11	1
Toluene	0.37	J	ug/kg	0.68	0.37	1
Ethylbenzene	ND		ug/kg	0.68	0.10	1
Chloromethane	ND		ug/kg	2.7	0.63	1
Bromomethane	ND		ug/kg	1.4	0.40	1
Vinyl chloride	ND		ug/kg	0.68	0.23	1
Chloroethane	ND		ug/kg	1.4	0.31	1
1,1-Dichloroethene	ND		ug/kg	0.68	0.16	1
trans-1,2-Dichloroethene	ND		ug/kg	1.0	0.09	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-04 Date Collected: 07/18/19 11:20

Client ID: SB08_5.0-5.5 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	0.30	J	ug/kg	0.34	0.09	1
1,2-Dichlorobenzene	ND		ug/kg	1.4	0.10	1
1,3-Dichlorobenzene	ND		ug/kg	1.4	0.10	1
1,4-Dichlorobenzene	ND		ug/kg	1.4	0.12	1
Methyl tert butyl ether	0.17	J	ug/kg	1.4	0.14	1
p/m-Xylene	ND		ug/kg	1.4	0.38	1
o-Xylene	ND		ug/kg	0.68	0.20	1
Xylenes, Total	ND		ug/kg	0.68	0.20	1
cis-1,2-Dichloroethene	ND		ug/kg	0.68	0.12	1
1,2-Dichloroethene, Total	ND		ug/kg	0.68	0.09	1
Dibromomethane	ND		ug/kg	1.4	0.16	1
Styrene	ND		ug/kg	0.68	0.13	1
Dichlorodifluoromethane	ND		ug/kg	6.8	0.62	1
Acetone	19		ug/kg	6.8	3.3	1
Carbon disulfide	ND		ug/kg	6.8	3.1	1
2-Butanone	ND		ug/kg	6.8	1.5	1
Vinyl acetate	ND		ug/kg	6.8	1.5	1
4-Methyl-2-pentanone	ND		ug/kg	6.8	0.87	1
1,2,3-Trichloropropane	ND		ug/kg	1.4	0.09	1
2-Hexanone	ND		ug/kg	6.8	0.80	1
Bromochloromethane	ND		ug/kg	1.4	0.14	1
2,2-Dichloropropane	ND		ug/kg	1.4	0.14	1
1,2-Dibromoethane	ND		ug/kg	0.68	0.19	1
1,3-Dichloropropane	ND		ug/kg	1.4	0.11	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.34	0.09	1
Bromobenzene	ND		ug/kg	1.4	0.10	1
n-Butylbenzene	ND		ug/kg	0.68	0.11	1
sec-Butylbenzene	ND		ug/kg	0.68	0.10	1
tert-Butylbenzene	ND		ug/kg	1.4	0.08	1
o-Chlorotoluene	ND		ug/kg	1.4	0.13	1
p-Chlorotoluene	ND		ug/kg	1.4	0.07	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.0	0.68	1
Hexachlorobutadiene	ND		ug/kg	2.7	0.12	1
Isopropylbenzene	ND		ug/kg	0.68	0.07	1
p-Isopropyltoluene	ND		ug/kg	0.68	0.07	1
Naphthalene	ND		ug/kg	2.7	0.44	1
Acrylonitrile	ND		ug/kg	2.7	0.78	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-04 Date Collected: 07/18/19 11:20

Client ID: SB08_5.0-5.5 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	0.68	0.12	1
1,2,3-Trichlorobenzene	ND		ug/kg	1.4	0.22	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.4	0.18	1
1,3,5-Trimethylbenzene	ND		ug/kg	1.4	0.13	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.4	0.23	1
1,4-Dioxane	ND		ug/kg	54	24.	1
p-Diethylbenzene	ND		ug/kg	1.4	0.12	1
p-Ethyltoluene	ND		ug/kg	1.4	0.26	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	1.4	0.13	1
Ethyl ether	ND		ug/kg	1.4	0.23	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	3.4	0.97	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	115		70-130
Dibromofluoromethane	101		70-130

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-05
Client ID: SB08_14.0-14.5
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 11:10
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/19 19:55
Analyst: MV
Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methylene chloride	ND		ug/kg	440	200	1
1,1-Dichloroethane	ND		ug/kg	89	13.	1
Chloroform	ND		ug/kg	130	12.	1
Carbon tetrachloride	ND		ug/kg	89	20.	1
1,2-Dichloropropane	ND		ug/kg	89	11.	1
Dibromochloromethane	ND		ug/kg	89	12.	1
1,1,2-Trichloroethane	ND		ug/kg	89	24.	1
Tetrachloroethene	330		ug/kg	44	17.	1
Chlorobenzene	ND		ug/kg	44	11.	1
Trichlorofluoromethane	ND		ug/kg	360	62.	1
1,2-Dichloroethane	ND		ug/kg	89	23.	1
1,1,1-Trichloroethane	ND		ug/kg	44	15.	1
Bromodichloromethane	ND		ug/kg	44	9.7	1
trans-1,3-Dichloropropene	ND		ug/kg	89	24.	1
cis-1,3-Dichloropropene	ND		ug/kg	44	14.	1
1,3-Dichloropropene, Total	ND		ug/kg	44	14.	1
1,1-Dichloropropene	ND		ug/kg	44	14.	1
Bromoform	ND		ug/kg	360	22.	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	44	15.	1
Benzene	ND		ug/kg	44	15.	1
Toluene	160		ug/kg	89	48.	1
Ethylbenzene	ND		ug/kg	89	12.	1
Chloromethane	ND		ug/kg	360	83.	1
Bromomethane	ND		ug/kg	180	52.	1
Vinyl chloride	15000		ug/kg	89	30.	1
Chloroethane	ND		ug/kg	180	40.	1
1,1-Dichloroethene	ND		ug/kg	89	21.	1
trans-1,2-Dichloroethene	1600		ug/kg	130	12.	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-05 Date Collected: 07/18/19 11:10

Client ID: SB08_14.0-14.5 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Trichloroethene	290		ug/kg	44	12.	1
1,2-Dichlorobenzene	ND		ug/kg	180	13.	1
1,3-Dichlorobenzene	ND		ug/kg	180	13.	1
1,4-Dichlorobenzene	ND		ug/kg	180	15.	1
Methyl tert butyl ether	ND		ug/kg	180	18.	1
p/m-Xylene	ND		ug/kg	180	50.	1
o-Xylene	ND		ug/kg	89	26.	1
Xylenes, Total	ND		ug/kg	89	26.	1
cis-1,2-Dichloroethene	12000		ug/kg	89	16.	1
1,2-Dichloroethene, Total	14000		ug/kg	89	12.	1
Dibromomethane	ND		ug/kg	180	21.	1
Styrene	ND		ug/kg	89	17.	1
Dichlorodifluoromethane	ND		ug/kg	890	81.	1
Acetone	ND		ug/kg	890	430	1
Carbon disulfide	ND		ug/kg	890	400	1
2-Butanone	ND		ug/kg	890	200	1
Vinyl acetate	ND		ug/kg	890	190	1
4-Methyl-2-pentanone	ND		ug/kg	890	110	1
1,2,3-Trichloropropane	ND		ug/kg	180	11.	1
2-Hexanone	ND		ug/kg	890	100	1
Bromochloromethane	ND		ug/kg	180	18.	1
2,2-Dichloropropane	ND		ug/kg	180	18.	1
1,2-Dibromoethane	ND		ug/kg	89	25.	1
1,3-Dichloropropane	ND		ug/kg	180	15.	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	44	12.	1
Bromobenzene	ND		ug/kg	180	13.	1
n-Butylbenzene	ND		ug/kg	89	15.	1
sec-Butylbenzene	ND		ug/kg	89	13.	1
tert-Butylbenzene	ND		ug/kg	180	10.	1
o-Chlorotoluene	ND		ug/kg	180	17.	1
p-Chlorotoluene	ND		ug/kg	180	9.6	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	270	88.	1
Hexachlorobutadiene	ND		ug/kg	360	15.	1
Isopropylbenzene	ND		ug/kg	89	9.7	1
p-Isopropyltoluene	ND		ug/kg	89	9.7	1
Naphthalene	ND		ug/kg	360	58.	1
Acrylonitrile	ND		ug/kg	360	100	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-05 Date Collected: 07/18/19 11:10

Client ID: SB08_14.0-14.5 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
n-Propylbenzene	ND		ug/kg	89	15.	1
1,2,3-Trichlorobenzene	ND		ug/kg	180	28.	1
1,2,4-Trichlorobenzene	ND		ug/kg	180	24.	1
1,3,5-Trimethylbenzene	ND		ug/kg	180	17.	1
1,2,4-Trimethylbenzene	ND		ug/kg	180	30.	1
1,4-Dioxane	ND		ug/kg	7100	3100	1
p-Diethylbenzene	ND		ug/kg	180	16.	1
p-Ethyltoluene	ND		ug/kg	180	34.	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	180	17.	1
Ethyl ether	ND		ug/kg	180	30.	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	440	130	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	91		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	103		70-130

Project Name: 450 JOHNSON AVE.
Lab Number: L1931803
Project Number: 170588001
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-06
Client ID: SB12_6.5-7.0
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 10:15
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/19 17:49
Analyst: JC
Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.3	2.4	1
1,1-Dichloroethane	ND		ug/kg	1.1	0.15	1
Chloroform	ND		ug/kg	1.6	0.15	1
Carbon tetrachloride	ND		ug/kg	1.1	0.24	1
1,2-Dichloropropane	ND		ug/kg	1.1	0.13	1
Dibromochloromethane	ND		ug/kg	1.1	0.15	1
1,1,2-Trichloroethane	ND		ug/kg	1.1	0.28	1
Tetrachloroethene	2.1		ug/kg	0.53	0.21	1
Chlorobenzene	ND		ug/kg	0.53	0.14	1
Trichlorofluoromethane	ND		ug/kg	4.3	0.74	1
1,2-Dichloroethane	ND		ug/kg	1.1	0.27	1
1,1,1-Trichloroethane	ND		ug/kg	0.53	0.18	1
Bromodichloromethane	ND		ug/kg	0.53	0.12	1
trans-1,3-Dichloropropene	ND		ug/kg	1.1	0.29	1
cis-1,3-Dichloropropene	ND		ug/kg	0.53	0.17	1
1,3-Dichloropropene, Total	ND		ug/kg	0.53	0.17	1
1,1-Dichloropropene	ND		ug/kg	0.53	0.17	1
Bromoform	ND		ug/kg	4.3	0.26	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.53	0.18	1
Benzene	ND		ug/kg	0.53	0.18	1
Toluene	ND		ug/kg	1.1	0.58	1
Ethylbenzene	ND		ug/kg	1.1	0.15	1
Chloromethane	ND		ug/kg	4.3	0.99	1
Bromomethane	ND		ug/kg	2.1	0.62	1
Vinyl chloride	ND		ug/kg	1.1	0.36	1
Chloroethane	ND		ug/kg	2.1	0.48	1
1,1-Dichloroethene	ND		ug/kg	1.1	0.25	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	0.15	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-06 Date Collected: 07/18/19 10:15

Client ID: SB12_6.5-7.0 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.53	0.15	1
1,2-Dichlorobenzene	ND		ug/kg	2.1	0.15	1
1,3-Dichlorobenzene	ND		ug/kg	2.1	0.16	1
1,4-Dichlorobenzene	ND		ug/kg	2.1	0.18	1
Methyl tert butyl ether	0.28	J	ug/kg	2.1	0.21	1
p/m-Xylene	ND		ug/kg	2.1	0.60	1
o-Xylene	ND		ug/kg	1.1	0.31	1
Xylenes, Total	ND		ug/kg	1.1	0.31	1
cis-1,2-Dichloroethene	ND		ug/kg	1.1	0.19	1
1,2-Dichloroethene, Total	ND		ug/kg	1.1	0.15	1
Dibromomethane	ND		ug/kg	2.1	0.25	1
Styrene	ND		ug/kg	1.1	0.21	1
Dichlorodifluoromethane	ND		ug/kg	11	0.98	1
Acetone	22		ug/kg	11	5.1	1
Carbon disulfide	ND		ug/kg	11	4.8	1
2-Butanone	ND		ug/kg	11	2.4	1
Vinyl acetate	ND		ug/kg	11	2.3	1
4-Methyl-2-pentanone	ND		ug/kg	11	1.4	1
1,2,3-Trichloropropane	ND		ug/kg	2.1	0.14	1
2-Hexanone	ND		ug/kg	11	1.2	1
Bromochloromethane	ND		ug/kg	2.1	0.22	1
2,2-Dichloropropane	ND		ug/kg	2.1	0.22	1
1,2-Dibromoethane	ND		ug/kg	1.1	0.30	1
1,3-Dichloropropane	ND		ug/kg	2.1	0.18	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.53	0.14	1
Bromobenzene	ND		ug/kg	2.1	0.15	1
n-Butylbenzene	ND		ug/kg	1.1	0.18	1
sec-Butylbenzene	ND		ug/kg	1.1	0.16	1
tert-Butylbenzene	ND		ug/kg	2.1	0.12	1
o-Chlorotoluene	ND		ug/kg	2.1	0.20	1
p-Chlorotoluene	ND		ug/kg	2.1	0.12	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.2	1.1	1
Hexachlorobutadiene	ND		ug/kg	4.3	0.18	1
Isopropylbenzene	ND		ug/kg	1.1	0.12	1
p-Isopropyltoluene	ND		ug/kg	1.1	0.12	1
Naphthalene	ND		ug/kg	4.3	0.69	1
Acrylonitrile	ND		ug/kg	4.3	1.2	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-06 Date Collected: 07/18/19 10:15

Client ID: SB12_6.5-7.0 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.1	0.18	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.1	0.34	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.1	0.29	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.1	0.20	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.1	0.36	1
1,4-Dioxane	ND		ug/kg	85	37.	1
p-Diethylbenzene	ND		ug/kg	2.1	0.19	1
p-Ethyltoluene	ND		ug/kg	2.1	0.41	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.1	0.20	1
Ethyl ether	ND		ug/kg	2.1	0.36	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.3	1.5	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	119		70-130
Dibromofluoromethane	99		70-130

Project Name: 450 JOHNSON AVE.
Lab Number: L1931803
Project Number: 170588001
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-07
Client ID: SB07_4.5-5.0
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 15:00
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/19 18:15
Analyst: JC
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.4	2.5	1
1,1-Dichloroethane	ND		ug/kg	1.1	0.16	1
Chloroform	ND		ug/kg	1.6	0.15	1
Carbon tetrachloride	ND		ug/kg	1.1	0.25	1
1,2-Dichloropropane	ND		ug/kg	1.1	0.13	1
Dibromochloromethane	ND		ug/kg	1.1	0.15	1
1,1,2-Trichloroethane	ND		ug/kg	1.1	0.29	1
Tetrachloroethene	20		ug/kg	0.54	0.21	1
Chlorobenzene	ND		ug/kg	0.54	0.14	1
Trichlorofluoromethane	ND		ug/kg	4.3	0.75	1
1,2-Dichloroethane	ND		ug/kg	1.1	0.28	1
1,1,1-Trichloroethane	ND		ug/kg	0.54	0.18	1
Bromodichloromethane	ND		ug/kg	0.54	0.12	1
trans-1,3-Dichloropropene	ND		ug/kg	1.1	0.29	1
cis-1,3-Dichloropropene	ND		ug/kg	0.54	0.17	1
1,3-Dichloropropene, Total	ND		ug/kg	0.54	0.17	1
1,1-Dichloropropene	ND		ug/kg	0.54	0.17	1
Bromoform	ND		ug/kg	4.3	0.26	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.54	0.18	1
Benzene	ND		ug/kg	0.54	0.18	1
Toluene	ND		ug/kg	1.1	0.59	1
Ethylbenzene	ND		ug/kg	1.1	0.15	1
Chloromethane	ND		ug/kg	4.3	1.0	1
Bromomethane	ND		ug/kg	2.2	0.63	1
Vinyl chloride	0.74	J	ug/kg	1.1	0.36	1
Chloroethane	ND		ug/kg	2.2	0.49	1
1,1-Dichloroethene	ND		ug/kg	1.1	0.26	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	0.15	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-07 Date Collected: 07/18/19 15:00

Client ID: SB07_4.5-5.0 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.54	0.15	1
1,2-Dichlorobenzene	ND		ug/kg	2.2	0.16	1
1,3-Dichlorobenzene	ND		ug/kg	2.2	0.16	1
1,4-Dichlorobenzene	ND		ug/kg	2.2	0.18	1
Methyl tert butyl ether	ND		ug/kg	2.2	0.22	1
p/m-Xylene	ND		ug/kg	2.2	0.60	1
o-Xylene	ND		ug/kg	1.1	0.31	1
Xylenes, Total	ND		ug/kg	1.1	0.31	1
cis-1,2-Dichloroethene	ND		ug/kg	1.1	0.19	1
1,2-Dichloroethene, Total	ND		ug/kg	1.1	0.15	1
Dibromomethane	ND		ug/kg	2.2	0.26	1
Styrene	ND		ug/kg	1.1	0.21	1
Dichlorodifluoromethane	ND		ug/kg	11	0.99	1
Acetone	27		ug/kg	11	5.2	1
Carbon disulfide	ND		ug/kg	11	4.9	1
2-Butanone	ND		ug/kg	11	2.4	1
Vinyl acetate	ND		ug/kg	11	2.3	1
4-Methyl-2-pentanone	ND		ug/kg	11	1.4	1
1,2,3-Trichloropropane	ND		ug/kg	2.2	0.14	1
2-Hexanone	ND		ug/kg	11	1.3	1
Bromochloromethane	ND		ug/kg	2.2	0.22	1
2,2-Dichloropropane	ND		ug/kg	2.2	0.22	1
1,2-Dibromoethane	ND		ug/kg	1.1	0.30	1
1,3-Dichloropropane	ND		ug/kg	2.2	0.18	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.54	0.14	1
Bromobenzene	ND		ug/kg	2.2	0.16	1
n-Butylbenzene	ND		ug/kg	1.1	0.18	1
sec-Butylbenzene	ND		ug/kg	1.1	0.16	1
tert-Butylbenzene	ND		ug/kg	2.2	0.13	1
o-Chlorotoluene	ND		ug/kg	2.2	0.21	1
p-Chlorotoluene	ND		ug/kg	2.2	0.12	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.2	1.1	1
Hexachlorobutadiene	ND		ug/kg	4.3	0.18	1
Isopropylbenzene	ND		ug/kg	1.1	0.12	1
p-Isopropyltoluene	ND		ug/kg	1.1	0.12	1
Naphthalene	ND		ug/kg	4.3	0.70	1
Acrylonitrile	ND		ug/kg	4.3	1.2	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-07 Date Collected: 07/18/19 15:00

Client ID: SB07_4.5-5.0 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.1	0.18	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.2	0.35	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.2	0.29	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.2	0.21	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.2	0.36	1
1,4-Dioxane	ND		ug/kg	86	38.	1
p-Diethylbenzene	ND		ug/kg	2.2	0.19	1
p-Ethyltoluene	ND		ug/kg	2.2	0.41	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.2	0.21	1
Ethyl ether	ND		ug/kg	2.2	0.37	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.4	1.5	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	111		70-130
4-Bromofluorobenzene	**137**	Q	70-130
Dibromofluoromethane	101		70-130

Project Name: 450 JOHNSON AVE.
Lab Number: L1931803
Project Number: 170588001
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-07 R
Client ID: SB07_4.5-5.0
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 15:00
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/22/19 08:03
Analyst: MV
Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.4	2.5	1
1,1-Dichloroethane	ND		ug/kg	1.1	0.16	1
Chloroform	ND		ug/kg	1.6	0.15	1
Carbon tetrachloride	ND		ug/kg	1.1	0.25	1
1,2-Dichloropropane	ND		ug/kg	1.1	0.14	1
Dibromochloromethane	ND		ug/kg	1.1	0.15	1
1,1,2-Trichloroethane	ND		ug/kg	1.1	0.29	1
Tetrachloroethene	21		ug/kg	0.54	0.21	1
Chlorobenzene	ND		ug/kg	0.54	0.14	1
Trichlorofluoromethane	ND		ug/kg	4.3	0.75	1
1,2-Dichloroethane	ND		ug/kg	1.1	0.28	1
1,1,1-Trichloroethane	ND		ug/kg	0.54	0.18	1
Bromodichloromethane	ND		ug/kg	0.54	0.12	1
trans-1,3-Dichloropropene	ND		ug/kg	1.1	0.30	1
cis-1,3-Dichloropropene	ND		ug/kg	0.54	0.17	1
1,3-Dichloropropene, Total	ND		ug/kg	0.54	0.17	1
1,1-Dichloropropene	ND		ug/kg	0.54	0.17	1
Bromoform	ND		ug/kg	4.3	0.27	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.54	0.18	1
Benzene	ND		ug/kg	0.54	0.18	1
Toluene	ND		ug/kg	1.1	0.59	1
Ethylbenzene	ND		ug/kg	1.1	0.15	1
Chloromethane	ND		ug/kg	4.3	1.0	1
Bromomethane	ND		ug/kg	2.2	0.63	1
Vinyl chloride	ND		ug/kg	1.1	0.36	1
Chloroethane	ND		ug/kg	2.2	0.49	1
1,1-Dichloroethene	ND		ug/kg	1.1	0.26	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	0.15	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-07 R Date Collected: 07/18/19 15:00
Client ID: SB07_4.5-5.0 Date Received: 07/18/19
Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.54	0.15	1
1,2-Dichlorobenzene	ND		ug/kg	2.2	0.16	1
1,3-Dichlorobenzene	ND		ug/kg	2.2	0.16	1
1,4-Dichlorobenzene	ND		ug/kg	2.2	0.18	1
Methyl tert butyl ether	ND		ug/kg	2.2	0.22	1
p/m-Xylene	ND		ug/kg	2.2	0.61	1
o-Xylene	ND		ug/kg	1.1	0.32	1
Xylenes, Total	ND		ug/kg	1.1	0.32	1
cis-1,2-Dichloroethene	ND		ug/kg	1.1	0.19	1
1,2-Dichloroethene, Total	ND		ug/kg	1.1	0.15	1
Dibromomethane	ND		ug/kg	2.2	0.26	1
Styrene	ND		ug/kg	1.1	0.21	1
Dichlorodifluoromethane	ND		ug/kg	11	0.99	1
Acetone	ND		ug/kg	11	5.2	1
Carbon disulfide	ND		ug/kg	11	4.9	1
2-Butanone	ND		ug/kg	11	2.4	1
Vinyl acetate	ND		ug/kg	11	2.3	1
4-Methyl-2-pentanone	ND		ug/kg	11	1.4	1
1,2,3-Trichloropropane	ND		ug/kg	2.2	0.14	1
2-Hexanone	ND		ug/kg	11	1.3	1
Bromochloromethane	ND		ug/kg	2.2	0.22	1
2,2-Dichloropropane	ND		ug/kg	2.2	0.22	1
1,2-Dibromoethane	ND		ug/kg	1.1	0.30	1
1,3-Dichloropropane	ND		ug/kg	2.2	0.18	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.54	0.14	1
Bromobenzene	ND		ug/kg	2.2	0.16	1
n-Butylbenzene	ND		ug/kg	1.1	0.18	1
sec-Butylbenzene	ND		ug/kg	1.1	0.16	1
tert-Butylbenzene	ND		ug/kg	2.2	0.13	1
o-Chlorotoluene	ND		ug/kg	2.2	0.21	1
p-Chlorotoluene	ND		ug/kg	2.2	0.12	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.2	1.1	1
Hexachlorobutadiene	ND		ug/kg	4.3	0.18	1
Isopropylbenzene	ND		ug/kg	1.1	0.12	1
p-Isopropyltoluene	ND		ug/kg	1.1	0.12	1
Naphthalene	ND		ug/kg	4.3	0.70	1
Acrylonitrile	ND		ug/kg	4.3	1.2	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-07 R Date Collected: 07/18/19 15:00

Client ID: SB07_4.5-5.0 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.1	0.18	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.2	0.35	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.2	0.30	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.2	0.21	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.2	0.36	1
1,4-Dioxane	ND		ug/kg	87	38.	1
p-Diethylbenzene	ND		ug/kg	2.2	0.19	1
p-Ethyltoluene	ND		ug/kg	2.2	0.42	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.2	0.21	1
Ethyl ether	ND		ug/kg	2.2	0.37	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.4	1.5	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	126		70-130
Toluene-d8	119		70-130
4-Bromofluorobenzene	**143**	Q	70-130
Dibromofluoromethane	112		70-130

Project Name: 450 JOHNSON AVE.
Project Number: 170588001
Lab Number: L1931803
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-08
Client ID: SB14_4.5-5.0
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 14:05
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/19/19 18:42
Analyst: JC
Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	4.5	2.1	1
1,1-Dichloroethane	ND		ug/kg	0.91	0.13	1
Chloroform	ND		ug/kg	1.4	0.13	1
Carbon tetrachloride	ND		ug/kg	0.91	0.21	1
1,2-Dichloropropane	ND		ug/kg	0.91	0.11	1
Dibromochloromethane	ND		ug/kg	0.91	0.13	1
1,1,2-Trichloroethane	ND		ug/kg	0.91	0.24	1
Tetrachloroethene	ND		ug/kg	0.45	0.18	1
Chlorobenzene	ND		ug/kg	0.45	0.12	1
Trichlorofluoromethane	ND		ug/kg	3.6	0.63	1
1,2-Dichloroethane	ND		ug/kg	0.91	0.23	1
1,1,1-Trichloroethane	ND		ug/kg	0.45	0.15	1
Bromodichloromethane	ND		ug/kg	0.45	0.10	1
trans-1,3-Dichloropropene	ND		ug/kg	0.91	0.25	1
cis-1,3-Dichloropropene	ND		ug/kg	0.45	0.14	1
1,3-Dichloropropene, Total	ND		ug/kg	0.45	0.14	1
1,1-Dichloropropene	ND		ug/kg	0.45	0.14	1
Bromoform	ND		ug/kg	3.6	0.22	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.45	0.15	1
Benzene	ND		ug/kg	0.45	0.15	1
Toluene	ND		ug/kg	0.91	0.49	1
Ethylbenzene	ND		ug/kg	0.91	0.13	1
Chloromethane	ND		ug/kg	3.6	0.84	1
Bromomethane	ND		ug/kg	1.8	0.53	1
Vinyl chloride	0.40	J	ug/kg	0.91	0.30	1
Chloroethane	ND		ug/kg	1.8	0.41	1
1,1-Dichloroethene	ND		ug/kg	0.91	0.22	1
trans-1,2-Dichloroethene	ND		ug/kg	1.4	0.12	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-08 Date Collected: 07/18/19 14:05

Client ID: SB14_4.5-5.0 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	13		ug/kg	0.45	0.12	1
1,2-Dichlorobenzene	ND		ug/kg	1.8	0.13	1
1,3-Dichlorobenzene	ND		ug/kg	1.8	0.13	1
1,4-Dichlorobenzene	ND		ug/kg	1.8	0.16	1
Methyl tert butyl ether	ND		ug/kg	1.8	0.18	1
p/m-Xylene	ND		ug/kg	1.8	0.51	1
o-Xylene	ND		ug/kg	0.91	0.26	1
Xylenes, Total	ND		ug/kg	0.91	0.26	1
cis-1,2-Dichloroethene	ND		ug/kg	0.91	0.16	1
1,2-Dichloroethene, Total	ND		ug/kg	0.91	0.12	1
Dibromomethane	ND		ug/kg	1.8	0.22	1
Styrene	ND		ug/kg	0.91	0.18	1
Dichlorodifluoromethane	ND		ug/kg	9.1	0.83	1
Acetone	8.3	J	ug/kg	9.1	4.4	1
Carbon disulfide	ND		ug/kg	9.1	4.1	1
2-Butanone	ND		ug/kg	9.1	2.0	1
Vinyl acetate	ND		ug/kg	9.1	2.0	1
4-Methyl-2-pentanone	ND		ug/kg	9.1	1.2	1
1,2,3-Trichloropropane	ND		ug/kg	1.8	0.12	1
2-Hexanone	ND		ug/kg	9.1	1.1	1
Bromochloromethane	ND		ug/kg	1.8	0.19	1
2,2-Dichloropropane	ND		ug/kg	1.8	0.18	1
1,2-Dibromoethane	ND		ug/kg	0.91	0.25	1
1,3-Dichloropropane	ND		ug/kg	1.8	0.15	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.45	0.12	1
Bromobenzene	ND		ug/kg	1.8	0.13	1
n-Butylbenzene	ND		ug/kg	0.91	0.15	1
sec-Butylbenzene	ND		ug/kg	0.91	0.13	1
tert-Butylbenzene	ND		ug/kg	1.8	0.11	1
o-Chlorotoluene	ND		ug/kg	1.8	0.17	1
p-Chlorotoluene	ND		ug/kg	1.8	0.10	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	2.7	0.90	1
Hexachlorobutadiene	ND		ug/kg	3.6	0.15	1
Isopropylbenzene	ND		ug/kg	0.91	0.10	1
p-Isopropyltoluene	ND		ug/kg	0.91	0.10	1
Naphthalene	ND		ug/kg	3.6	0.59	1
Acrylonitrile	ND		ug/kg	3.6	1.0	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-08 Date Collected: 07/18/19 14:05

Client ID: SB14_4.5-5.0 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	0.91	0.16	1
1,2,3-Trichlorobenzene	ND		ug/kg	1.8	0.29	1
1,2,4-Trichlorobenzene	ND		ug/kg	1.8	0.25	1
1,3,5-Trimethylbenzene	ND		ug/kg	1.8	0.18	1
1,2,4-Trimethylbenzene	ND		ug/kg	1.8	0.30	1
1,4-Dioxane	ND		ug/kg	73	32.	1
p-Diethylbenzene	ND		ug/kg	1.8	0.16	1
p-Ethyltoluene	ND		ug/kg	1.8	0.35	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	1.8	0.17	1
Ethyl ether	ND		ug/kg	1.8	0.31	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	4.5	1.3	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	122		70-130
Dibromofluoromethane	103		70-130

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/22/19 08:20
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02 Batch: WG1262084-12					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14
1,1-Dichloropropene	ND		ug/l	2.5	0.70
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/22/19 08:20
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02 Batch: WG1262084-12					
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.70
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
Xylenes, Total	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
1,2-Dichloroethene, Total	ND		ug/l	2.5	0.70
Dibromomethane	ND		ug/l	5.0	1.0
1,2,3-Trichloropropane	ND		ug/l	2.5	0.70
Acrylonitrile	ND		ug/l	5.0	1.5
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
Vinyl acetate	ND		ug/l	5.0	1.0
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
2,2-Dichloropropane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,3-Dichloropropane	ND		ug/l	2.5	0.70
1,1,1,2-Tetrachloroethane	ND		ug/l	2.5	0.70
Bromobenzene	ND		ug/l	2.5	0.70
n-Butylbenzene	ND		ug/l	2.5	0.70
sec-Butylbenzene	ND		ug/l	2.5	0.70
tert-Butylbenzene	ND		ug/l	2.5	0.70

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/22/19 08:20
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02 Batch: WG1262084-12					
o-Chlorotoluene	ND		ug/l	2.5	0.70
p-Chlorotoluene	ND		ug/l	2.5	0.70
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Hexachlorobutadiene	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
p-Isopropyltoluene	ND		ug/l	2.5	0.70
Naphthalene	ND		ug/l	2.5	0.70
n-Propylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70
1,4-Dioxane	ND		ug/l	250	61.
p-Diethylbenzene	ND		ug/l	2.0	0.70
p-Ethyltoluene	ND		ug/l	2.0	0.70
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	0.54
Ethyl ether	ND		ug/l	2.5	0.70
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.70

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	86		70-130
Toluene-d8	86		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	98		70-130

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/19/19 08:14
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1262084-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14
1,1-Dichloropropene	ND		ug/l	2.5	0.70
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/19/19 08:14
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1262084-5					
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.70
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
Xylenes, Total	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
1,2-Dichloroethene, Total	ND		ug/l	2.5	0.70
Dibromomethane	ND		ug/l	5.0	1.0
1,2,3-Trichloropropane	ND		ug/l	2.5	0.70
Acrylonitrile	ND		ug/l	5.0	1.5
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
Vinyl acetate	ND		ug/l	5.0	1.0
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
2,2-Dichloropropane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,3-Dichloropropane	ND		ug/l	2.5	0.70
1,1,1,2-Tetrachloroethane	ND		ug/l	2.5	0.70
Bromobenzene	ND		ug/l	2.5	0.70
n-Butylbenzene	ND		ug/l	2.5	0.70
sec-Butylbenzene	ND		ug/l	2.5	0.70
tert-Butylbenzene	ND		ug/l	2.5	0.70

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/19/19 08:14
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG1262084-5					
o-Chlorotoluene	ND		ug/l	2.5	0.70
p-Chlorotoluene	ND		ug/l	2.5	0.70
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Hexachlorobutadiene	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
p-Isopropyltoluene	ND		ug/l	2.5	0.70
Naphthalene	ND		ug/l	2.5	0.70
n-Propylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70
1,4-Dioxane	ND		ug/l	250	61.
p-Diethylbenzene	ND		ug/l	2.0	0.70
p-Ethyltoluene	ND		ug/l	2.0	0.70
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	0.54
Ethyl ether	ND		ug/l	2.5	0.70
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.70

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	87		70-130
4-Bromofluorobenzene	88		70-130
Dibromofluoromethane	99		70-130

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/22/19 07:37
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 07 Batch: WG1262130-10					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	ND		ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
1,2-Dichloropropane	ND		ug/kg	1.0	0.12
Dibromochloromethane	ND		ug/kg	1.0	0.14
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.27
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
Trichlorofluoromethane	ND		ug/kg	4.0	0.70
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Bromodichloromethane	ND		ug/kg	0.50	0.11
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.27
cis-1,3-Dichloropropene	ND		ug/kg	0.50	0.16
1,3-Dichloropropene, Total	ND		ug/kg	0.50	0.16
1,1-Dichloropropene	ND		ug/kg	0.50	0.16
Bromoform	ND		ug/kg	4.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Chloromethane	ND		ug/kg	4.0	0.93
Bromomethane	ND		ug/kg	2.0	0.58
Vinyl chloride	ND		ug/kg	1.0	0.34
Chloroethane	ND		ug/kg	2.0	0.45
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/22/19 07:37
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 07 Batch: WG1262130-10					
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
Xylenes, Total	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
1,2-Dichloroethene, Total	ND		ug/kg	1.0	0.14
Dibromomethane	ND		ug/kg	2.0	0.24
Styrene	ND		ug/kg	1.0	0.20
Dichlorodifluoromethane	ND		ug/kg	10	0.92
Acetone	ND		ug/kg	10	4.8
Carbon disulfide	ND		ug/kg	10	4.6
2-Butanone	ND		ug/kg	10	2.2
Vinyl acetate	ND		ug/kg	10	2.2
4-Methyl-2-pentanone	ND		ug/kg	10	1.3
1,2,3-Trichloropropane	ND		ug/kg	2.0	0.13
2-Hexanone	ND		ug/kg	10	1.2
Bromochloromethane	ND		ug/kg	2.0	0.20
2,2-Dichloropropane	ND		ug/kg	2.0	0.20
1,2-Dibromoethane	ND		ug/kg	1.0	0.28
1,3-Dichloropropane	ND		ug/kg	2.0	0.17
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	0.13
Bromobenzene	ND		ug/kg	2.0	0.14
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
o-Chlorotoluene	ND		ug/kg	2.0	0.19

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/22/19 07:37
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 07 Batch: WG1262130-10					
p-Chlorotoluene	ND		ug/kg	2.0	0.11
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	1.0
Hexachlorobutadiene	ND		ug/kg	4.0	0.17
Isopropylbenzene	ND		ug/kg	1.0	0.11
p-Isopropyltoluene	ND		ug/kg	1.0	0.11
Naphthalene	ND		ug/kg	4.0	0.65
Acrylonitrile	ND		ug/kg	4.0	1.2
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	0.32
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	0.27
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
1,4-Dioxane	ND		ug/kg	80	35.
p-Diethylbenzene	ND		ug/kg	2.0	0.18
p-Ethyltoluene	ND		ug/kg	2.0	0.38
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.0	0.19
Ethyl ether	ND		ug/kg	2.0	0.34
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	1.4

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	122		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	106		70-130

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/19/19 10:25
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 04,06-08 Batch: WG1262130-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	ND		ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
1,2-Dichloropropane	ND		ug/kg	1.0	0.12
Dibromochloromethane	ND		ug/kg	1.0	0.14
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.27
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
Trichlorofluoromethane	ND		ug/kg	4.0	0.70
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Bromodichloromethane	ND		ug/kg	0.50	0.11
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.27
cis-1,3-Dichloropropene	ND		ug/kg	0.50	0.16
1,3-Dichloropropene, Total	ND		ug/kg	0.50	0.16
1,1-Dichloropropene	ND		ug/kg	0.50	0.16
Bromoform	ND		ug/kg	4.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Chloromethane	ND		ug/kg	4.0	0.93
Bromomethane	ND		ug/kg	2.0	0.58
Vinyl chloride	ND		ug/kg	1.0	0.34
Chloroethane	ND		ug/kg	2.0	0.45
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/19/19 10:25
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 04,06-08 Batch: WG1262130-5					
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	0.20	J	ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
Xylenes, Total	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
1,2-Dichloroethene, Total	ND		ug/kg	1.0	0.14
Dibromomethane	ND		ug/kg	2.0	0.24
Styrene	ND		ug/kg	1.0	0.20
Dichlorodifluoromethane	ND		ug/kg	10	0.92
Acetone	ND		ug/kg	10	4.8
Carbon disulfide	ND		ug/kg	10	4.6
2-Butanone	ND		ug/kg	10	2.2
Vinyl acetate	ND		ug/kg	10	2.2
4-Methyl-2-pentanone	ND		ug/kg	10	1.3
1,2,3-Trichloropropane	ND		ug/kg	2.0	0.13
2-Hexanone	ND		ug/kg	10	1.2
Bromochloromethane	ND		ug/kg	2.0	0.20
2,2-Dichloropropane	ND		ug/kg	2.0	0.20
1,2-Dibromoethane	ND		ug/kg	1.0	0.28
1,3-Dichloropropane	ND		ug/kg	2.0	0.17
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	0.13
Bromobenzene	ND		ug/kg	2.0	0.14
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
o-Chlorotoluene	ND		ug/kg	2.0	0.19

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/19/19 10:25
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 04,06-08 Batch: WG1262130-5					
p-Chlorotoluene	ND		ug/kg	2.0	0.11
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	1.0
Hexachlorobutadiene	ND		ug/kg	4.0	0.17
Isopropylbenzene	ND		ug/kg	1.0	0.11
p-Isopropyltoluene	ND		ug/kg	1.0	0.11
Naphthalene	ND		ug/kg	4.0	0.65
Acrylonitrile	ND		ug/kg	4.0	1.2
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	0.32
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	0.27
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
1,4-Dioxane	ND		ug/kg	80	35.
p-Diethylbenzene	ND		ug/kg	2.0	0.18
p-Ethyltoluene	ND		ug/kg	2.0	0.38
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.0	0.19
Ethyl ether	ND		ug/kg	2.0	0.34
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	1.4

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	113		70-130
Dibromofluoromethane	93		70-130

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/19/19 10:13
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 05 Batch: WG1262697-5					
Methylene chloride	ND		ug/kg	250	110
1,1-Dichloroethane	ND		ug/kg	50	7.2
Chloroform	ND		ug/kg	75	7.0
Carbon tetrachloride	ND		ug/kg	50	12.
1,2-Dichloropropane	ND		ug/kg	50	6.2
Dibromochloromethane	ND		ug/kg	50	7.0
1,1,2-Trichloroethane	ND		ug/kg	50	13.
Tetrachloroethene	ND		ug/kg	25	9.8
Chlorobenzene	ND		ug/kg	25	6.4
Trichlorofluoromethane	ND		ug/kg	200	35.
1,2-Dichloroethane	ND		ug/kg	50	13.
1,1,1-Trichloroethane	ND		ug/kg	25	8.4
Bromodichloromethane	ND		ug/kg	25	5.4
trans-1,3-Dichloropropene	ND		ug/kg	50	14.
cis-1,3-Dichloropropene	ND		ug/kg	25	7.9
1,3-Dichloropropene, Total	ND		ug/kg	25	7.9
1,1-Dichloropropene	ND		ug/kg	25	8.0
Bromoform	ND		ug/kg	200	12.
1,1,2,2-Tetrachloroethane	ND		ug/kg	25	8.3
Benzene	ND		ug/kg	25	8.3
Toluene	ND		ug/kg	50	27.
Ethylbenzene	ND		ug/kg	50	7.0
Chloromethane	ND		ug/kg	200	47.
Bromomethane	ND		ug/kg	100	29.
Vinyl chloride	ND		ug/kg	50	17.
Chloroethane	ND		ug/kg	100	23.
1,1-Dichloroethene	ND		ug/kg	50	12.
trans-1,2-Dichloroethene	ND		ug/kg	75	6.8
Trichloroethene	ND		ug/kg	25	6.8

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/19/19 10:13
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 05 Batch: WG1262697-5					
1,2-Dichlorobenzene	ND		ug/kg	100	7.2
1,3-Dichlorobenzene	ND		ug/kg	100	7.4
1,4-Dichlorobenzene	ND		ug/kg	100	8.6
Methyl tert butyl ether	ND		ug/kg	100	10.
p/m-Xylene	ND		ug/kg	100	28.
o-Xylene	ND		ug/kg	50	14.
Xylenes, Total	ND		ug/kg	50	14.
cis-1,2-Dichloroethene	ND		ug/kg	50	8.8
1,2-Dichloroethene, Total	ND		ug/kg	50	6.8
Dibromomethane	ND		ug/kg	100	12.
Styrene	ND		ug/kg	50	9.8
Dichlorodifluoromethane	ND		ug/kg	500	46.
Acetone	ND		ug/kg	500	240
Carbon disulfide	ND		ug/kg	500	230
2-Butanone	ND		ug/kg	500	110
Vinyl acetate	ND		ug/kg	500	110
4-Methyl-2-pentanone	ND		ug/kg	500	64.
1,2,3-Trichloropropane	ND		ug/kg	100	6.4
2-Hexanone	ND		ug/kg	500	59.
Bromochloromethane	ND		ug/kg	100	10.
2,2-Dichloropropane	ND		ug/kg	100	10.
1,2-Dibromoethane	ND		ug/kg	50	14.
1,3-Dichloropropane	ND		ug/kg	100	8.4
1,1,1,2-Tetrachloroethane	ND		ug/kg	25	6.6
Bromobenzene	ND		ug/kg	100	7.2
n-Butylbenzene	ND		ug/kg	50	8.4
sec-Butylbenzene	ND		ug/kg	50	7.3
tert-Butylbenzene	ND		ug/kg	100	5.9
o-Chlorotoluene	ND		ug/kg	100	9.6

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/19/19 10:13
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 05 Batch: WG1262697-5					
p-Chlorotoluene	ND		ug/kg	100	5.4
1,2-Dibromo-3-chloropropane	ND		ug/kg	150	50.
Hexachlorobutadiene	ND		ug/kg	200	8.4
Isopropylbenzene	ND		ug/kg	50	5.4
p-Isopropyltoluene	ND		ug/kg	50	5.4
Naphthalene	ND		ug/kg	200	32.
Acrylonitrile	ND		ug/kg	200	58.
n-Propylbenzene	ND		ug/kg	50	8.6
1,2,3-Trichlorobenzene	ND		ug/kg	100	16.
1,2,4-Trichlorobenzene	ND		ug/kg	100	14.
1,3,5-Trimethylbenzene	ND		ug/kg	100	9.6
1,2,4-Trimethylbenzene	ND		ug/kg	100	17.
1,4-Dioxane	ND		ug/kg	4000	1800
p-Diethylbenzene	ND		ug/kg	100	8.8
p-Ethyltoluene	ND		ug/kg	100	19.
1,2,4,5-Tetramethylbenzene	ND		ug/kg	100	9.6
Ethyl ether	ND		ug/kg	100	17.
trans-1,4-Dichloro-2-butene	ND		ug/kg	250	71.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	91		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	100		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02 Batch: WG1262084-10 WG1262084-11								
Methylene chloride	90		88		70-130	2		20
1,1-Dichloroethane	90		90		70-130	0		20
Chloroform	88		86		70-130	2		20
Carbon tetrachloride	100		99		63-132	1		20
1,2-Dichloropropane	93		93		70-130	0		20
Dibromochloromethane	87		85		63-130	2		20
1,1,2-Trichloroethane	79		76		70-130	4		20
Tetrachloroethene	96		93		70-130	3		20
Chlorobenzene	88		87		75-130	1		20
Trichlorofluoromethane	88		85		62-150	3		20
1,2-Dichloroethane	87		86		70-130	1		20
1,1,1-Trichloroethane	92		90		67-130	2		20
Bromodichloromethane	87		84		67-130	4		20
trans-1,3-Dichloropropene	**68**	Q	**66**	Q	70-130	3		20
cis-1,3-Dichloropropene	82		80		70-130	2		20
1,1-Dichloropropene	93		91		70-130	2		20
Bromoform	75		72		54-136	4		20
1,1,2,2-Tetrachloroethane	74		72		67-130	3		20
Benzene	93		92		70-130	1		20
Toluene	85		82		70-130	4		20
Ethylbenzene	84		82		70-130	2		20
Chloromethane	110		100		64-130	10		20
Bromomethane	70		69		39-139	1		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02 Batch: WG1262084-10 WG1262084-11								
Vinyl chloride	94		92		55-140	2		20
Chloroethane	80		79		55-138	1		20
1,1-Dichloroethene	96		96		61-145	0		20
trans-1,2-Dichloroethene	98		95		70-130	3		20
Trichloroethene	92		89		70-130	3		20
1,2-Dichlorobenzene	92		89		70-130	3		20
1,3-Dichlorobenzene	91		89		70-130	2		20
1,4-Dichlorobenzene	91		89		70-130	2		20
Methyl tert butyl ether	89		86		63-130	3		20
p/m-Xylene	90		90		70-130	0		20
o-Xylene	90		90		70-130	0		20
cis-1,2-Dichloroethene	99		96		70-130	3		20
Dibromomethane	93		92		70-130	1		20
1,2,3-Trichloropropane	72		70		64-130	3		20
Acrylonitrile	100		98		70-130	2		20
Styrene	95		90		70-130	5		20
Dichlorodifluoromethane	110		100		36-147	10		20
Acetone	90		86		58-148	5		20
Carbon disulfide	90		88		51-130	2		20
2-Butanone	89		84		63-138	6		20
Vinyl acetate	94		89		70-130	5		20
4-Methyl-2-pentanone	77		76		59-130	1		20
2-Hexanone	75		71		57-130	5		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02 Batch: WG1262084-10 WG1262084-11								
Bromochloromethane	110		110		70-130	0		20
2,2-Dichloropropane	95		91		63-133	4		20
1,2-Dibromoethane	87		84		70-130	4		20
1,3-Dichloropropane	78		75		70-130	4		20
1,1,1,2-Tetrachloroethane	90		87		64-130	3		20
Bromobenzene	90		88		70-130	2		20
n-Butylbenzene	84		80		53-136	5		20
sec-Butylbenzene	90		87		70-130	3		20
tert-Butylbenzene	94		90		70-130	4		20
o-Chlorotoluene	82		80		70-130	2		20
p-Chlorotoluene	83		80		70-130	4		20
1,2-Dibromo-3-chloropropane	72		71		41-144	1		20
Hexachlorobutadiene	87		84		63-130	4		20
Isopropylbenzene	91		89		70-130	2		20
p-Isopropyltoluene	95		92		70-130	3		20
Naphthalene	80		77		70-130	4		20
n-Propylbenzene	85		83		69-130	2		20
1,2,3-Trichlorobenzene	86		83		70-130	4		20
1,2,4-Trichlorobenzene	86		84		70-130	2		20
1,3,5-Trimethylbenzene	88		85		64-130	3		20
1,2,4-Trimethylbenzene	89		86		70-130	3		20
1,4-Dioxane	104		96		56-162	8		20
p-Diethylbenzene	93		90		70-130	3		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02 Batch: WG1262084-10 WG1262084-11								
p-Ethyltoluene	91		88		70-130	3		20
1,2,4,5-Tetramethylbenzene	86		83		70-130	4		20
Ethyl ether	78		76		59-134	3		20
trans-1,4-Dichloro-2-butene	73		**58**	Q	70-130	**23**	Q	20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	89		89		70-130
Toluene-d8	87		88		70-130
4-Bromofluorobenzene	87		86		70-130
Dibromofluoromethane	101		100		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1262084-3 WG1262084-4								
Methylene chloride	92		92		70-130	0		20
1,1-Dichloroethane	95		95		70-130	0		20
Chloroform	92		92		70-130	0		20
Carbon tetrachloride	110		110		63-132	0		20
1,2-Dichloropropane	96		96		70-130	0		20
Dibromochloromethane	96		93		63-130	3		20
1,1,2-Trichloroethane	86		85		70-130	1		20
Tetrachloroethene	100		98		70-130	2		20
Chlorobenzene	94		91		75-130	3		20
Trichlorofluoromethane	100		97		62-150	3		20
1,2-Dichloroethane	96		97		70-130	1		20
1,1,1-Trichloroethane	100		98		67-130	2		20
Bromodichloromethane	90		90		67-130	0		20
trans-1,3-Dichloropropene	74		73		70-130	1		20
cis-1,3-Dichloropropene	84		84		70-130	0		20
1,1-Dichloropropene	98		98		70-130	0		20
Bromoform	81		82		54-136	1		20
1,1,2,2-Tetrachloroethane	82		82		67-130	0		20
Benzene	94		95		70-130	1		20
Toluene	89		86		70-130	3		20
Ethylbenzene	90		87		70-130	3		20
Chloromethane	120		120		64-130	0		20
Bromomethane	92		86		39-139	7		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1262084-3 WG1262084-4								
Vinyl chloride	100		100		55-140	0		20
Chloroethane	85		84		55-138	1		20
1,1-Dichloroethene	100		98		61-145	2		20
trans-1,2-Dichloroethene	100		100		70-130	0		20
Trichloroethene	95		94		70-130	1		20
1,2-Dichlorobenzene	97		96		70-130	1		20
1,3-Dichlorobenzene	97		94		70-130	3		20
1,4-Dichlorobenzene	97		94		70-130	3		20
Methyl tert butyl ether	93		96		63-130	3		20
p/m-Xylene	95		95		70-130	0		20
o-Xylene	95		95		70-130	0		20
cis-1,2-Dichloroethene	100		99		70-130	1		20
Dibromomethane	98		99		70-130	1		20
1,2,3-Trichloropropane	80		82		64-130	2		20
Acrylonitrile	110		120		70-130	9		20
Styrene	100		95		70-130	5		20
Dichlorodifluoromethane	130		120		36-147	8		20
Acetone	98		100		58-148	2		20
Carbon disulfide	94		93		51-130	1		20
2-Butanone	100		110		63-138	10		20
Vinyl acetate	110		110		70-130	0		20
4-Methyl-2-pentanone	88		88		59-130	0		20
2-Hexanone	82		85		57-130	4		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1262084-3 WG1262084-4								
Bromochloromethane	110		110		70-130	0		20
2,2-Dichloropropane	100		99		63-133	1		20
1,2-Dibromoethane	93		95		70-130	2		20
1,3-Dichloropropane	84		83		70-130	1		20
1,1,1,2-Tetrachloroethane	96		94		64-130	2		20
Bromobenzene	94		92		70-130	2		20
n-Butylbenzene	90		87		53-136	3		20
sec-Butylbenzene	97		93		70-130	4		20
tert-Butylbenzene	99		96		70-130	3		20
o-Chlorotoluene	87		84		70-130	4		20
p-Chlorotoluene	88		84		70-130	5		20
1,2-Dibromo-3-chloropropane	78		80		41-144	3		20
Hexachlorobutadiene	92		89		63-130	3		20
Isopropylbenzene	97		94		70-130	3		20
p-Isopropyltoluene	100		98		70-130	2		20
Naphthalene	90		94		70-130	4		20
n-Propylbenzene	92		89		69-130	3		20
1,2,3-Trichlorobenzene	98		98		70-130	0		20
1,2,4-Trichlorobenzene	94		93		70-130	1		20
1,3,5-Trimethylbenzene	94		90		64-130	4		20
1,2,4-Trimethylbenzene	94		91		70-130	3		20
1,4-Dioxane	108		108		56-162	0		20
p-Diethylbenzene	100		96		70-130	4		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG1262084-3 WG1262084-4								
p-Ethyltoluene	96		92		70-130	4		20
1,2,4,5-Tetramethylbenzene	91		89		70-130	2		20
Ethyl ether	83		85		59-134	2		20
trans-1,4-Dichloro-2-butene	92		93		70-130	1		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		97		70-130
Toluene-d8	90		87		70-130
4-Bromofluorobenzene	88		87		70-130
Dibromofluoromethane	101		103		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 04,06-08 Batch: WG1262130-3 WG1262130-4								
Methylene chloride	96		86		70-130	11		30
1,1-Dichloroethane	108		94		70-130	14		30
Chloroform	101		89		70-130	13		30
Carbon tetrachloride	90		76		70-130	17		30
1,2-Dichloropropane	106		94		70-130	12		30
Dibromochloromethane	90		86		70-130	5		30
1,1,2-Trichloroethane	99		94		70-130	5		30
Tetrachloroethene	91		78		70-130	15		30
Chlorobenzene	93		82		70-130	13		30
Trichlorofluoromethane	**58**	Q	**49**	Q	70-139	17		30
1,2-Dichloroethane	96		90		70-130	6		30
1,1,1-Trichloroethane	98		84		70-130	15		30
Bromodichloromethane	94		87		70-130	8		30
trans-1,3-Dichloropropene	103		95		70-130	8		30
cis-1,3-Dichloropropene	99		91		70-130	8		30
1,1-Dichloropropene	103		86		70-130	18		30
Bromoform	86		84		70-130	2		30
1,1,2,2-Tetrachloroethane	100		100		70-130	0		30
Benzene	100		86		70-130	15		30
Toluene	100		86		70-130	15		30
Ethylbenzene	99		86		70-130	14		30
Chloromethane	120		96		52-130	22		30
Bromomethane	**55**	Q	**46**	Q	57-147	18		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 04,06-08 Batch: WG1262130-3 WG1262130-4								
Vinyl chloride	84		68		67-130	21		30
Chloroethane	67		57		50-151	16		30
1,1-Dichloroethene	102		85		65-135	18		30
trans-1,2-Dichloroethene	98		83		70-130	17		30
Trichloroethene	95		81		70-130	16		30
1,2-Dichlorobenzene	89		82		70-130	8		30
1,3-Dichlorobenzene	91		81		70-130	12		30
1,4-Dichlorobenzene	90		81		70-130	11		30
Methyl tert butyl ether	100		96		66-130	4		30
p/m-Xylene	94		82		70-130	14		30
o-Xylene	93		82		70-130	13		30
cis-1,2-Dichloroethene	95		84		70-130	12		30
Dibromomethane	87		84		70-130	4		30
Styrene	93		82		70-130	13		30
Dichlorodifluoromethane	81		66		30-146	20		30
Acetone	112		111		54-140	1		30
Carbon disulfide	99		82		59-130	19		30
2-Butanone	112		112		70-130	0		30
Vinyl acetate	101		97		70-130	4		30
4-Methyl-2-pentanone	107		108		70-130	1		30
1,2,3-Trichloropropane	100		99		68-130	1		30
2-Hexanone	108		108		70-130	0		30
Bromochloromethane	89		82		70-130	8		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 04,06-08 Batch: WG1262130-3 WG1262130-4								
2,2-Dichloropropane	104		88		70-130	17		30
1,2-Dibromoethane	91		88		70-130	3		30
1,3-Dichloropropane	102		96		69-130	6		30
1,1,1,2-Tetrachloroethane	93		84		70-130	10		30
Bromobenzene	91		83		70-130	9		30
n-Butylbenzene	102		87		70-130	16		30
sec-Butylbenzene	101		86		70-130	16		30
tert-Butylbenzene	98		84		70-130	15		30
o-Chlorotoluene	104		91		70-130	13		30
p-Chlorotoluene	102		91		70-130	11		30
1,2-Dibromo-3-chloropropane	79		81		68-130	3		30
Hexachlorobutadiene	92		79		67-130	15		30
Isopropylbenzene	101		86		70-130	16		30
p-Isopropyltoluene	98		84		70-130	15		30
Naphthalene	88		86		70-130	2		30
Acrylonitrile	107		108		70-130	1		30
n-Propylbenzene	103		88		70-130	16		30
1,2,3-Trichlorobenzene	86		80		70-130	7		30
1,2,4-Trichlorobenzene	85		79		70-130	7		30
1,3,5-Trimethylbenzene	101		88		70-130	14		30
1,2,4-Trimethylbenzene	100		88		70-130	13		30
1,4-Dioxane	86		91		65-136	6		30
p-Diethylbenzene	96		82		70-130	16		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 04,06-08 Batch: WG1262130-3 WG1262130-4								
p-Ethyltoluene	101		87		70-130	15		30
1,2,4,5-Tetramethylbenzene	94		83		70-130	12		30
Ethyl ether	69		**65**	Q	67-130	6		30
trans-1,4-Dichloro-2-butene	111		111		70-130	0		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	101		103		70-130
Toluene-d8	103		103		70-130
4-Bromofluorobenzene	115		113		70-130
Dibromofluoromethane	94		96		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 07 Batch: WG1262130-8 WG1262130-9								
Methylene chloride	89		87		70-130	2		30
1,1-Dichloroethane	96		94		70-130	2		30
Chloroform	104		99		70-130	5		30
Carbon tetrachloride	107		105		70-130	2		30
1,2-Dichloropropane	88		89		70-130	1		30
Dibromochloromethane	105		104		70-130	1		30
1,1,2-Trichloroethane	96		94		70-130	2		30
Tetrachloroethene	99		95		70-130	4		30
Chlorobenzene	94		93		70-130	1		30
Trichlorofluoromethane	**62**	Q	**61**	Q	70-139	2		30
1,2-Dichloroethane	105		107		70-130	2		30
1,1,1-Trichloroethane	111		110		70-130	1		30
Bromodichloromethane	102		100		70-130	2		30
trans-1,3-Dichloropropene	103		102		70-130	1		30
cis-1,3-Dichloropropene	93		93		70-130	0		30
1,1-Dichloropropene	93		93		70-130	0		30
Bromoform	95		95		70-130	0		30
1,1,2,2-Tetrachloroethane	91		93		70-130	2		30
Benzene	90		88		70-130	2		30
Toluene	96		94		70-130	2		30
Ethylbenzene	98		96		70-130	2		30
Chloromethane	119		125		52-130	5		30
Bromomethane	**39**	Q	**42**	Q	57-147	7		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 07 Batch: WG1262130-8 WG1262130-9								
Vinyl chloride	77		82		67-130	6		30
Chloroethane	**37**	Q	**42**	Q	50-151	13		30
1,1-Dichloroethene	89		87		65-135	2		30
trans-1,2-Dichloroethene	90		89		70-130	1		30
Trichloroethene	96		94		70-130	2		30
1,2-Dichlorobenzene	94		93		70-130	1		30
1,3-Dichlorobenzene	95		94		70-130	1		30
1,4-Dichlorobenzene	96		94		70-130	2		30
Methyl tert butyl ether	92		95		66-130	3		30
p/m-Xylene	95		93		70-130	2		30
o-Xylene	94		93		70-130	1		30
cis-1,2-Dichloroethene	90		88		70-130	2		30
Dibromomethane	93		94		70-130	1		30
Styrene	98		96		70-130	2		30
Dichlorodifluoromethane	102		99		30-146	3		30
Acetone	91		91		54-140	0		30
Carbon disulfide	83		82		59-130	1		30
2-Butanone	82		86		70-130	5		30
Vinyl acetate	82		84		70-130	2		30
4-Methyl-2-pentanone	86		87		70-130	1		30
1,2,3-Trichloropropane	97		99		68-130	2		30
2-Hexanone	80		82		70-130	2		30
Bromochloromethane	88		89		70-130	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 07 Batch: WG1262130-8 WG1262130-9								
2,2-Dichloropropane	109		106		70-130	3		30
1,2-Dibromoethane	94		92		70-130	2		30
1,3-Dichloropropane	95		95		69-130	0		30
1,1,1,2-Tetrachloroethane	106		104		70-130	2		30
Bromobenzene	94		92		70-130	2		30
n-Butylbenzene	100		98		70-130	2		30
sec-Butylbenzene	98		98		70-130	0		30
tert-Butylbenzene	97		96		70-130	1		30
o-Chlorotoluene	100		100		70-130	0		30
p-Chlorotoluene	102		100		70-130	2		30
1,2-Dibromo-3-chloropropane	74		87		68-130	16		30
Hexachlorobutadiene	89		102		67-130	14		30
Isopropylbenzene	94		93		70-130	1		30
p-Isopropyltoluene	100		98		70-130	2		30
Naphthalene	**66**	Q	91		70-130	**32**	Q	30
Acrylonitrile	84		86		70-130	2		30
n-Propylbenzene	97		95		70-130	2		30
1,2,3-Trichlorobenzene	88		93		70-130	6		30
1,2,4-Trichlorobenzene	71		91		70-130	25		30
1,3,5-Trimethylbenzene	102		99		70-130	3		30
1,2,4-Trimethylbenzene	102		101		70-130	1		30
1,4-Dioxane	74		79		65-136	7		30
p-Diethylbenzene	97		96		70-130	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 07 Batch: WG1262130-8 WG1262130-9								
p-Ethyltoluene	98		96		70-130	2		30
1,2,4,5-Tetramethylbenzene	100		97		70-130	3		30
Ethyl ether	**45**	Q	**31**	Q	67-130	**37**	Q	30
trans-1,4-Dichloro-2-butene	105		108		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	118		120		70-130
Toluene-d8	106		104		70-130
4-Bromofluorobenzene	110		106		70-130
Dibromofluoromethane	106		105		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 05 Batch: WG1262697-3 WG1262697-4								
Methylene chloride	83		83		70-130	0		30
1,1-Dichloroethane	93		92		70-130	1		30
Chloroform	99		98		70-130	1		30
Carbon tetrachloride	125		127		70-130	2		30
1,2-Dichloropropane	86		87		70-130	1		30
Dibromochloromethane	99		100		70-130	1		30
1,1,2-Trichloroethane	81		80		70-130	1		30
Tetrachloroethene	111		110		70-130	1		30
Chlorobenzene	95		93		70-130	2		30
Trichlorofluoromethane	123		122		70-139	1		30
1,2-Dichloroethane	98		99		70-130	1		30
1,1,1-Trichloroethane	114		113		70-130	1		30
Bromodichloromethane	98		98		70-130	0		30
trans-1,3-Dichloropropene	86		86		70-130	0		30
cis-1,3-Dichloropropene	94		94		70-130	0		30
1,1-Dichloropropene	101		101		70-130	0		30
Bromoform	96		94		70-130	2		30
1,1,2,2-Tetrachloroethane	73		72		70-130	1		30
Benzene	92		91		70-130	1		30
Toluene	92		90		70-130	2		30
Ethylbenzene	94		94		70-130	0		30
Chloromethane	87		86		52-130	1		30
Bromomethane	83		84		57-147	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 05 Batch: WG1262697-3 WG1262697-4								
Vinyl chloride	82		81		67-130	1		30
Chloroethane	74		73		50-151	1		30
1,1-Dichloroethene	104		104		65-135	0		30
trans-1,2-Dichloroethene	104		102		70-130	2		30
Trichloroethene	102		101		70-130	1		30
1,2-Dichlorobenzene	95		94		70-130	1		30
1,3-Dichlorobenzene	97		97		70-130	0		30
1,4-Dichlorobenzene	97		96		70-130	1		30
Methyl tert butyl ether	96		96		66-130	0		30
p/m-Xylene	100		100		70-130	0		30
o-Xylene	100		99		70-130	1		30
cis-1,2-Dichloroethene	100		101		70-130	1		30
Dibromomethane	93		94		70-130	1		30
Styrene	101		102		70-130	1		30
Dichlorodifluoromethane	89		89		30-146	0		30
Acetone	85		77		54-140	10		30
Carbon disulfide	87		86		59-130	1		30
2-Butanone	95		91		70-130	4		30
Vinyl acetate	89		90		70-130	1		30
4-Methyl-2-pentanone	81		79		70-130	3		30
1,2,3-Trichloropropane	76		76		68-130	0		30
2-Hexanone	77		75		70-130	3		30
Bromochloromethane	108		109		70-130	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 05 Batch: WG1262697-3 WG1262697-4								
2,2-Dichloropropane	109		107		70-130	2		30
1,2-Dibromoethane	91		91		70-130	0		30
1,3-Dichloropropane	80		79		69-130	1		30
1,1,1,2-Tetrachloroethane	101		104		70-130	3		30
Bromobenzene	95		93		70-130	2		30
n-Butylbenzene	92		92		70-130	0		30
sec-Butylbenzene	96		94		70-130	2		30
tert-Butylbenzene	100		100		70-130	0		30
o-Chlorotoluene	88		85		70-130	3		30
p-Chlorotoluene	88		87		70-130	1		30
1,2-Dibromo-3-chloropropane	94		98		68-130	4		30
Hexachlorobutadiene	110		110		67-130	0		30
Isopropylbenzene	95		93		70-130	2		30
p-Isopropyltoluene	104		103		70-130	1		30
Naphthalene	98		100		70-130	2		30
Acrylonitrile	94		93		70-130	1		30
n-Propylbenzene	87		87		70-130	0		30
1,2,3-Trichlorobenzene	102		103		70-130	1		30
1,2,4-Trichlorobenzene	101		102		70-130	1		30
1,3,5-Trimethylbenzene	96		95		70-130	1		30
1,2,4-Trimethylbenzene	96		95		70-130	1		30
1,4-Dioxane	84		82		65-136	2		30
p-Diethylbenzene	103		101		70-130	2		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 05 Batch: WG1262697-3 WG1262697-4								
p-Ethyltoluene	95		93		70-130	2		30
1,2,4,5-Tetramethylbenzene	100		100		70-130	0		30
Ethyl ether	88		87		67-130	1		30
trans-1,4-Dichloro-2-butene	78		81		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	102		103		70-130
Toluene-d8	91		91		70-130
4-Bromofluorobenzene	86		86		70-130
Dibromofluoromethane	105		105		70-130

SEMIVOLATILES

Project Name: 450 JOHNSON AVE.
Lab Number: L1931803
Project Number: 170588001
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-04
Client ID: SB08_5.0-5.5
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 11:20
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/20/19 03:17
Analyst: RC
Percent Solids: 92%

Extraction Method: EPA 3546
Extraction Date: 07/19/19 03:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	210		ug/kg	140	18.	1
1,2,4-Trichlorobenzene	ND		ug/kg	180	20.	1
Hexachlorobenzene	ND		ug/kg	100	20.	1
Bis(2-chloroethyl)ether	ND		ug/kg	160	24.	1
2-Chloronaphthalene	ND		ug/kg	180	17.	1
1,2-Dichlorobenzene	ND		ug/kg	180	32.	1
1,3-Dichlorobenzene	ND		ug/kg	180	30.	1
1,4-Dichlorobenzene	ND		ug/kg	180	31.	1
3,3'-Dichlorobenzidine	ND		ug/kg	180	47.	1
2,4-Dinitrotoluene	ND		ug/kg	180	35.	1
2,6-Dinitrotoluene	ND		ug/kg	180	30.	1
Fluoranthene	3100		ug/kg	100	20.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	180	19.	1
4-Bromophenyl phenyl ether	ND		ug/kg	180	27.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	210	30.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	190	18.	1
Hexachlorobutadiene	ND		ug/kg	180	26.	1
Hexachlorocyclopentadiene	ND		ug/kg	500	160	1
Hexachloroethane	ND		ug/kg	140	28.	1
Isophorone	ND		ug/kg	160	23.	1
Naphthalene	430		ug/kg	180	21.	1
Nitrobenzene	ND		ug/kg	160	26.	1
NDPA/DPA	ND		ug/kg	140	20.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	180	27.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	180	61.	1
Butyl benzyl phthalate	44	J	ug/kg	180	44.	1
Di-n-butylphthalate	ND		ug/kg	180	33.	1
Di-n-octylphthalate	ND		ug/kg	180	60.	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-04 Date Collected: 07/18/19 11:20

Client ID: SB08_5.0-5.5 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	180	16.	1
Dimethyl phthalate	ND		ug/kg	180	37.	1
Benzo(a)anthracene	2200		ug/kg	100	20.	1
Benzo(a)pyrene	2000		ug/kg	140	43.	1
Benzo(b)fluoranthene	2300		ug/kg	100	30.	1
Benzo(k)fluoranthene	940		ug/kg	100	28.	1
Chrysene	1700		ug/kg	100	18.	1
Acenaphthylene	240		ug/kg	140	27.	1
Anthracene	660		ug/kg	100	34.	1
Benzo(ghi)perylene	1100		ug/kg	140	21.	1
Fluorene	260		ug/kg	180	17.	1
Phenanthrene	1900		ug/kg	100	21.	1
Dibenzo(a,h)anthracene	300		ug/kg	100	20.	1
Indeno(1,2,3-cd)pyrene	1200		ug/kg	140	24.	1
Pyrene	3000		ug/kg	100	18.	1
Biphenyl	ND		ug/kg	400	41.	1
4-Chloroaniline	ND		ug/kg	180	32.	1
2-Nitroaniline	ND		ug/kg	180	34.	1
3-Nitroaniline	ND		ug/kg	180	33.	1
4-Nitroaniline	ND		ug/kg	180	73.	1
Dibenzofuran	200		ug/kg	180	17.	1
2-Methylnaphthalene	170	J	ug/kg	210	21.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	180	18.	1
Acetophenone	ND		ug/kg	180	22.	1
2,4,6-Trichlorophenol	ND		ug/kg	100	33.	1
p-Chloro-m-cresol	ND		ug/kg	180	26.	1
2-Chlorophenol	ND		ug/kg	180	21.	1
2,4-Dichlorophenol	ND		ug/kg	160	28.	1
2,4-Dimethylphenol	ND		ug/kg	180	58.	1
2-Nitrophenol	ND		ug/kg	380	66.	1
4-Nitrophenol	ND		ug/kg	250	72.	1
2,4-Dinitrophenol	ND		ug/kg	840	82.	1
4,6-Dinitro-o-cresol	ND		ug/kg	460	84.	1
Pentachlorophenol	ND		ug/kg	140	39.	1
Phenol	34	J	ug/kg	180	26.	1
2-Methylphenol	ND		ug/kg	180	27.	1
3-Methylphenol/4-Methylphenol	54	J	ug/kg	250	28.	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-04 Date Collected: 07/18/19 11:20

Client ID: SB08_5.0-5.5 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	180	34.	1
Benzoic Acid	ND		ug/kg	570	180	1
Benzyl Alcohol	ND		ug/kg	180	54.	1
Carbazole	240		ug/kg	180	17.	1
1,4-Dioxane	ND		ug/kg	26	8.1	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	108		25-120
Phenol-d6	115		10-120
Nitrobenzene-d5	115		23-120
2-Fluorobiphenyl	92		30-120
2,4,6-Tribromophenol	123		10-136
4-Terphenyl-d14	88		18-120

Project Name: 450 JOHNSON AVE.
Project Number: 170588001
Lab Number: L1931803
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-05
Client ID: SB08_14.0-14.5
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 11:10
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/21/19 19:48
Analyst: RC
Percent Solids: 72%

Extraction Method: EPA 3546
Extraction Date: 07/19/19 03:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	180	24.	1
1,2,4-Trichlorobenzene	ND		ug/kg	230	26.	1
Hexachlorobenzene	ND		ug/kg	140	26.	1
Bis(2-chloroethyl)ether	ND		ug/kg	210	31.	1
2-Chloronaphthalene	ND		ug/kg	230	23.	1
1,2-Dichlorobenzene	ND		ug/kg	230	41.	1
1,3-Dichlorobenzene	ND		ug/kg	230	39.	1
1,4-Dichlorobenzene	ND		ug/kg	230	40.	1
3,3'-Dichlorobenzidine	ND		ug/kg	230	61.	1
2,4-Dinitrotoluene	ND		ug/kg	230	46.	1
2,6-Dinitrotoluene	ND		ug/kg	230	39.	1
Fluoranthene	ND		ug/kg	140	26.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	230	24.	1
4-Bromophenyl phenyl ether	ND		ug/kg	230	35.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	270	39.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	250	23.	1
Hexachlorobutadiene	ND		ug/kg	230	34.	1
Hexachlorocyclopentadiene	ND		ug/kg	650	210	1
Hexachloroethane	ND		ug/kg	180	37.	1
Isophorone	ND		ug/kg	210	30.	1
Naphthalene	ND		ug/kg	230	28.	1
Nitrobenzene	ND		ug/kg	210	34.	1
NDPA/DPA	ND		ug/kg	180	26.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	230	35.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	230	79.	1
Butyl benzyl phthalate	ND		ug/kg	230	58.	1
Di-n-butylphthalate	ND		ug/kg	230	43.	1
Di-n-octylphthalate	ND		ug/kg	230	78.	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-05 Date Collected: 07/18/19 11:10

Client ID: SB08_14.0-14.5 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	230	21.	1
Dimethyl phthalate	ND		ug/kg	230	48.	1
Benzo(a)anthracene	ND		ug/kg	140	26.	1
Benzo(a)pyrene	ND		ug/kg	180	56.	1
Benzo(b)fluoranthene	ND		ug/kg	140	38.	1
Benzo(k)fluoranthene	ND		ug/kg	140	37.	1
Chrysene	ND		ug/kg	140	24.	1
Acenaphthylene	ND		ug/kg	180	35.	1
Anthracene	ND		ug/kg	140	45.	1
Benzo(ghi)perylene	ND		ug/kg	180	27.	1
Fluorene	ND		ug/kg	230	22.	1
Phenanthrene	ND		ug/kg	140	28.	1
Dibenzo(a,h)anthracene	ND		ug/kg	140	26.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	180	32.	1
Pyrene	ND		ug/kg	140	23.	1
Biphenyl	ND		ug/kg	520	53.	1
4-Chloroaniline	ND		ug/kg	230	42.	1
2-Nitroaniline	ND		ug/kg	230	44.	1
3-Nitroaniline	ND		ug/kg	230	43.	1
4-Nitroaniline	ND		ug/kg	230	95.	1
Dibenzofuran	ND		ug/kg	230	22.	1
2-Methylnaphthalene	ND		ug/kg	270	28.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	230	24.	1
Acetophenone	ND		ug/kg	230	28.	1
2,4,6-Trichlorophenol	ND		ug/kg	140	43.	1
p-Chloro-m-cresol	ND		ug/kg	230	34.	1
2-Chlorophenol	ND		ug/kg	230	27.	1
2,4-Dichlorophenol	ND		ug/kg	210	37.	1
2,4-Dimethylphenol	ND		ug/kg	230	76.	1
2-Nitrophenol	ND		ug/kg	490	86.	1
4-Nitrophenol	ND		ug/kg	320	93.	1
2,4-Dinitrophenol	ND		ug/kg	1100	110	1
4,6-Dinitro-o-cresol	ND		ug/kg	600	110	1
Pentachlorophenol	ND		ug/kg	180	50.	1
Phenol	ND		ug/kg	230	34.	1
2-Methylphenol	ND		ug/kg	230	35.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	330	36.	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-05 Date Collected: 07/18/19 11:10

Client ID: SB08_14.0-14.5 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	230	44.	1
Benzoic Acid	ND		ug/kg	740	230	1
Benzyl Alcohol	ND		ug/kg	230	70.	1
Carbazole	ND		ug/kg	230	22.	1
1,4-Dioxane	ND		ug/kg	34	10.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	75		25-120
Phenol-d6	76		10-120
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	77		30-120
2,4,6-Tribromophenol	91		10-136
4-Terphenyl-d14	68		18-120

Project Name: 450 JOHNSON AVE.
Project Number: 170588001
Lab Number: L1931803
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-06
Client ID: SB12_6.5-7.0
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 10:15
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/21/19 20:13
Analyst: RC
Percent Solids: 89%

Extraction Method: EPA 3546
Extraction Date: 07/19/19 03:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	150	19.	1
1,2,4-Trichlorobenzene	ND		ug/kg	190	21.	1
Hexachlorobenzene	ND		ug/kg	110	21.	1
Bis(2-chloroethyl)ether	ND		ug/kg	170	25.	1
2-Chloronaphthalene	ND		ug/kg	190	18.	1
1,2-Dichlorobenzene	ND		ug/kg	190	33.	1
1,3-Dichlorobenzene	ND		ug/kg	190	32.	1
1,4-Dichlorobenzene	ND		ug/kg	190	32.	1
3,3'-Dichlorobenzidine	ND		ug/kg	190	50.	1
2,4-Dinitrotoluene	ND		ug/kg	190	37.	1
2,6-Dinitrotoluene	ND		ug/kg	190	32.	1
Fluoranthene	310		ug/kg	110	21.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	190	20.	1
4-Bromophenyl phenyl ether	ND		ug/kg	190	28.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	220	32.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	200	19.	1
Hexachlorobutadiene	ND		ug/kg	190	27.	1
Hexachlorocyclopentadiene	ND		ug/kg	530	170	1
Hexachloroethane	ND		ug/kg	150	30.	1
Isophorone	ND		ug/kg	170	24.	1
Naphthalene	ND		ug/kg	190	23.	1
Nitrobenzene	ND		ug/kg	170	28.	1
NDPA/DPA	ND		ug/kg	150	21.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	190	29.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	190	64.	1
Butyl benzyl phthalate	ND		ug/kg	190	47.	1
Di-n-butylphthalate	ND		ug/kg	190	35.	1
Di-n-octylphthalate	ND		ug/kg	190	63.	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-06 Date Collected: 07/18/19 10:15

Client ID: SB12_6.5-7.0 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	190	17.	1
Dimethyl phthalate	ND		ug/kg	190	39.	1
Benzo(a)anthracene	140		ug/kg	110	21.	1
Benzo(a)pyrene	160		ug/kg	150	45.	1
Benzo(b)fluoranthene	170		ug/kg	110	31.	1
Benzo(k)fluoranthene	54	J	ug/kg	110	30.	1
Chrysene	130		ug/kg	110	19.	1
Acenaphthylene	ND		ug/kg	150	29.	1
Anthracene	48	J	ug/kg	110	36.	1
Benzo(ghi)perylene	81	J	ug/kg	150	22.	1
Fluorene	ND		ug/kg	190	18.	1
Phenanthrene	220		ug/kg	110	23.	1
Dibenzo(a,h)anthracene	23	J	ug/kg	110	22.	1
Indeno(1,2,3-cd)pyrene	91	J	ug/kg	150	26.	1
Pyrene	280		ug/kg	110	18.	1
Biphenyl	ND		ug/kg	420	43.	1
4-Chloroaniline	ND		ug/kg	190	34.	1
2-Nitroaniline	ND		ug/kg	190	36.	1
3-Nitroaniline	ND		ug/kg	190	35.	1
4-Nitroaniline	ND		ug/kg	190	77.	1
Dibenzofuran	ND		ug/kg	190	18.	1
2-Methylnaphthalene	ND		ug/kg	220	22.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	190	19.	1
Acetophenone	ND		ug/kg	190	23.	1
2,4,6-Trichlorophenol	ND		ug/kg	110	35.	1
p-Chloro-m-cresol	ND		ug/kg	190	28.	1
2-Chlorophenol	ND		ug/kg	190	22.	1
2,4-Dichlorophenol	ND		ug/kg	170	30.	1
2,4-Dimethylphenol	ND		ug/kg	190	61.	1
2-Nitrophenol	ND		ug/kg	400	70.	1
4-Nitrophenol	ND		ug/kg	260	76.	1
2,4-Dinitrophenol	ND		ug/kg	890	87.	1
4,6-Dinitro-o-cresol	ND		ug/kg	480	89.	1
Pentachlorophenol	ND		ug/kg	150	41.	1
Phenol	ND		ug/kg	190	28.	1
2-Methylphenol	ND		ug/kg	190	29.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	270	29.	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-06 Date Collected: 07/18/19 10:15

Client ID: SB12_6.5-7.0 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	190	36.	1
Benzoic Acid	ND		ug/kg	600	190	1
Benzyl Alcohol	ND		ug/kg	190	57.	1
Carbazole	20	J	ug/kg	190	18.	1
1,4-Dioxane	ND		ug/kg	28	8.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	71		25-120
Phenol-d6	75		10-120
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	77		30-120
2,4,6-Tribromophenol	94		10-136
4-Terphenyl-d14	67		18-120

Project Name: 450 JOHNSON AVE.
Lab Number: L1931803
Project Number: 170588001
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-07
Client ID: SB07_4.5-5.0
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 15:00
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/22/19 16:42
Analyst: IM
Percent Solids: 88%

Extraction Method: EPA 3546
Extraction Date: 07/21/19 01:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	74	J	ug/kg	150	19.	1
1,2,4-Trichlorobenzene	ND		ug/kg	190	21.	1
Hexachlorobenzene	ND		ug/kg	110	21.	1
Bis(2-chloroethyl)ether	ND		ug/kg	170	25.	1
2-Chloronaphthalene	ND		ug/kg	190	18.	1
1,2-Dichlorobenzene	ND		ug/kg	190	34.	1
1,3-Dichlorobenzene	ND		ug/kg	190	32.	1
1,4-Dichlorobenzene	ND		ug/kg	190	33.	1
3,3'-Dichlorobenzidine	ND		ug/kg	190	50.	1
2,4-Dinitrotoluene	ND		ug/kg	190	37.	1
2,6-Dinitrotoluene	ND		ug/kg	190	32.	1
Fluoranthene	1200		ug/kg	110	21.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	190	20.	1
4-Bromophenyl phenyl ether	ND		ug/kg	190	28.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	220	32.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	200	19.	1
Hexachlorobutadiene	ND		ug/kg	190	27.	1
Hexachlorocyclopentadiene	ND		ug/kg	530	170	1
Hexachloroethane	ND		ug/kg	150	30.	1
Isophorone	ND		ug/kg	170	24.	1
Naphthalene	65	J	ug/kg	190	23.	1
Nitrobenzene	ND		ug/kg	170	28.	1
NDPA/DPA	ND		ug/kg	150	21.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	190	29.	1
Bis(2-ethylhexyl)phthalate	100	J	ug/kg	190	65.	1
Butyl benzyl phthalate	ND		ug/kg	190	47.	1
Di-n-butylphthalate	ND		ug/kg	190	35.	1
Di-n-octylphthalate	ND		ug/kg	190	64.	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-07 Date Collected: 07/18/19 15:00

Client ID: SB07_4.5-5.0 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	190	17.	1
Dimethyl phthalate	ND		ug/kg	190	39.	1
Benzo(a)anthracene	650		ug/kg	110	21.	1
Benzo(a)pyrene	700		ug/kg	150	46.	1
Benzo(b)fluoranthene	900		ug/kg	110	31.	1
Benzo(k)fluoranthene	280		ug/kg	110	30.	1
Chrysene	670		ug/kg	110	19.	1
Acenaphthylene	35	J	ug/kg	150	29.	1
Anthracene	190		ug/kg	110	36.	1
Benzo(ghi)perylene	400		ug/kg	150	22.	1
Fluorene	55	J	ug/kg	190	18.	1
Phenanthrene	690		ug/kg	110	23.	1
Dibenzo(a,h)anthracene	100	J	ug/kg	110	22.	1
Indeno(1,2,3-cd)pyrene	430		ug/kg	150	26.	1
Pyrene	1100		ug/kg	110	18.	1
Biphenyl	ND		ug/kg	430	43.	1
4-Chloroaniline	ND		ug/kg	190	34.	1
2-Nitroaniline	ND		ug/kg	190	36.	1
3-Nitroaniline	ND		ug/kg	190	35.	1
4-Nitroaniline	ND		ug/kg	190	77.	1
Dibenzofuran	44	J	ug/kg	190	18.	1
2-Methylnaphthalene	30	J	ug/kg	220	22.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	190	20.	1
Acetophenone	ND		ug/kg	190	23.	1
2,4,6-Trichlorophenol	ND		ug/kg	110	35.	1
p-Chloro-m-cresol	ND		ug/kg	190	28.	1
2-Chlorophenol	ND		ug/kg	190	22.	1
2,4-Dichlorophenol	ND		ug/kg	170	30.	1
2,4-Dimethylphenol	ND		ug/kg	190	62.	1
2-Nitrophenol	ND		ug/kg	400	70.	1
4-Nitrophenol	ND		ug/kg	260	76.	1
2,4-Dinitrophenol	ND		ug/kg	900	87.	1
4,6-Dinitro-o-cresol	ND		ug/kg	490	90.	1
Pentachlorophenol	ND		ug/kg	150	41.	1
Phenol	ND		ug/kg	190	28.	1
2-Methylphenol	ND		ug/kg	190	29.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	270	29.	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-07 Date Collected: 07/18/19 15:00

Client ID: SB07_4.5-5.0 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	190	36.	1
Benzoic Acid	ND		ug/kg	600	190	1
Benzyl Alcohol	ND		ug/kg	190	57.	1
Carbazole	77	J	ug/kg	190	18.	1
1,4-Dioxane	ND		ug/kg	28	8.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	76		25-120
Phenol-d6	77		10-120
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	87		30-120
2,4,6-Tribromophenol	102		10-136
4-Terphenyl-d14	58		18-120

Project Name: 450 JOHNSON AVE.
Project Number: 170588001
Lab Number: L1931803
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-08
Client ID: SB14_4.5-5.0
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 14:05
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/21/19 20:39
Analyst: RC
Percent Solids: 90%

Extraction Method: EPA 3546
Extraction Date: 07/19/19 03:02

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	36	J	ug/kg	140	19.	1
1,2,4-Trichlorobenzene	ND		ug/kg	180	21.	1
Hexachlorobenzene	ND		ug/kg	110	20.	1
Bis(2-chloroethyl)ether	ND		ug/kg	160	25.	1
2-Chloronaphthalene	ND		ug/kg	180	18.	1
1,2-Dichlorobenzene	ND		ug/kg	180	33.	1
1,3-Dichlorobenzene	ND		ug/kg	180	31.	1
1,4-Dichlorobenzene	ND		ug/kg	180	32.	1
3,3'-Dichlorobenzidine	ND		ug/kg	180	48.	1
2,4-Dinitrotoluene	ND		ug/kg	180	36.	1
2,6-Dinitrotoluene	ND		ug/kg	180	31.	1
Fluoranthene	510		ug/kg	110	21.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	180	20.	1
4-Bromophenyl phenyl ether	ND		ug/kg	180	28.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	220	31.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	200	18.	1
Hexachlorobutadiene	ND		ug/kg	180	27.	1
Hexachlorocyclopentadiene	ND		ug/kg	520	160	1
Hexachloroethane	ND		ug/kg	140	29.	1
Isophorone	ND		ug/kg	160	24.	1
Naphthalene	27	J	ug/kg	180	22.	1
Nitrobenzene	ND		ug/kg	160	27.	1
NDPA/DPA	ND		ug/kg	140	21.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	180	28.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	180	63.	1
Butyl benzyl phthalate	ND		ug/kg	180	46.	1
Di-n-butylphthalate	ND		ug/kg	180	34.	1
Di-n-octylphthalate	ND		ug/kg	180	62.	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-08 Date Collected: 07/18/19 14:05

Client ID: SB14_4.5-5.0 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	180	17.	1
Dimethyl phthalate	ND		ug/kg	180	38.	1
Benzo(a)anthracene	210		ug/kg	110	20.	1
Benzo(a)pyrene	230		ug/kg	140	44.	1
Benzo(b)fluoranthene	250		ug/kg	110	31.	1
Benzo(k)fluoranthene	91	J	ug/kg	110	29.	1
Chrysene	200		ug/kg	110	19.	1
Acenaphthylene	ND		ug/kg	140	28.	1
Anthracene	74	J	ug/kg	110	36.	1
Benzo(ghi)perylene	100	J	ug/kg	140	21.	1
Fluorene	34	J	ug/kg	180	18.	1
Phenanthrene	400		ug/kg	110	22.	1
Dibenzo(a,h)anthracene	34	J	ug/kg	110	21.	1
Indeno(1,2,3-cd)pyrene	130	J	ug/kg	140	25.	1
Pyrene	420		ug/kg	110	18.	1
Biphenyl	ND		ug/kg	420	42.	1
4-Chloroaniline	ND		ug/kg	180	33.	1
2-Nitroaniline	ND		ug/kg	180	35.	1
3-Nitroaniline	ND		ug/kg	180	34.	1
4-Nitroaniline	ND		ug/kg	180	75.	1
Dibenzofuran	30	J	ug/kg	180	17.	1
2-Methylnaphthalene	ND		ug/kg	220	22.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	180	19.	1
Acetophenone	ND		ug/kg	180	22.	1
2,4,6-Trichlorophenol	ND		ug/kg	110	34.	1
p-Chloro-m-cresol	ND		ug/kg	180	27.	1
2-Chlorophenol	ND		ug/kg	180	22.	1
2,4-Dichlorophenol	ND		ug/kg	160	29.	1
2,4-Dimethylphenol	ND		ug/kg	180	60.	1
2-Nitrophenol	ND		ug/kg	390	68.	1
4-Nitrophenol	ND		ug/kg	260	74.	1
2,4-Dinitrophenol	ND		ug/kg	870	85.	1
4,6-Dinitro-o-cresol	ND		ug/kg	470	87.	1
Pentachlorophenol	ND		ug/kg	140	40.	1
Phenol	ND		ug/kg	180	28.	1
2-Methylphenol	ND		ug/kg	180	28.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	260	28.	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-08 Date Collected: 07/18/19 14:05

Client ID: SB14_4.5-5.0 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	180	35.	1
Benzoic Acid	ND		ug/kg	590	180	1
Benzyl Alcohol	ND		ug/kg	180	56.	1
Carbazole	43	J	ug/kg	180	18.	1
1,4-Dioxane	ND		ug/kg	27	8.4	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	69		25-120
Phenol-d6	72		10-120
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	74		30-120
2,4,6-Tribromophenol	85		10-136
4-Terphenyl-d14	64		18-120

Project Name: 450 JOHNSON AVE.
Lab Number: L1931803
Project Number: 170588001
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-09
Client ID: TMW02_071819 (UF SVOC)
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 09:17
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 07/20/19 02:55
Analyst: ALS

Extraction Method: EPA 3510C
Extraction Date: 07/19/19 04:18

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.50	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.45	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.40	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.43	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	2.2	J	ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-09 Date Collected: 07/18/19 09:17

Client ID: TMW02_071819 (UF SVOC) Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Dibenzofuran	ND		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
2-Methylphenol	ND		ug/l	5.0	0.49	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Benzoic Acid	ND		ug/l	50	2.6	1
Benzyl Alcohol	ND		ug/l	2.0	0.59	1
Carbazole	ND		ug/l	2.0	0.49	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	58		21-120
Phenol-d6	13		10-120
Nitrobenzene-d5	66		23-120
2-Fluorobiphenyl	74		15-120
2,4,6-Tribromophenol	65		10-120
4-Terphenyl-d14	86		41-149

Project Name: 450 JOHNSON AVE.
Lab Number: L1931803
Project Number: 170588001
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-09
Client ID: TMW02_071819 (UF SVOC)
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 09:17
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 07/19/19 16:20
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 07/19/19 04:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	0.10		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	0.06	J	ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	0.35		ug/l	0.10	0.05	1
Benzo(a)anthracene	0.04	J	ug/l	0.10	0.02	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01	1
Chrysene	0.03	J	ug/l	0.10	0.01	1
Acenaphthylene	ND		ug/l	0.10	0.01	1
Anthracene	0.03	J	ug/l	0.10	0.01	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.01	1
Fluorene	0.10	J	ug/l	0.10	0.01	1
Phenanthrene	0.13		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01	1
Pyrene	0.05	J	ug/l	0.10	0.02	1
2-Methylnaphthalene	0.17		ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-09 Date Collected: 07/18/19 09:17

Client ID: TMW02_071819 (UF SVOC) Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor

Semivolatile Organics by GC/MS-SIM - Westborough Lab

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	59		21-120
Phenol-d6	19		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	75		15-120
2,4,6-Tribromophenol	95		10-120
4-Terphenyl-d14	85		41-149

Project Name: 450 JOHNSON AVE.
Lab Number: L1931803
Project Number: 170588001
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-10
Client ID: TMW08_071819 (UF SVOC)
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 11:25
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 07/20/19 03:21
Analyst: ALS

Extraction Method: EPA 3510C
Extraction Date: 07/19/19 04:18

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.50	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.45	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.40	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.43	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	0.55	J	ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-10 Date Collected: 07/18/19 11:25

Client ID: TMW08_071819 (UF SVOC) Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Dibenzofuran	ND		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
2-Methylphenol	ND		ug/l	5.0	0.49	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Benzoic Acid	16.	J	ug/l	50	2.6	1
Benzyl Alcohol	ND		ug/l	2.0	0.59	1
Carbazole	ND		ug/l	2.0	0.49	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	80		21-120
Phenol-d6	65		10-120
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	90		15-120
2,4,6-Tribromophenol	90		10-120
4-Terphenyl-d14	98		41-149

Project Name: 450 JOHNSON AVE.
Lab Number: L1931803
Project Number: 170588001
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-10
Client ID: TMW08_071819 (UF SVOC)
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 11:25
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 07/19/19 16:37
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 07/19/19 04:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	0.65		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	0.34		ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	1.1		ug/l	0.10	0.05	1
Benzo(a)anthracene	0.13		ug/l	0.10	0.02	1
Benzo(a)pyrene	0.11		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	0.14		ug/l	0.10	0.01	1
Benzo(k)fluoranthene	0.05	J	ug/l	0.10	0.01	1
Chrysene	0.11		ug/l	0.10	0.01	1
Acenaphthylene	0.04	J	ug/l	0.10	0.01	1
Anthracene	0.16		ug/l	0.10	0.01	1
Benzo(ghi)perylene	0.10	J	ug/l	0.10	0.01	1
Fluorene	0.41		ug/l	0.10	0.01	1
Phenanthrene	1.2		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	0.10	J	ug/l	0.10	0.01	1
Pyrene	0.29		ug/l	0.10	0.02	1
2-Methylnaphthalene	0.58		ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-10 Date Collected: 07/18/19 11:25

Client ID: TMW08_071819 (UF SVOC) Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	69		21-120
Phenol-d6	60		10-120
Nitrobenzene-d5	86		23-120
2-Fluorobiphenyl	80		15-120
2,4,6-Tribromophenol	102		10-120
4-Terphenyl-d14	88		41-149

Project Name: 450 JOHNSON AVE.
Lab Number: L1931803
Project Number: 170588001
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-11
Client ID: DUP02_071819 (UF SVOC)
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 00:00
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 07/20/19 08:29
Analyst: ALS

Extraction Method: EPA 3510C
Extraction Date: 07/19/19 04:18

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.50	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.45	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.40	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.43	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-11 Date Collected: 07/18/19 00:00

Client ID: DUP02_071819 (UF SVOC) Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Dibenzofuran	1.5	J	ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
2-Methylphenol	ND		ug/l	5.0	0.49	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Benzoic Acid	ND		ug/l	50	2.6	1
Benzyl Alcohol	ND		ug/l	2.0	0.59	1
Carbazole	1.2	J	ug/l	2.0	0.49	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	74		21-120
Phenol-d6	64		10-120
Nitrobenzene-d5	87		23-120
2-Fluorobiphenyl	90		15-120
2,4,6-Tribromophenol	82		10-120
4-Terphenyl-d14	91		41-149

Project Name: 450 JOHNSON AVE.
Lab Number: L1931803
Project Number: 170588001
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-11
Client ID: DUP02_071819 (UF SVOC)
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 00:00
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 07/19/19 16:53
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 07/19/19 04:22

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	2.5		ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	12		ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	4.3		ug/l	0.10	0.05	1
Benzo(a)anthracene	6.0		ug/l	0.10	0.02	1
Benzo(a)pyrene	5.9		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	7.2		ug/l	0.10	0.01	1
Benzo(k)fluoranthene	2.8		ug/l	0.10	0.01	1
Chrysene	5.3		ug/l	0.10	0.01	1
Acenaphthylene	0.69		ug/l	0.10	0.01	1
Anthracene	1.9		ug/l	0.10	0.01	1
Benzo(ghi)perylene	4.0		ug/l	0.10	0.01	1
Fluorene	2.2		ug/l	0.10	0.01	1
Phenanthrene	9.2		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	1.0		ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	4.1		ug/l	0.10	0.01	1
Pyrene	10		ug/l	0.10	0.02	1
2-Methylnaphthalene	1.9		ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-11 Date Collected: 07/18/19 00:00

Client ID: DUP02_071819 (UF SVOC) Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	72		21-120
Phenol-d6	61		10-120
Nitrobenzene-d5	92		23-120
2-Fluorobiphenyl	85		15-120
2,4,6-Tribromophenol	103		10-120
4-Terphenyl-d14	88		41-149

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/18/19 16:42
Analyst: JG

Extraction Method: EPA 3546
Extraction Date: 07/18/19 10:16

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 04-06,08 Batch: WG1261483-1					
Acenaphthene	ND		ug/kg	130	17.
1,2,4-Trichlorobenzene	ND		ug/kg	160	19.
Hexachlorobenzene	ND		ug/kg	99	18.
Bis(2-chloroethyl)ether	ND		ug/kg	150	22.
2-Chloronaphthalene	ND		ug/kg	160	16.
1,2-Dichlorobenzene	ND		ug/kg	160	30.
1,3-Dichlorobenzene	ND		ug/kg	160	28.
1,4-Dichlorobenzene	ND		ug/kg	160	29.
3,3'-Dichlorobenzidine	ND		ug/kg	160	44.
2,4-Dinitrotoluene	ND		ug/kg	160	33.
2,6-Dinitrotoluene	ND		ug/kg	160	28.
Fluoranthene	ND		ug/kg	99	19.
4-Chlorophenyl phenyl ether	ND		ug/kg	160	18.
4-Bromophenyl phenyl ether	ND		ug/kg	160	25.
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	28.
Bis(2-chloroethoxy)methane	ND		ug/kg	180	16.
Hexachlorobutadiene	ND		ug/kg	160	24.
Hexachlorocyclopentadiene	ND		ug/kg	470	150
Hexachloroethane	ND		ug/kg	130	27.
Isophorone	ND		ug/kg	150	21.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	150	24.
NDPA/DPA	ND		ug/kg	130	19.
n-Nitrosodi-n-propylamine	ND		ug/kg	160	26.
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	57.
Butyl benzyl phthalate	ND		ug/kg	160	42.
Di-n-butylphthalate	ND		ug/kg	160	31.
Di-n-octylphthalate	ND		ug/kg	160	56.
Diethyl phthalate	ND		ug/kg	160	15.

Project Name: 450 JOHNSON AVE.
Project Number: 170588001
Lab Number: L1931803
Report Date: 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/18/19 16:42
Analyst: JG

Extraction Method: EPA 3546
Extraction Date: 07/18/19 10:16

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 04-06,08 Batch: WG1261483-1					
Dimethyl phthalate	ND		ug/kg	160	35.
Benzo(a)anthracene	ND		ug/kg	99	19.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	99	28.
Benzo(k)fluoranthene	ND		ug/kg	99	26.
Chrysene	ND		ug/kg	99	17.
Acenaphthylene	ND		ug/kg	130	26.
Anthracene	ND		ug/kg	99	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	99	20.
Dibenzo(a,h)anthracene	ND		ug/kg	99	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	99	16.
Biphenyl	ND		ug/kg	380	38.
4-Chloroaniline	ND		ug/kg	160	30.
2-Nitroaniline	ND		ug/kg	160	32.
3-Nitroaniline	ND		ug/kg	160	31.
4-Nitroaniline	ND		ug/kg	160	68.
Dibenzofuran	ND		ug/kg	160	16.
2-Methylnaphthalene	ND		ug/kg	200	20.
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	160	17.
Acetophenone	ND		ug/kg	160	20.
2,4,6-Trichlorophenol	ND		ug/kg	99	31.
p-Chloro-m-cresol	ND		ug/kg	160	25.
2-Chlorophenol	ND		ug/kg	160	20.
2,4-Dichlorophenol	ND		ug/kg	150	26.
2,4-Dimethylphenol	ND		ug/kg	160	54.
2-Nitrophenol	ND		ug/kg	360	62.

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/18/19 16:42
Analyst: JG

Extraction Method: EPA 3546
Extraction Date: 07/18/19 10:16

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 04-06,08 Batch: WG1261483-1					
4-Nitrophenol	ND		ug/kg	230	67.
2,4-Dinitrophenol	ND		ug/kg	790	77.
4,6-Dinitro-o-cresol	ND		ug/kg	430	79.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	26.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.
2,4,5-Trichlorophenol	ND		ug/kg	160	32.
Benzoic Acid	ND		ug/kg	540	170
Benzyl Alcohol	ND		ug/kg	160	50.
Carbazole	ND		ug/kg	160	16.
1,4-Dioxane	ND		ug/kg	25	7.6

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	74		25-120
Phenol-d6	74		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	77		30-120
2,4,6-Tribromophenol	87		10-136
4-Terphenyl-d14	84		18-120

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/19/19 05:53
Analyst: JG

Extraction Method: EPA 3510C
Extraction Date: 07/18/19 15:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 09-11 Batch: WG1261662-1					
Acenaphthene	ND		ug/l	2.0	0.44
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.50
Hexachlorobenzene	ND		ug/l	2.0	0.46
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50
2-Chloronaphthalene	ND		ug/l	2.0	0.44
1,2-Dichlorobenzene	ND		ug/l	2.0	0.45
1,3-Dichlorobenzene	ND		ug/l	2.0	0.40
1,4-Dichlorobenzene	ND		ug/l	2.0	0.43
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93
Fluoranthene	ND		ug/l	2.0	0.26
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50
Hexachlorobutadiene	ND		ug/l	2.0	0.66
Hexachlorocyclopentadiene	ND		ug/l	20	0.69
Hexachloroethane	ND		ug/l	2.0	0.58
Isophorone	ND		ug/l	5.0	1.2
Naphthalene	ND		ug/l	2.0	0.46
Nitrobenzene	ND		ug/l	2.0	0.77
NDPA/DPA	ND		ug/l	2.0	0.42
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5
Butyl benzyl phthalate	ND		ug/l	5.0	1.2
Di-n-butylphthalate	ND		ug/l	5.0	0.39
Di-n-octylphthalate	ND		ug/l	5.0	1.3
Diethyl phthalate	ND		ug/l	5.0	0.38

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/19/19 05:53
Analyst: JG

Extraction Method: EPA 3510C
Extraction Date: 07/18/19 15:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 09-11 Batch: WG1261662-1					
Dimethyl phthalate	ND		ug/l	5.0	1.8
Benzo(a)anthracene	ND		ug/l	2.0	0.32
Benzo(a)pyrene	ND		ug/l	2.0	0.41
Benzo(b)fluoranthene	ND		ug/l	2.0	0.35
Benzo(k)fluoranthene	ND		ug/l	2.0	0.37
Chrysene	ND		ug/l	2.0	0.34
Acenaphthylene	ND		ug/l	2.0	0.46
Anthracene	ND		ug/l	2.0	0.33
Benzo(ghi)perylene	ND		ug/l	2.0	0.30
Fluorene	ND		ug/l	2.0	0.41
Phenanthrene	ND		ug/l	2.0	0.33
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.32
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.40
Pyrene	ND		ug/l	2.0	0.28
Biphenyl	ND		ug/l	2.0	0.46
4-Chloroaniline	ND		ug/l	5.0	1.1
2-Nitroaniline	ND		ug/l	5.0	0.50
3-Nitroaniline	ND		ug/l	5.0	0.81
4-Nitroaniline	ND		ug/l	5.0	0.80
Dibenzofuran	ND		ug/l	2.0	0.50
2-Methylnaphthalene	ND		ug/l	2.0	0.45
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44
Acetophenone	ND		ug/l	5.0	0.53
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61
p-Chloro-m-cresol	ND		ug/l	2.0	0.35
2-Chlorophenol	ND		ug/l	2.0	0.48
2,4-Dichlorophenol	ND		ug/l	5.0	0.41
2,4-Dimethylphenol	ND		ug/l	5.0	1.8
2-Nitrophenol	ND		ug/l	10	0.85

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/19/19 05:53
Analyst: JG

Extraction Method: EPA 3510C
Extraction Date: 07/18/19 15:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 09-11 Batch: WG1261662-1					
4-Nitrophenol	ND		ug/l	10	0.67
2,4-Dinitrophenol	ND		ug/l	20	6.6
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8
Pentachlorophenol	ND		ug/l	10	1.8
Phenol	ND		ug/l	5.0	0.57
2-Methylphenol	ND		ug/l	5.0	0.49
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77
Benzoic Acid	ND		ug/l	50	2.6
Benzyl Alcohol	ND		ug/l	2.0	0.59
Carbazole	ND		ug/l	2.0	0.49

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	63		21-120
Phenol-d6	52		10-120
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	71		15-120
2,4,6-Tribromophenol	59		10-120
4-Terphenyl-d14	100		41-149

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 07/19/19 10:14
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 07/18/19 15:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 09-11 Batch: WG1261673-1					
Acenaphthene	ND		ug/l	0.10	0.01
2-Chloronaphthalene	ND		ug/l	0.20	0.02
Fluoranthene	ND		ug/l	0.10	0.02
Hexachlorobutadiene	ND		ug/l	0.50	0.05
Naphthalene	ND		ug/l	0.10	0.05
Benzo(a)anthracene	ND		ug/l	0.10	0.02
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01
Chrysene	ND		ug/l	0.10	0.01
Acenaphthylene	ND		ug/l	0.10	0.01
Anthracene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.10	0.02
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
2-Methylnaphthalene	ND		ug/l	0.10	0.02
Pentachlorophenol	ND		ug/l	0.80	0.01
Hexachlorobenzene	ND		ug/l	0.80	0.01
Hexachloroethane	ND		ug/l	0.80	0.06

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 07/19/19 10:14
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 07/18/19 15:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 09-11 Batch: WG1261673-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	59		21-120
Phenol-d6	49		10-120
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	70		15-120
2,4,6-Tribromophenol	81		10-120
4-Terphenyl-d14	90		41-149

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/22/19 09:32
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 07/21/19 01:57

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 07 Batch: WG1262549-1					
Acenaphthene	ND		ug/kg	130	17.
1,2,4-Trichlorobenzene	ND		ug/kg	160	19.
Hexachlorobenzene	ND		ug/kg	98	18.
Bis(2-chloroethyl)ether	ND		ug/kg	150	22.
2-Chloronaphthalene	ND		ug/kg	160	16.
1,2-Dichlorobenzene	ND		ug/kg	160	29.
1,3-Dichlorobenzene	ND		ug/kg	160	28.
1,4-Dichlorobenzene	ND		ug/kg	160	29.
3,3'-Dichlorobenzidine	ND		ug/kg	160	44.
2,4-Dinitrotoluene	ND		ug/kg	160	33.
2,6-Dinitrotoluene	ND		ug/kg	160	28.
Fluoranthene	ND		ug/kg	98	19.
4-Chlorophenyl phenyl ether	ND		ug/kg	160	18.
4-Bromophenyl phenyl ether	ND		ug/kg	160	25.
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	28.
Bis(2-chloroethoxy)methane	ND		ug/kg	180	16.
Hexachlorobutadiene	ND		ug/kg	160	24.
Hexachlorocyclopentadiene	ND		ug/kg	470	150
Hexachloroethane	ND		ug/kg	130	26.
Isophorone	ND		ug/kg	150	21.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	150	24.
NDPA/DPA	ND		ug/kg	130	19.
n-Nitrosodi-n-propylamine	ND		ug/kg	160	25.
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	57.
Butyl benzyl phthalate	ND		ug/kg	160	41.
Di-n-butylphthalate	ND		ug/kg	160	31.
Di-n-octylphthalate	ND		ug/kg	160	56.
Diethyl phthalate	ND		ug/kg	160	15.

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/22/19 09:32
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 07/21/19 01:57

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 07 Batch: WG1262549-1					
Dimethyl phthalate	ND		ug/kg	160	34.
Benzo(a)anthracene	ND		ug/kg	98	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	98	28.
Benzo(k)fluoranthene	ND		ug/kg	98	26.
Chrysene	ND		ug/kg	98	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	98	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	98	20.
Dibenzo(a,h)anthracene	ND		ug/kg	98	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	98	16.
Biphenyl	ND		ug/kg	370	38.
4-Chloroaniline	ND		ug/kg	160	30.
2-Nitroaniline	ND		ug/kg	160	32.
3-Nitroaniline	ND		ug/kg	160	31.
4-Nitroaniline	ND		ug/kg	160	68.
Dibenzofuran	ND		ug/kg	160	16.
2-Methylnaphthalene	ND		ug/kg	200	20.
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	160	17.
Acetophenone	ND		ug/kg	160	20.
2,4,6-Trichlorophenol	ND		ug/kg	98	31.
p-Chloro-m-cresol	ND		ug/kg	160	24.
2-Chlorophenol	ND		ug/kg	160	19.
2,4-Dichlorophenol	ND		ug/kg	150	26.
2,4-Dimethylphenol	ND		ug/kg	160	54.
2-Nitrophenol	ND		ug/kg	350	62.

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/22/19 09:32
Analyst: IM

Extraction Method: EPA 3546
Extraction Date: 07/21/19 01:57

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 07 Batch: WG1262549-1					
4-Nitrophenol	ND		ug/kg	230	67.
2,4-Dinitrophenol	ND		ug/kg	790	76.
4,6-Dinitro-o-cresol	ND		ug/kg	430	79.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	25.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.
2,4,5-Trichlorophenol	ND		ug/kg	160	31.
Benzoic Acid	ND		ug/kg	530	160
Benzyl Alcohol	ND		ug/kg	160	50.
Carbazole	ND		ug/kg	160	16.
1,4-Dioxane	ND		ug/kg	24	7.5

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	75		25-120
Phenol-d6	76		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	80		30-120
2,4,6-Tribromophenol	92		10-136
4-Terphenyl-d14	84		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 04-06,08 Batch: WG1261483-2 WG1261483-3								
Acenaphthene	72		77		31-137	7		50
1,2,4-Trichlorobenzene	70		74		38-107	6		50
Hexachlorobenzene	80		84		40-140	5		50
Bis(2-chloroethyl)ether	67		72		40-140	7		50
2-Chloronaphthalene	76		80		40-140	5		50
1,2-Dichlorobenzene	66		70		40-140	6		50
1,3-Dichlorobenzene	64		69		40-140	8		50
1,4-Dichlorobenzene	65		70		28-104	7		50
3,3'-Dichlorobenzidine	61		62		40-140	2		50
2,4-Dinitrotoluene	81		87		40-132	7		50
2,6-Dinitrotoluene	84		90		40-140	7		50
Fluoranthene	78		85		40-140	9		50
4-Chlorophenyl phenyl ether	76		80		40-140	5		50
4-Bromophenyl phenyl ether	79		84		40-140	6		50
Bis(2-chloroisopropyl)ether	63		66		40-140	5		50
Bis(2-chloroethoxy)methane	74		78		40-117	5		50
Hexachlorobutadiene	70		74		40-140	6		50
Hexachlorocyclopentadiene	75		80		40-140	6		50
Hexachloroethane	64		68		40-140	6		50
Isophorone	76		82		40-140	8		50
Naphthalene	69		73		40-140	6		50
Nitrobenzene	73		78		40-140	7		50
NDPA/DPA	79		84		36-157	6		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 04-06,08 Batch: WG1261483-2 WG1261483-3								
n-Nitrosodi-n-propylamine	76		81		32-121	6		50
Bis(2-ethylhexyl)phthalate	74		78		40-140	5		50
Butyl benzyl phthalate	77		82		40-140	6		50
Di-n-butylphthalate	81		86		40-140	6		50
Di-n-octylphthalate	82		86		40-140	5		50
Diethyl phthalate	78		83		40-140	6		50
Dimethyl phthalate	82		88		40-140	7		50
Benzo(a)anthracene	76		82		40-140	8		50
Benzo(a)pyrene	86		92		40-140	7		50
Benzo(b)fluoranthene	78		83		40-140	6		50
Benzo(k)fluoranthene	78		84		40-140	7		50
Chrysene	70		76		40-140	8		50
Acenaphthylene	81		86		40-140	6		50
Anthracene	78		83		40-140	6		50
Benzo(ghi)perylene	77		82		40-140	6		50
Fluorene	76		80		40-140	5		50
Phenanthrene	72		78		40-140	8		50
Dibenzo(a,h)anthracene	77		82		40-140	6		50
Indeno(1,2,3-cd)pyrene	82		86		40-140	5		50
Pyrene	76		82		35-142	8		50
Biphenyl	82		87		54-104	6		50
4-Chloroaniline	62		65		40-140	5		50
2-Nitroaniline	85		92		47-134	8		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 04-06,08 Batch: WG1261483-2 WG1261483-3								
3-Nitroaniline	72		74		26-129	3		50
4-Nitroaniline	79		83		41-125	5		50
Dibenzofuran	74		77		40-140	4		50
2-Methylnaphthalene	74		79		40-140	7		50
1,2,4,5-Tetrachlorobenzene	79		83		40-117	5		50
Acetophenone	81		86		14-144	6		50
2,4,6-Trichlorophenol	88		94		30-130	7		50
p-Chloro-m-cresol	83		89		26-103	7		50
2-Chlorophenol	74		79		25-102	7		50
2,4-Dichlorophenol	83		88		30-130	6		50
2,4-Dimethylphenol	82		86		30-130	5		50
2-Nitrophenol	84		90		30-130	7		50
4-Nitrophenol	78		83		11-114	6		50
2,4-Dinitrophenol	92		91		4-130	1		50
4,6-Dinitro-o-cresol	87		94		10-130	8		50
Pentachlorophenol	84		89		17-109	6		50
Phenol	68		72		26-90	6		50
2-Methylphenol	76		80		30-130.	5		50
3-Methylphenol/4-Methylphenol	77		81		30-130	5		50
2,4,5-Trichlorophenol	87		93		30-130	7		50
Benzoic Acid	87		72		10-110	19		50
Benzyl Alcohol	76		80		40-140	5		50
Carbazole	75		80		54-128	6		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 04-06,08 Batch: WG1261483-2 WG1261483-3								
1,4-Dioxane	60		66		40-140	10		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	70		75		25-120
Phenol-d6	72		78		10-120
Nitrobenzene-d5	75		81		23-120
2-Fluorobiphenyl	74		80		30-120
2,4,6-Tribromophenol	82		89		10-136
4-Terphenyl-d14	73		79		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 09-11 Batch: WG1261662-2 WG1261662-3								
Acenaphthene	69		81		37-111	16		30
1,2,4-Trichlorobenzene	73		81		39-98	10		30
Hexachlorobenzene	85		98		40-140	14		30
Bis(2-chloroethyl)ether	68		79		40-140	15		30
2-Chloronaphthalene	79		89		40-140	12		30
1,2-Dichlorobenzene	68		79		40-140	15		30
1,3-Dichlorobenzene	66		77		40-140	15		30
1,4-Dichlorobenzene	69		79		36-97	14		30
3,3'-Dichlorobenzidine	75		89		40-140	17		30
2,4-Dinitrotoluene	74		85		48-143	14		30
2,6-Dinitrotoluene	84		93		40-140	10		30
Fluoranthene	93		95		40-140	2		30
4-Chlorophenyl phenyl ether	75		90		40-140	18		30
4-Bromophenyl phenyl ether	89		98		40-140	10		30
Bis(2-chloroisopropyl)ether	85		110		40-140	26		30
Bis(2-chloroethoxy)methane	76		100		40-140	27		30
Hexachlorobutadiene	78		90		40-140	14		30
Hexachlorocyclopentadiene	80		94		40-140	16		30
Hexachloroethane	69		83		40-140	18		30
Isophorone	80		94		40-140	16		30
Naphthalene	71		85		40-140	18		30
Nitrobenzene	80		93		40-140	15		30
NDPA/DPA	78		90		40-140	14		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 09-11 Batch: WG1261662-2 WG1261662-3								
n-Nitrosodi-n-propylamine	85		101		29-132	17		30
Bis(2-ethylhexyl)phthalate	95		98		40-140	3		30
Butyl benzyl phthalate	98		106		40-140	8		30
Di-n-butylphthalate	88		98		40-140	11		30
Di-n-octylphthalate	101		108		40-140	7		30
Diethyl phthalate	86		97		40-140	12		30
Dimethyl phthalate	92		98		40-140	6		30
Benzo(a)anthracene	90		95		40-140	5		30
Benzo(a)pyrene	93		105		40-140	12		30
Benzo(b)fluoranthene	101		107		40-140	6		30
Benzo(k)fluoranthene	85		99		40-140	15		30
Chrysene	84		93		40-140	10		30
Acenaphthylene	82		93		45-123	13		30
Anthracene	85		96		40-140	12		30
Benzo(ghi)perylene	93		96		40-140	3		30
Fluorene	73		87		40-140	18		30
Phenanthrene	81		92		40-140	13		30
Dibenzo(a,h)anthracene	87		96		40-140	10		30
Indeno(1,2,3-cd)pyrene	84		92		40-140	9		30
Pyrene	91		92		26-127	1		30
Biphenyl	71		81		40-140	13		30
4-Chloroaniline	74		94		40-140	24		30
2-Nitroaniline	83		91		52-143	9		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 09-11 Batch: WG1261662-2 WG1261662-3								
3-Nitroaniline	64		77		25-145	18		30
4-Nitroaniline	72		83		51-143	14		30
Dibenzofuran	71		83		40-140	16		30
2-Methylnaphthalene	71		82		40-140	14		30
1,2,4,5-Tetrachlorobenzene	74		83		2-134	11		30
Acetophenone	66		79		39-129	18		30
2,4,6-Trichlorophenol	79		93		30-130	16		30
p-Chloro-m-cresol	88		95		23-97	8		30
2-Chlorophenol	74		86		27-123	15		30
2,4-Dichlorophenol	75		90		30-130	18		30
2,4-Dimethylphenol	59		87		30-130	**38**	Q	30
2-Nitrophenol	80		94		30-130	16		30
4-Nitrophenol	78		**82**	Q	10-80	5		30
2,4-Dinitrophenol	74		78		20-130	5		30
4,6-Dinitro-o-cresol	89		100		20-164	12		30
Pentachlorophenol	80		91		9-103	13		30
Phenol	63		67		12-110	6		30
2-Methylphenol	70		88		30-130	23		30
3-Methylphenol/4-Methylphenol	73		82		30-130	12		30
2,4,5-Trichlorophenol	86		99		30-130	14		30
Benzoic Acid	**0**	Q	**0**	Q	10-164	NC		30
Benzyl Alcohol	78		87		26-116	11		30
Carbazole	87		96		55-144	10		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 09-11 Batch: WG1261662-2 WG1261662-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	65		77		21-120
Phenol-d6	64		70		10-120
Nitrobenzene-d5	84		96		23-120
2-Fluorobiphenyl	82		95		15-120
2,4,6-Tribromophenol	80		93		10-120
4-Terphenyl-d14	100		94		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 09-11 Batch: WG1261673-2 WG1261673-3								
Acenaphthene	92		92		40-140	0		40
2-Chloronaphthalene	86		84		40-140	2		40
Fluoranthene	**166**	Q	100		40-140	**50**	Q	40
Hexachlorobutadiene	70		67		40-140	4		40
Naphthalene	80		76		40-140	5		40
Benzo(a)anthracene	134		105		40-140	24		40
Benzo(a)pyrene	134		110		40-140	20		40
Benzo(b)fluoranthene	138		104		40-140	28		40
Benzo(k)fluoranthene	117		106		40-140	10		40
Chrysene	135		104		40-140	26		40
Acenaphthylene	92		87		40-140	6		40
Anthracene	100		103		40-140	3		40
Benzo(ghi)perylene	129		134		40-140	4		40
Fluorene	92		92		40-140	0		40
Phenanthrene	106		98		40-140	8		40
Dibenzo(a,h)anthracene	115		126		40-140	9		40
Indeno(1,2,3-cd)pyrene	133		126		40-140	5		40
Pyrene	**162**	Q	101		40-140	**46**	Q	40
2-Methylnaphthalene	84		82		40-140	2		40
Pentachlorophenol	108		119		40-140	10		40
Hexachlorobenzene	102		105		40-140	3		40
Hexachloroethane	72		68		40-140	6		40

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.

Project Number: 170588001

Lab Number: L1931803

Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 09-11 Batch: WG1261673-2 WG1261673-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	63		59		21-120
Phenol-d6	55		53		10-120
Nitrobenzene-d5	83		80		23-120
2-Fluorobiphenyl	84		82		15-120
2,4,6-Tribromophenol	98		99		10-120
4-Terphenyl-d14	106		105		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 07 Batch: WG1262549-2 WG1262549-3								
Acenaphthene	72		78		31-137	8		50
1,2,4-Trichlorobenzene	69		74		38-107	7		50
Hexachlorobenzene	80		88		40-140	10		50
Bis(2-chloroethyl)ether	67		71		40-140	6		50
2-Chloronaphthalene	74		81		40-140	9		50
1,2-Dichlorobenzene	65		69		40-140	6		50
1,3-Dichlorobenzene	64		67		40-140	5		50
1,4-Dichlorobenzene	64		68		28-104	6		50
3,3'-Dichlorobenzidine	69		70		40-140	1		50
2,4-Dinitrotoluene	79		88		40-132	11		50
2,6-Dinitrotoluene	82		91		40-140	10		50
Fluoranthene	78		84		40-140	7		50
4-Chlorophenyl phenyl ether	75		81		40-140	8		50
4-Bromophenyl phenyl ether	80		87		40-140	8		50
Bis(2-chloroisopropyl)ether	61		65		40-140	6		50
Bis(2-chloroethoxy)methane	72		78		40-117	8		50
Hexachlorobutadiene	69		75		40-140	8		50
Hexachlorocyclopentadiene	71		79		40-140	11		50
Hexachloroethane	64		67		40-140	5		50
Isophorone	76		81		40-140	6		50
Naphthalene	68		74		40-140	8		50
Nitrobenzene	72		77		40-140	7		50
NDPA/DPA	78		85		36-157	9		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 07 Batch: WG1262549-2 WG1262549-3								
n-Nitrosodi-n-propylamine	74		79		32-121	7		50
Bis(2-ethylhexyl)phthalate	73		78		40-140	7		50
Butyl benzyl phthalate	78		83		40-140	6		50
Di-n-butylphthalate	79		87		40-140	10		50
Di-n-octylphthalate	80		85		40-140	6		50
Diethyl phthalate	77		82		40-140	6		50
Dimethyl phthalate	84		91		40-140	8		50
Benzo(a)anthracene	76		81		40-140	6		50
Benzo(a)pyrene	87		91		40-140	4		50
Benzo(b)fluoranthene	78		82		40-140	5		50
Benzo(k)fluoranthene	78		83		40-140	6		50
Chrysene	69		75		40-140	8		50
Acenaphthylene	79		86		40-140	8		50
Anthracene	76		83		40-140	9		50
Benzo(ghi)perylene	73		79		40-140	8		50
Fluorene	74		80		40-140	8		50
Phenanthrene	72		78		40-140	8		50
Dibenzo(a,h)anthracene	75		82		40-140	9		50
Indeno(1,2,3-cd)pyrene	78		84		40-140	7		50
Pyrene	76		82		35-142	8		50
Biphenyl	82		89		54-104	8		50
4-Chloroaniline	66		71		40-140	7		50
2-Nitroaniline	85		93		47-134	9		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 07 Batch: WG1262549-2 WG1262549-3								
3-Nitroaniline	71		76		26-129	7		50
4-Nitroaniline	78		84		41-125	7		50
Dibenzofuran	72		78		40-140	8		50
2-Methylnaphthalene	73		80		40-140	9		50
1,2,4,5-Tetrachlorobenzene	77		84		40-117	9		50
Acetophenone	80		86		14-144	7		50
2,4,6-Trichlorophenol	88		95		30-130	8		50
p-Chloro-m-cresol	82		90		26-103	9		50
2-Chlorophenol	74		79		25-102	7		50
2,4-Dichlorophenol	81		89		30-130	9		50
2,4-Dimethylphenol	79		87		30-130	10		50
2-Nitrophenol	83		91		30-130	9		50
4-Nitrophenol	78		84		11-114	7		50
2,4-Dinitrophenol	91		96		4-130	5		50
4,6-Dinitro-o-cresol	90		97		10-130	7		50
Pentachlorophenol	82		88		17-109	7		50
Phenol	67		73		26-90	9		50
2-Methylphenol	75		81		30-130.	8		50
3-Methylphenol/4-Methylphenol	76		82		30-130	8		50
2,4,5-Trichlorophenol	87		95		30-130	9		50
Benzoic Acid	82		75		10-110	9		50
Benzyl Alcohol	73		80		40-140	9		50
Carbazole	75		81		54-128	8		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 07 Batch: WG1262549-2 WG1262549-3								
1,4-Dioxane	59		62		40-140	5		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	73		79		25-120
Phenol-d6	75		83		10-120
Nitrobenzene-d5	78		85		23-120
2-Fluorobiphenyl	78		85		30-120
2,4,6-Tribromophenol	90		98		10-136
4-Terphenyl-d14	81		87		18-120

PCBS

Project Name: 450 JOHNSON AVE.
Lab Number: L1931803
Project Number: 170588001
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-07
Client ID: SB07_4.5-5.0
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 15:00
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 07/23/19 10:56
Analyst: WR
Percent Solids: 88%

Extraction Method: EPA 3546
Extraction Date: 07/21/19 19:15
Cleanup Method: EPA 3665A
Cleanup Date: 07/22/19
Cleanup Method: EPA 3660B
Cleanup Date: 07/23/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	36.8	3.27	1	A
Aroclor 1221	ND		ug/kg	36.8	3.69	1	A
Aroclor 1232	ND		ug/kg	36.8	7.81	1	A
Aroclor 1242	ND		ug/kg	36.8	4.96	1	A
Aroclor 1248	ND		ug/kg	36.8	5.52	1	A
Aroclor 1254	ND		ug/kg	36.8	4.03	1	A
Aroclor 1260	ND		ug/kg	36.8	6.81	1	B
Aroclor 1262	ND		ug/kg	36.8	4.68	1	A
Aroclor 1268	ND		ug/kg	36.8	3.82	1	A
PCBs, Total	ND		ug/kg	36.8	3.27	1	B

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	65		30-150	A
Decachlorobiphenyl	73		30-150	A
2,4,5,6-Tetrachloro-m-xylene	64		30-150	B
Decachlorobiphenyl	82		30-150	B

Project Name: 450 JOHNSON AVE.
Lab Number: L1931803
Project Number: 170588001
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-08
Client ID: SB14_4.5-5.0
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 14:05
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 07/23/19 11:09
Analyst: WR
Percent Solids: 90%

Extraction Method: EPA 3546
Extraction Date: 07/21/19 19:15
Cleanup Method: EPA 3665A
Cleanup Date: 07/22/19
Cleanup Method: EPA 3660B
Cleanup Date: 07/23/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	35.5	3.15	1	A
Aroclor 1221	ND		ug/kg	35.5	3.55	1	A
Aroclor 1232	ND		ug/kg	35.5	7.52	1	A
Aroclor 1242	ND		ug/kg	35.5	4.78	1	A
Aroclor 1248	ND		ug/kg	35.5	5.32	1	A
Aroclor 1254	ND		ug/kg	35.5	3.88	1	A
Aroclor 1260	ND		ug/kg	35.5	6.56	1	A
Aroclor 1262	ND		ug/kg	35.5	4.50	1	A
Aroclor 1268	ND		ug/kg	35.5	3.67	1	A
PCBs, Total	ND		ug/kg	35.5	3.15	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		30-150	A
Decachlorobiphenyl	76		30-150	A
2,4,5,6-Tetrachloro-m-xylene	72		30-150	B
Decachlorobiphenyl	83		30-150	B

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 07/23/19 10:19
Analyst: WR

Extraction Method: EPA 3546
Extraction Date: 07/21/19 03:07
Cleanup Method: EPA 3665A
Cleanup Date: 07/22/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 07-08 Batch: WG1262555-1						
Aroclor 1016	ND		ug/kg	32.8	2.92	A
Aroclor 1221	ND		ug/kg	32.8	3.29	A
Aroclor 1232	ND		ug/kg	32.8	6.96	A
Aroclor 1242	ND		ug/kg	32.8	4.43	A
Aroclor 1248	ND		ug/kg	32.8	4.93	A
Aroclor 1254	ND		ug/kg	32.8	3.59	A
Aroclor 1260	ND		ug/kg	32.8	6.07	A
Aroclor 1262	ND		ug/kg	32.8	4.17	A
Aroclor 1268	ND		ug/kg	32.8	3.40	A
PCBs, Total	ND		ug/kg	32.8	2.92	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	72		30-150	A
Decachlorobiphenyl	77		30-150	A
2,4,5,6-Tetrachloro-m-xylene	73		30-150	B
Decachlorobiphenyl	86		30-150	B

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.

Project Number: 170588001

Lab Number: L1931803

Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 07-08 Batch: WG1262555-2 WG1262555-3									
Aroclor 1016	79		79		40-140	0		50	A
Aroclor 1260	72		71		40-140	1		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	77		76		30-150	A
Decachlorobiphenyl	80		78		30-150	A
2,4,5,6-Tetrachloro-m-xylene	78		76		30-150	B
Decachlorobiphenyl	90		85		30-150	B

METALS

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-01 Date Collected: 07/18/19 09:17

Client ID: TMW02_071819 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Refer to COC

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Aluminum, Dissolved	0.00499	J	mg/l	0.0100	0.00327	1	07/19/19 16:31	07/22/19 12:59	EPA 3005A	1,6020B	AM
Antimony, Dissolved	0.00078	J	mg/l	0.00400	0.00042	1	07/19/19 16:31	07/22/19 12:59	EPA 3005A	1,6020B	AM
Arsenic, Dissolved	0.00024	J	mg/l	0.00050	0.00016	1	07/19/19 16:31	07/22/19 12:59	EPA 3005A	1,6020B	AM
Barium, Dissolved	0.07312		mg/l	0.00050	0.00017	1	07/19/19 16:31	07/22/19 12:59	EPA 3005A	1,6020B	AM
Beryllium, Dissolved	ND		mg/l	0.00050	0.00010	1	07/19/19 16:31	07/22/19 12:59	EPA 3005A	1,6020B	AM
Cadmium, Dissolved	ND		mg/l	0.00020	0.00005	1	07/19/19 16:31	07/22/19 12:59	EPA 3005A	1,6020B	AM
Calcium, Dissolved	58.3		mg/l	0.100	0.0394	1	07/19/19 16:31	07/22/19 12:59	EPA 3005A	1,6020B	AM
Chromium, Dissolved	0.00036	J	mg/l	0.00100	0.00017	1	07/19/19 16:31	07/22/19 12:59	EPA 3005A	1,6020B	AM
Cobalt, Dissolved	0.00235		mg/l	0.00050	0.00016	1	07/19/19 16:31	07/22/19 12:59	EPA 3005A	1,6020B	AM
Copper, Dissolved	0.00039	J	mg/l	0.00100	0.00038	1	07/19/19 16:31	07/22/19 12:59	EPA 3005A	1,6020B	AM
Iron, Dissolved	0.0663		mg/l	0.0500	0.0191	1	07/19/19 16:31	07/22/19 12:59	EPA 3005A	1,6020B	AM
Lead, Dissolved	ND		mg/l	0.00100	0.00034	1	07/19/19 16:31	07/22/19 12:59	EPA 3005A	1,6020B	AM
Magnesium, Dissolved	4.41		mg/l	0.0700	0.0242	1	07/19/19 16:31	07/22/19 12:59	EPA 3005A	1,6020B	AM
Manganese, Dissolved	0.4437		mg/l	0.00100	0.00044	1	07/19/19 16:31	07/22/19 12:59	EPA 3005A	1,6020B	AM
Mercury, Dissolved	ND		mg/l	0.00020	0.00009	1	07/19/19 14:27	07/22/19 12:27	EPA 7470A	1,7470A	GD
Nickel, Dissolved	0.00204		mg/l	0.00200	0.00055	1	07/19/19 16:31	07/22/19 12:59	EPA 3005A	1,6020B	AM
Potassium, Dissolved	5.95		mg/l	0.100	0.0309	1	07/19/19 16:31	07/22/19 12:59	EPA 3005A	1,6020B	AM
Selenium, Dissolved	0.00376	J	mg/l	0.00500	0.00173	1	07/19/19 16:31	07/22/19 12:59	EPA 3005A	1,6020B	AM
Silver, Dissolved	ND		mg/l	0.00040	0.00016	1	07/19/19 16:31	07/22/19 12:59	EPA 3005A	1,6020B	AM
Sodium, Dissolved	10.2		mg/l	0.100	0.0293	1	07/19/19 16:31	07/22/19 12:59	EPA 3005A	1,6020B	AM
Thallium, Dissolved	ND		mg/l	0.00050	0.00014	1	07/19/19 16:31	07/22/19 12:59	EPA 3005A	1,6020B	AM
Vanadium, Dissolved	ND		mg/l	0.00500	0.00157	1	07/19/19 16:31	07/22/19 12:59	EPA 3005A	1,6020B	AM
Zinc, Dissolved	0.01894		mg/l	0.01000	0.00341	1	07/19/19 16:31	07/22/19 12:59	EPA 3005A	1,6020B	AM

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-02 Date Collected: 07/18/19 11:25

Client ID: TMW08_071819 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Refer to COC

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Aluminum, Dissolved	0.299		mg/l	0.0100	0.00327	1	07/19/19 16:31	07/22/19 13:03	EPA 3005A	1,6020B	AM
Antimony, Dissolved	0.00121	J	mg/l	0.00400	0.00042	1	07/19/19 16:31	07/22/19 13:03	EPA 3005A	1,6020B	AM
Arsenic, Dissolved	0.00065		mg/l	0.00050	0.00016	1	07/19/19 16:31	07/22/19 13:03	EPA 3005A	1,6020B	AM
Barium, Dissolved	0.05689		mg/l	0.00050	0.00017	1	07/19/19 16:31	07/22/19 13:03	EPA 3005A	1,6020B	AM
Beryllium, Dissolved	ND		mg/l	0.00050	0.00010	1	07/19/19 16:31	07/22/19 13:03	EPA 3005A	1,6020B	AM
Cadmium, Dissolved	ND		mg/l	0.00020	0.00005	1	07/19/19 16:31	07/22/19 13:03	EPA 3005A	1,6020B	AM
Calcium, Dissolved	90.9		mg/l	0.100	0.0394	1	07/19/19 16:31	07/22/19 13:03	EPA 3005A	1,6020B	AM
Chromium, Dissolved	0.00103		mg/l	0.00100	0.00017	1	07/19/19 16:31	07/22/19 13:03	EPA 3005A	1,6020B	AM
Cobalt, Dissolved	0.00256		mg/l	0.00050	0.00016	1	07/19/19 16:31	07/22/19 13:03	EPA 3005A	1,6020B	AM
Copper, Dissolved	0.00226		mg/l	0.00100	0.00038	1	07/19/19 16:31	07/22/19 13:03	EPA 3005A	1,6020B	AM
Iron, Dissolved	0.476		mg/l	0.0500	0.0191	1	07/19/19 16:31	07/22/19 13:03	EPA 3005A	1,6020B	AM
Lead, Dissolved	0.00335		mg/l	0.00100	0.00034	1	07/19/19 16:31	07/22/19 13:03	EPA 3005A	1,6020B	AM
Magnesium, Dissolved	7.69		mg/l	0.0700	0.0242	1	07/19/19 16:31	07/22/19 13:03	EPA 3005A	1,6020B	AM
Manganese, Dissolved	1.631		mg/l	0.00100	0.00044	1	07/19/19 16:31	07/22/19 13:03	EPA 3005A	1,6020B	AM
Mercury, Dissolved	ND		mg/l	0.00020	0.00009	1	07/22/19 09:18	07/22/19 12:15	EPA 7470A	1,7470A	GD
Nickel, Dissolved	0.00313		mg/l	0.00200	0.00055	1	07/19/19 16:31	07/22/19 13:03	EPA 3005A	1,6020B	AM
Potassium, Dissolved	13.4		mg/l	0.100	0.0309	1	07/19/19 16:31	07/22/19 13:03	EPA 3005A	1,6020B	AM
Selenium, Dissolved	0.00322	J	mg/l	0.00500	0.00173	1	07/19/19 16:31	07/22/19 13:03	EPA 3005A	1,6020B	AM
Silver, Dissolved	ND		mg/l	0.00040	0.00016	1	07/19/19 16:31	07/22/19 13:03	EPA 3005A	1,6020B	AM
Sodium, Dissolved	62.9		mg/l	0.100	0.0293	1	07/19/19 16:31	07/22/19 13:03	EPA 3005A	1,6020B	AM
Thallium, Dissolved	ND		mg/l	0.00050	0.00014	1	07/19/19 16:31	07/22/19 13:03	EPA 3005A	1,6020B	AM
Vanadium, Dissolved	ND		mg/l	0.00500	0.00157	1	07/19/19 16:31	07/22/19 13:03	EPA 3005A	1,6020B	AM
Zinc, Dissolved	0.00389	J	mg/l	0.01000	0.00341	1	07/19/19 16:31	07/22/19 13:03	EPA 3005A	1,6020B	AM

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-03 Date Collected: 07/18/19 00:00

Client ID: DUP02_071819 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Refer to COC

Sample Depth:

Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Aluminum, Dissolved	1.24		mg/l	0.0100	0.00327	1	07/19/19 16:31	07/22/19 13:08	EPA 3005A	1,6020B	AM
Antimony, Dissolved	0.00089	J	mg/l	0.00400	0.00042	1	07/19/19 16:31	07/22/19 13:08	EPA 3005A	1,6020B	AM
Arsenic, Dissolved	0.00087		mg/l	0.00050	0.00016	1	07/19/19 16:31	07/22/19 13:08	EPA 3005A	1,6020B	AM
Barium, Dissolved	0.09016		mg/l	0.00050	0.00017	1	07/19/19 16:31	07/22/19 13:08	EPA 3005A	1,6020B	AM
Beryllium, Dissolved	ND		mg/l	0.00050	0.00010	1	07/19/19 16:31	07/22/19 13:08	EPA 3005A	1,6020B	AM
Cadmium, Dissolved	0.00008	J	mg/l	0.00020	0.00005	1	07/19/19 16:31	07/22/19 13:08	EPA 3005A	1,6020B	AM
Calcium, Dissolved	58.6		mg/l	0.100	0.0394	1	07/19/19 16:31	07/22/19 13:08	EPA 3005A	1,6020B	AM
Chromium, Dissolved	0.00385		mg/l	0.00100	0.00017	1	07/19/19 16:31	07/22/19 13:08	EPA 3005A	1,6020B	AM
Cobalt, Dissolved	0.00349		mg/l	0.00050	0.00016	1	07/19/19 16:31	07/22/19 13:08	EPA 3005A	1,6020B	AM
Copper, Dissolved	0.00687		mg/l	0.00100	0.00038	1	07/19/19 16:31	07/22/19 13:08	EPA 3005A	1,6020B	AM
Iron, Dissolved	2.65		mg/l	0.0500	0.0191	1	07/19/19 16:31	07/22/19 13:08	EPA 3005A	1,6020B	AM
Lead, Dissolved	0.01981		mg/l	0.00100	0.00034	1	07/19/19 16:31	07/22/19 13:08	EPA 3005A	1,6020B	AM
Magnesium, Dissolved	4.86		mg/l	0.0700	0.0242	1	07/19/19 16:31	07/22/19 13:08	EPA 3005A	1,6020B	AM
Manganese, Dissolved	0.4930		mg/l	0.00100	0.00044	1	07/19/19 16:31	07/22/19 13:08	EPA 3005A	1,6020B	AM
Mercury, Dissolved	ND		mg/l	0.00020	0.00009	1	07/19/19 14:27	07/22/19 12:32	EPA 7470A	1,7470A	GD
Nickel, Dissolved	0.00436		mg/l	0.00200	0.00055	1	07/19/19 16:31	07/22/19 13:08	EPA 3005A	1,6020B	AM
Potassium, Dissolved	6.16		mg/l	0.100	0.0309	1	07/19/19 16:31	07/22/19 13:08	EPA 3005A	1,6020B	AM
Selenium, Dissolved	0.00307	J	mg/l	0.00500	0.00173	1	07/19/19 16:31	07/22/19 13:08	EPA 3005A	1,6020B	AM
Silver, Dissolved	ND		mg/l	0.00040	0.00016	1	07/19/19 16:31	07/22/19 13:08	EPA 3005A	1,6020B	AM
Sodium, Dissolved	10.6		mg/l	0.100	0.0293	1	07/19/19 16:31	07/22/19 13:08	EPA 3005A	1,6020B	AM
Thallium, Dissolved	ND		mg/l	0.00050	0.00014	1	07/19/19 16:31	07/22/19 13:08	EPA 3005A	1,6020B	AM
Vanadium, Dissolved	0.00401	J	mg/l	0.00500	0.00157	1	07/19/19 16:31	07/22/19 13:08	EPA 3005A	1,6020B	AM
Zinc, Dissolved	0.04048		mg/l	0.01000	0.00341	1	07/19/19 16:31	07/22/19 13:08	EPA 3005A	1,6020B	AM

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-04 Date Collected: 07/18/19 11:20

Client ID: SB08_5.0-5.5 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 92%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	6070		mg/kg	8.41	2.27	2	07/19/19 17:50	07/22/19 13:55	EPA 3050B	1,6010D	LC
Antimony, Total	0.942	J	mg/kg	4.20	0.320	2	07/19/19 17:50	07/22/19 13:55	EPA 3050B	1,6010D	LC
Arsenic, Total	2.22		mg/kg	0.841	0.175	2	07/19/19 17:50	07/22/19 13:55	EPA 3050B	1,6010D	LC
Barium, Total	34.8		mg/kg	0.841	0.146	2	07/19/19 17:50	07/22/19 13:55	EPA 3050B	1,6010D	LC
Beryllium, Total	0.336	J	mg/kg	0.420	0.028	2	07/19/19 17:50	07/22/19 13:55	EPA 3050B	1,6010D	LC
Cadmium, Total	ND		mg/kg	0.841	0.082	2	07/19/19 17:50	07/22/19 13:55	EPA 3050B	1,6010D	LC
Calcium, Total	977		mg/kg	8.41	2.94	2	07/19/19 17:50	07/22/19 13:55	EPA 3050B	1,6010D	LC
Chromium, Total	17.6		mg/kg	0.841	0.081	2	07/19/19 17:50	07/22/19 13:55	EPA 3050B	1,6010D	LC
Cobalt, Total	5.69		mg/kg	1.68	0.140	2	07/19/19 17:50	07/22/19 13:55	EPA 3050B	1,6010D	LC
Copper, Total	14.0		mg/kg	0.841	0.217	2	07/19/19 17:50	07/22/19 13:55	EPA 3050B	1,6010D	LC
Iron, Total	16700		mg/kg	4.20	0.760	2	07/19/19 17:50	07/22/19 13:55	EPA 3050B	1,6010D	LC
Lead, Total	41.2		mg/kg	4.20	0.225	2	07/19/19 17:50	07/22/19 13:55	EPA 3050B	1,6010D	LC
Magnesium, Total	1420		mg/kg	8.41	1.30	2	07/19/19 17:50	07/22/19 13:55	EPA 3050B	1,6010D	LC
Manganese, Total	284		mg/kg	0.841	0.134	2	07/19/19 17:50	07/22/19 13:55	EPA 3050B	1,6010D	LC
Mercury, Total	0.281		mg/kg	0.070	0.045	1	07/19/19 08:50	07/22/19 12:53	EPA 7471B	1,7471B	GD
Nickel, Total	9.40		mg/kg	2.10	0.204	2	07/19/19 17:50	07/22/19 13:55	EPA 3050B	1,6010D	LC
Potassium, Total	637		mg/kg	210	12.1	2	07/19/19 17:50	07/22/19 13:55	EPA 3050B	1,6010D	LC
Selenium, Total	ND		mg/kg	1.68	0.217	2	07/19/19 17:50	07/22/19 13:55	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.841	0.238	2	07/19/19 17:50	07/22/19 13:55	EPA 3050B	1,6010D	LC
Sodium, Total	48.5	J	mg/kg	168	2.65	2	07/19/19 17:50	07/22/19 13:55	EPA 3050B	1,6010D	LC
Thallium, Total	ND		mg/kg	1.68	0.265	2	07/19/19 17:50	07/22/19 13:55	EPA 3050B	1,6010D	LC
Vanadium, Total	22.8		mg/kg	0.841	0.171	2	07/19/19 17:50	07/22/19 13:55	EPA 3050B	1,6010D	LC
Zinc, Total	33.0		mg/kg	4.20	0.246	2	07/19/19 17:50	07/22/19 13:55	EPA 3050B	1,6010D	LC

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-05 Date Collected: 07/18/19 11:10

Client ID: SB08_14.0-14.5 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 72%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	8780		mg/kg	11.1	2.99	2	07/19/19 17:50	07/22/19 14:12	EPA 3050B	1,6010D	LC
Antimony, Total	1.51	J	mg/kg	5.54	0.421	2	07/19/19 17:50	07/22/19 14:12	EPA 3050B	1,6010D	LC
Arsenic, Total	3.89		mg/kg	1.11	0.230	2	07/19/19 17:50	07/22/19 14:12	EPA 3050B	1,6010D	LC
Barium, Total	45.7		mg/kg	1.11	0.193	2	07/19/19 17:50	07/22/19 14:12	EPA 3050B	1,6010D	LC
Beryllium, Total	0.521	J	mg/kg	0.554	0.037	2	07/19/19 17:50	07/22/19 14:12	EPA 3050B	1,6010D	LC
Cadmium, Total	ND		mg/kg	1.11	0.109	2	07/19/19 17:50	07/22/19 14:12	EPA 3050B	1,6010D	LC
Calcium, Total	1190		mg/kg	11.1	3.88	2	07/19/19 17:50	07/22/19 14:12	EPA 3050B	1,6010D	LC
Chromium, Total	22.6		mg/kg	1.11	0.106	2	07/19/19 17:50	07/22/19 14:12	EPA 3050B	1,6010D	LC
Cobalt, Total	15.3		mg/kg	2.22	0.184	2	07/19/19 17:50	07/22/19 14:12	EPA 3050B	1,6010D	LC
Copper, Total	18.0		mg/kg	1.11	0.286	2	07/19/19 17:50	07/22/19 14:12	EPA 3050B	1,6010D	LC
Iron, Total	28900		mg/kg	5.54	1.00	2	07/19/19 17:50	07/22/19 14:12	EPA 3050B	1,6010D	LC
Lead, Total	64.2		mg/kg	5.54	0.297	2	07/19/19 17:50	07/22/19 14:12	EPA 3050B	1,6010D	LC
Magnesium, Total	1810		mg/kg	11.1	1.71	2	07/19/19 17:50	07/22/19 14:12	EPA 3050B	1,6010D	LC
Manganese, Total	309		mg/kg	1.11	0.176	2	07/19/19 17:50	07/22/19 14:12	EPA 3050B	1,6010D	LC
Mercury, Total	0.501		mg/kg	0.088	0.057	1	07/19/19 08:50	07/22/19 12:55	EPA 7471B	1,7471B	GD
Nickel, Total	32.3		mg/kg	2.77	0.268	2	07/19/19 17:50	07/22/19 14:12	EPA 3050B	1,6010D	LC
Potassium, Total	588		mg/kg	277	16.0	2	07/19/19 17:50	07/22/19 14:12	EPA 3050B	1,6010D	LC
Selenium, Total	ND		mg/kg	2.22	0.286	2	07/19/19 17:50	07/22/19 14:12	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	1.11	0.314	2	07/19/19 17:50	07/22/19 14:12	EPA 3050B	1,6010D	LC
Sodium, Total	175	J	mg/kg	222	3.49	2	07/19/19 17:50	07/22/19 14:12	EPA 3050B	1,6010D	LC
Thallium, Total	ND		mg/kg	2.22	0.349	2	07/19/19 17:50	07/22/19 14:12	EPA 3050B	1,6010D	LC
Vanadium, Total	30.6		mg/kg	1.11	0.225	2	07/19/19 17:50	07/22/19 14:12	EPA 3050B	1,6010D	LC
Zinc, Total	37.5		mg/kg	5.54	0.325	2	07/19/19 17:50	07/22/19 14:12	EPA 3050B	1,6010D	LC

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-06 Date Collected: 07/18/19 10:15

Client ID: SB12_6.5-7.0 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 89%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	5340		mg/kg	8.96	2.42	2	07/19/19 17:50	07/22/19 14:16	EPA 3050B	1,6010D	LC
Antimony, Total	2.01	J	mg/kg	4.48	0.340	2	07/19/19 17:50	07/22/19 14:16	EPA 3050B	1,6010D	LC
Arsenic, Total	11.2		mg/kg	0.896	0.186	2	07/19/19 17:50	07/22/19 14:16	EPA 3050B	1,6010D	LC
Barium, Total	94.9		mg/kg	0.896	0.156	2	07/19/19 17:50	07/22/19 14:16	EPA 3050B	1,6010D	LC
Beryllium, Total	0.331	J	mg/kg	0.448	0.030	2	07/19/19 17:50	07/22/19 14:16	EPA 3050B	1,6010D	LC
Cadmium, Total	ND		mg/kg	0.896	0.088	2	07/19/19 17:50	07/22/19 14:16	EPA 3050B	1,6010D	LC
Calcium, Total	4270		mg/kg	8.96	3.14	2	07/19/19 17:50	07/22/19 14:16	EPA 3050B	1,6010D	LC
Chromium, Total	13.8		mg/kg	0.896	0.086	2	07/19/19 17:50	07/22/19 14:16	EPA 3050B	1,6010D	LC
Cobalt, Total	5.76		mg/kg	1.79	0.149	2	07/19/19 17:50	07/22/19 14:16	EPA 3050B	1,6010D	LC
Copper, Total	38.2		mg/kg	0.896	0.231	2	07/19/19 17:50	07/22/19 14:16	EPA 3050B	1,6010D	LC
Iron, Total	16800		mg/kg	4.48	0.809	2	07/19/19 17:50	07/22/19 14:16	EPA 3050B	1,6010D	LC
Lead, Total	193		mg/kg	4.48	0.240	2	07/19/19 17:50	07/22/19 14:16	EPA 3050B	1,6010D	LC
Magnesium, Total	1640		mg/kg	8.96	1.38	2	07/19/19 17:50	07/22/19 14:16	EPA 3050B	1,6010D	LC
Manganese, Total	321		mg/kg	0.896	0.142	2	07/19/19 17:50	07/22/19 14:16	EPA 3050B	1,6010D	LC
Mercury, Total	0.772		mg/kg	0.071	0.046	1	07/19/19 08:50	07/22/19 12:57	EPA 7471B	1,7471B	GD
Nickel, Total	12.2		mg/kg	2.24	0.217	2	07/19/19 17:50	07/22/19 14:16	EPA 3050B	1,6010D	LC
Potassium, Total	588		mg/kg	224	12.9	2	07/19/19 17:50	07/22/19 14:16	EPA 3050B	1,6010D	LC
Selenium, Total	ND		mg/kg	1.79	0.231	2	07/19/19 17:50	07/22/19 14:16	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.896	0.254	2	07/19/19 17:50	07/22/19 14:16	EPA 3050B	1,6010D	LC
Sodium, Total	163	J	mg/kg	179	2.82	2	07/19/19 17:50	07/22/19 14:16	EPA 3050B	1,6010D	LC
Thallium, Total	ND		mg/kg	1.79	0.282	2	07/19/19 17:50	07/22/19 14:16	EPA 3050B	1,6010D	LC
Vanadium, Total	20.0		mg/kg	0.896	0.182	2	07/19/19 17:50	07/22/19 14:16	EPA 3050B	1,6010D	LC
Zinc, Total	158		mg/kg	4.48	0.262	2	07/19/19 17:50	07/22/19 14:16	EPA 3050B	1,6010D	LC

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-07 Date Collected: 07/18/19 15:00

Client ID: SB07_4.5-5.0 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 88%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	2490		mg/kg	8.81	2.38	2	07/19/19 17:50	07/22/19 14:20	EPA 3050B	1,6010D	LC
Antimony, Total	4.48		mg/kg	4.40	0.335	2	07/19/19 17:50	07/22/19 14:20	EPA 3050B	1,6010D	LC
Arsenic, Total	67.0		mg/kg	0.881	0.183	2	07/19/19 17:50	07/22/19 14:20	EPA 3050B	1,6010D	LC
Barium, Total	84.3		mg/kg	0.881	0.153	2	07/19/19 17:50	07/22/19 14:20	EPA 3050B	1,6010D	LC
Beryllium, Total	0.167	J	mg/kg	0.440	0.029	2	07/19/19 17:50	07/22/19 14:20	EPA 3050B	1,6010D	LC
Cadmium, Total	1.27		mg/kg	0.881	0.086	2	07/19/19 17:50	07/22/19 14:20	EPA 3050B	1,6010D	LC
Calcium, Total	17300		mg/kg	8.81	3.08	2	07/19/19 17:50	07/22/19 14:20	EPA 3050B	1,6010D	LC
Chromium, Total	14.8		mg/kg	0.881	0.085	2	07/19/19 17:50	07/22/19 14:20	EPA 3050B	1,6010D	LC
Cobalt, Total	9.14		mg/kg	1.76	0.146	2	07/19/19 17:50	07/22/19 14:20	EPA 3050B	1,6010D	LC
Copper, Total	42.0		mg/kg	0.881	0.227	2	07/19/19 17:50	07/22/19 14:20	EPA 3050B	1,6010D	LC
Iron, Total	58000		mg/kg	4.40	0.796	2	07/19/19 17:50	07/22/19 14:20	EPA 3050B	1,6010D	LC
Lead, Total	131		mg/kg	4.40	0.236	2	07/19/19 17:50	07/22/19 14:20	EPA 3050B	1,6010D	LC
Magnesium, Total	9700		mg/kg	8.81	1.36	2	07/19/19 17:50	07/22/19 14:20	EPA 3050B	1,6010D	LC
Manganese, Total	329		mg/kg	0.881	0.140	2	07/19/19 17:50	07/22/19 14:20	EPA 3050B	1,6010D	LC
Mercury, Total	0.527		mg/kg	0.072	0.047	1	07/19/19 08:50	07/22/19 12:59	EPA 7471B	1,7471B	GD
Nickel, Total	16.9		mg/kg	2.20	0.213	2	07/19/19 17:50	07/22/19 14:20	EPA 3050B	1,6010D	LC
Potassium, Total	428		mg/kg	220	12.7	2	07/19/19 17:50	07/22/19 14:20	EPA 3050B	1,6010D	LC
Selenium, Total	7.85		mg/kg	1.76	0.227	2	07/19/19 17:50	07/22/19 14:20	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.881	0.249	2	07/19/19 17:50	07/22/19 14:20	EPA 3050B	1,6010D	LC
Sodium, Total	136	J	mg/kg	176	2.78	2	07/19/19 17:50	07/22/19 14:20	EPA 3050B	1,6010D	LC
Thallium, Total	0.634	J	mg/kg	1.76	0.278	2	07/19/19 17:50	07/22/19 14:20	EPA 3050B	1,6010D	LC
Vanadium, Total	31.8		mg/kg	0.881	0.179	2	07/19/19 17:50	07/22/19 14:20	EPA 3050B	1,6010D	LC
Zinc, Total	197		mg/kg	4.40	0.258	2	07/19/19 17:50	07/22/19 14:20	EPA 3050B	1,6010D	LC

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-08 Date Collected: 07/18/19 14:05

Client ID: SB14_4.5-5.0 Date Received: 07/18/19

Sample Location: BROOKLYN, NY Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Percent Solids: 90%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	6400		mg/kg	8.71	2.35	2	07/19/19 17:50	07/22/19 14:24	EPA 3050B	1,6010D	LC
Antimony, Total	2.03	J	mg/kg	4.36	0.331	2	07/19/19 17:50	07/22/19 14:24	EPA 3050B	1,6010D	LC
Arsenic, Total	5.18		mg/kg	0.871	0.181	2	07/19/19 17:50	07/22/19 14:24	EPA 3050B	1,6010D	LC
Barium, Total	81.8		mg/kg	0.871	0.152	2	07/19/19 17:50	07/22/19 14:24	EPA 3050B	1,6010D	LC
Beryllium, Total	0.436		mg/kg	0.436	0.029	2	07/19/19 17:50	07/22/19 14:24	EPA 3050B	1,6010D	LC
Cadmium, Total	ND		mg/kg	0.871	0.085	2	07/19/19 17:50	07/22/19 14:24	EPA 3050B	1,6010D	LC
Calcium, Total	1880		mg/kg	8.71	3.05	2	07/19/19 17:50	07/22/19 14:24	EPA 3050B	1,6010D	LC
Chromium, Total	14.6		mg/kg	0.871	0.084	2	07/19/19 17:50	07/22/19 14:24	EPA 3050B	1,6010D	LC
Cobalt, Total	6.57		mg/kg	1.74	0.145	2	07/19/19 17:50	07/22/19 14:24	EPA 3050B	1,6010D	LC
Copper, Total	32.5		mg/kg	0.871	0.225	2	07/19/19 17:50	07/22/19 14:24	EPA 3050B	1,6010D	LC
Iron, Total	27000		mg/kg	4.36	0.787	2	07/19/19 17:50	07/22/19 14:24	EPA 3050B	1,6010D	LC
Lead, Total	170		mg/kg	4.36	0.234	2	07/19/19 17:50	07/22/19 14:24	EPA 3050B	1,6010D	LC
Magnesium, Total	2530		mg/kg	8.71	1.34	2	07/19/19 17:50	07/22/19 14:24	EPA 3050B	1,6010D	LC
Manganese, Total	466		mg/kg	0.871	0.138	2	07/19/19 17:50	07/22/19 14:24	EPA 3050B	1,6010D	LC
Mercury, Total	0.725		mg/kg	0.070	0.046	1	07/19/19 08:50	07/22/19 13:00	EPA 7471B	1,7471B	GD
Nickel, Total	24.2		mg/kg	2.18	0.211	2	07/19/19 17:50	07/22/19 14:24	EPA 3050B	1,6010D	LC
Potassium, Total	715		mg/kg	218	12.5	2	07/19/19 17:50	07/22/19 14:24	EPA 3050B	1,6010D	LC
Selenium, Total	ND		mg/kg	1.74	0.225	2	07/19/19 17:50	07/22/19 14:24	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.871	0.246	2	07/19/19 17:50	07/22/19 14:24	EPA 3050B	1,6010D	LC
Sodium, Total	86.4	J	mg/kg	174	2.74	2	07/19/19 17:50	07/22/19 14:24	EPA 3050B	1,6010D	LC
Thallium, Total	ND		mg/kg	1.74	0.274	2	07/19/19 17:50	07/22/19 14:24	EPA 3050B	1,6010D	LC
Vanadium, Total	33.5		mg/kg	0.871	0.177	2	07/19/19 17:50	07/22/19 14:24	EPA 3050B	1,6010D	LC
Zinc, Total	416		mg/kg	4.36	0.255	2	07/19/19 17:50	07/22/19 14:24	EPA 3050B	1,6010D	LC

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 04-08 Batch: WG1261950-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	07/19/19 08:50	07/22/19 12:26	1,7471B	GD

Prep Information

Digestion Method: EPA 7471B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01,03 Batch: WG1262134-1										
Mercury, Dissolved	ND		mg/l	0.00020	0.00009	1	07/19/19 14:27	07/22/19 12:23	1,7470A	GD

Prep Information

Digestion Method: EPA 7470A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 01-03 Batch: WG1262151-1										
Aluminum, Dissolved	ND		mg/l	0.0100	0.00327	1	07/19/19 16:31	07/22/19 10:52	1,6020B	AM
Antimony, Dissolved	0.00110	J	mg/l	0.00400	0.00042	1	07/19/19 16:31	07/22/19 10:52	1,6020B	AM
Arsenic, Dissolved	ND		mg/l	0.00050	0.00016	1	07/19/19 16:31	07/22/19 10:52	1,6020B	AM
Barium, Dissolved	ND		mg/l	0.00050	0.00017	1	07/19/19 16:31	07/22/19 10:52	1,6020B	AM
Beryllium, Dissolved	ND		mg/l	0.00050	0.00010	1	07/19/19 16:31	07/22/19 10:52	1,6020B	AM
Cadmium, Dissolved	ND		mg/l	0.00020	0.00005	1	07/19/19 16:31	07/22/19 10:52	1,6020B	AM
Calcium, Dissolved	ND		mg/l	0.100	0.0394	1	07/19/19 16:31	07/22/19 10:52	1,6020B	AM
Chromium, Dissolved	ND		mg/l	0.00100	0.00017	1	07/19/19 16:31	07/22/19 10:52	1,6020B	AM
Cobalt, Dissolved	ND		mg/l	0.00050	0.00016	1	07/19/19 16:31	07/22/19 10:52	1,6020B	AM
Copper, Dissolved	ND		mg/l	0.00100	0.00038	1	07/19/19 16:31	07/22/19 10:52	1,6020B	AM
Iron, Dissolved	0.0288	J	mg/l	0.0500	0.0191	1	07/19/19 16:31	07/22/19 10:52	1,6020B	AM
Lead, Dissolved	ND		mg/l	0.00100	0.00034	1	07/19/19 16:31	07/22/19 10:52	1,6020B	AM
Magnesium, Dissolved	ND		mg/l	0.0700	0.0242	1	07/19/19 16:31	07/22/19 10:52	1,6020B	AM
Manganese, Dissolved	ND		mg/l	0.00100	0.00044	1	07/19/19 16:31	07/22/19 10:52	1,6020B	AM
Nickel, Dissolved	ND		mg/l	0.00200	0.00055	1	07/19/19 16:31	07/22/19 10:52	1,6020B	AM

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931803

Project Number: 170588001 **Report Date:** 07/23/19

Method Blank Analysis
Batch Quality Control

Potassium, Dissolved	ND		mg/l	0.100	0.0309	1	07/19/19 16:31	07/22/19 10:52	1,6020B	AM
Selenium, Dissolved	ND		mg/l	0.00500	0.00173	1	07/19/19 16:31	07/22/19 10:52	1,6020B	AM
Silver, Dissolved	ND		mg/l	0.00040	0.00016	1	07/19/19 16:31	07/22/19 10:52	1,6020B	AM
Sodium, Dissolved	0.0495	J	mg/l	0.100	0.0293	1	07/19/19 16:31	07/22/19 10:52	1,6020B	AM
Thallium, Dissolved	ND		mg/l	0.00050	0.00014	1	07/19/19 16:31	07/22/19 10:52	1,6020B	AM
Vanadium, Dissolved	ND		mg/l	0.00500	0.00157	1	07/19/19 16:31	07/22/19 10:52	1,6020B	AM
Zinc, Dissolved	ND		mg/l	0.01000	0.00341	1	07/19/19 16:31	07/22/19 10:52	1,6020B	AM

Prep Information

Digestion Method: EPA 3005A

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 04-08 Batch: WG1262216-1										
Aluminum, Total	ND		mg/kg	4.00	1.08	1	07/19/19 17:50	07/22/19 13:20	1,6010D	LC
Antimony, Total	ND		mg/kg	2.00	0.152	1	07/19/19 17:50	07/22/19 13:20	1,6010D	LC
Arsenic, Total	ND		mg/kg	0.400	0.083	1	07/19/19 17:50	07/22/19 13:20	1,6010D	LC
Barium, Total	ND		mg/kg	0.400	0.070	1	07/19/19 17:50	07/22/19 13:20	1,6010D	LC
Beryllium, Total	ND		mg/kg	0.200	0.013	1	07/19/19 17:50	07/22/19 13:20	1,6010D	LC
Cadmium, Total	ND		mg/kg	0.400	0.039	1	07/19/19 17:50	07/22/19 13:20	1,6010D	LC
Calcium, Total	ND		mg/kg	4.00	1.40	1	07/19/19 17:50	07/22/19 13:20	1,6010D	LC
Chromium, Total	ND		mg/kg	0.400	0.038	1	07/19/19 17:50	07/22/19 13:20	1,6010D	LC
Cobalt, Total	ND		mg/kg	0.800	0.066	1	07/19/19 17:50	07/22/19 13:20	1,6010D	LC
Copper, Total	ND		mg/kg	0.400	0.103	1	07/19/19 17:50	07/22/19 13:20	1,6010D	LC
Iron, Total	ND		mg/kg	2.00	0.361	1	07/19/19 17:50	07/22/19 13:20	1,6010D	LC
Lead, Total	ND		mg/kg	2.00	0.107	1	07/19/19 17:50	07/22/19 13:20	1,6010D	LC
Magnesium, Total	ND		mg/kg	4.00	0.616	1	07/19/19 17:50	07/22/19 13:20	1,6010D	LC
Manganese, Total	ND		mg/kg	0.400	0.064	1	07/19/19 17:50	07/22/19 13:20	1,6010D	LC
Nickel, Total	ND		mg/kg	1.00	0.097	1	07/19/19 17:50	07/22/19 13:20	1,6010D	LC
Potassium, Total	ND		mg/kg	100	5.76	1	07/19/19 17:50	07/22/19 13:20	1,6010D	LC
Selenium, Total	ND		mg/kg	0.800	0.103	1	07/19/19 17:50	07/22/19 13:20	1,6010D	LC
Silver, Total	ND		mg/kg	0.400	0.113	1	07/19/19 17:50	07/22/19 13:20	1,6010D	LC
Sodium, Total	2.01	J	mg/kg	80.0	1.26	1	07/19/19 17:50	07/22/19 13:20	1,6010D	LC
Thallium, Total	ND		mg/kg	0.800	0.126	1	07/19/19 17:50	07/22/19 13:20	1,6010D	LC
Vanadium, Total	ND		mg/kg	0.400	0.081	1	07/19/19 17:50	07/22/19 13:20	1,6010D	LC
Zinc, Total	ND		mg/kg	2.00	0.117	1	07/19/19 17:50	07/22/19 13:20	1,6010D	LC

Project Name: 450 JOHNSON AVE.
Project Number: 170588001
Lab Number: L1931803
Report Date: 07/23/19

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 02 Batch: WG1262746-1										
Mercury, Dissolved	ND		mg/l	0.00020	0.00009	1	07/22/19 09:18	07/22/19 12:11	1,7470A	GD

Prep Information

Digestion Method: EPA 7470A

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.

Project Number: 170588001

Lab Number: L1931803

Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 04-08 Batch: WG1261950-2 SRM Lot Number: D105-540								
Mercury, Total	94		-		60-141	-		
Dissolved Metals - Mansfield Lab Associated sample(s): 01,03 Batch: WG1262134-2								
Mercury, Dissolved	95		-		80-120	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.

Project Number: 170588001

Lab Number: L1931803

Report Date: 07/23/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1262151-2					
Aluminum, Dissolved	108	-	80-120	-	
Antimony, Dissolved	104	-	80-120	-	
Arsenic, Dissolved	107	-	80-120	-	
Barium, Dissolved	106	-	80-120	-	
Beryllium, Dissolved	109	-	80-120	-	
Cadmium, Dissolved	108	-	80-120	-	
Calcium, Dissolved	114	-	80-120	-	
Chromium, Dissolved	107	-	80-120	-	
Cobalt, Dissolved	106	-	80-120	-	
Copper, Dissolved	102	-	80-120	-	
Iron, Dissolved	120	-	80-120	-	
Lead, Dissolved	107	-	80-120	-	
Magnesium, Dissolved	108	-	80-120	-	
Manganese, Dissolved	103	-	80-120	-	
Nickel, Dissolved	107	-	80-120	-	
Potassium, Dissolved	102	-	80-120	-	
Selenium, Dissolved	100	-	80-120	-	
Silver, Dissolved	104	-	80-120	-	
Sodium, Dissolved	101	-	80-120	-	
Thallium, Dissolved	105	-	80-120	-	
Vanadium, Dissolved	107	-	80-120	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.

Project Number: 170588001

Lab Number: L1931803

Report Date: 07/23/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 Batch: WG1262151-2					
Zinc, Dissolved	110	-	80-120	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.

Project Number: 170588001

Lab Number: L1931803

Report Date: 07/23/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 04-08 Batch: WG1262216-2 SRM Lot Number: D105-540					
Aluminum, Total	59	-	51-149	-	
Antimony, Total	128	-	19-249	-	
Arsenic, Total	97	-	70-130	-	
Barium, Total	89	-	75-125	-	
Beryllium, Total	100	-	75-125	-	
Cadmium, Total	101	-	75-125	-	
Calcium, Total	85	-	73-127	-	
Chromium, Total	87	-	70-130	-	
Cobalt, Total	96	-	75-125	-	
Copper, Total	91	-	75-125	-	
Iron, Total	74	-	38-162	-	
Lead, Total	87	-	71-128	-	
Magnesium, Total	80	-	63-137	-	
Manganese, Total	86	-	76-124	-	
Nickel, Total	98	-	70-131	-	
Potassium, Total	73	-	60-140	-	
Selenium, Total	94	-	63-137	-	
Silver, Total	88	-	69-131	-	
Sodium, Total	97	-	37-162	-	
Thallium, Total	97	-	68-132	-	
Vanadium, Total	86	-	65-135	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.

Project Number: 170588001

Lab Number: L1931803

Report Date: 07/23/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 04-08 Batch: WG1262216-2 SRM Lot Number: D105-540					
Zinc, Total	92	-	70-130	-	
Dissolved Metals - Mansfield Lab Associated sample(s): 02 Batch: WG1262746-2					
Mercury, Dissolved	105	-	80-120	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 04-08 QC Batch ID: WG1261950-3 QC Sample: L1931536-01 Client ID: MS Sample												
Mercury, Total	ND	0.182	0.223	**123**	Q	-	-		80-120	-		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1262134-3 QC Sample: L1930207-01 Client ID: MS Sample												
Mercury, Dissolved	ND	0.005	0.00487	97		-	-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1262151-3 QC Sample: L1930207-01 Client ID: MS Sample										
Aluminum, Dissolved	ND	2	2.15	108		-	-	75-125	-	20
Antimony, Dissolved	0.00124J	0.5	0.4509	90		-	-	75-125	-	20
Arsenic, Dissolved	ND	0.12	0.1346	112		-	-	75-125	-	20
Barium, Dissolved	0.1433	2	2.259	106		-	-	75-125	-	20
Beryllium, Dissolved	ND	0.05	0.05161	103		-	-	75-125	-	20
Cadmium, Dissolved	ND	0.051	0.05688	112		-	-	75-125	-	20
Calcium, Dissolved	82.2	10	94.2	120		-	-	75-125	-	20
Chromium, Dissolved	0.00064J	0.2	0.2056	103		-	-	75-125	-	20
Cobalt, Dissolved	0.00035J	0.5	0.5142	103		-	-	75-125	-	20
Copper, Dissolved	0.00115	0.25	0.2509	100		-	-	75-125	-	20
Iron, Dissolved	0.0352J	1	1.17	117		-	-	75-125	-	20
Lead, Dissolved	ND	0.51	0.5890	115		-	-	75-125	-	20
Magnesium, Dissolved	12.7	10	23.9	112		-	-	75-125	-	20
Manganese, Dissolved	0.1118	0.5	0.6271	103		-	-	75-125	-	20
Nickel, Dissolved	0.00127J	0.5	0.5193	104		-	-	75-125	-	20
Potassium, Dissolved	6.88	10	16.9	100		-	-	75-125	-	20
Selenium, Dissolved	0.00420J	0.12	0.136	113		-	-	75-125	-	20
Silver, Dissolved	ND	0.05	0.05266	105		-	-	75-125	-	20
Sodium, Dissolved	82.6	10	88.8	**62**	Q	-	-	75-125	-	20
Thallium, Dissolved	ND	0.12	0.1331	111		-	-	75-125	-	20
Vanadium, Dissolved	ND	0.5	0.5288	106		-	-	75-125	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1262151-3 QC Sample: L1930207-01 Client ID: MS Sample									
Zinc, Dissolved	ND	0.5	0.5460	109	-	-	75-125	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 04-08 QC Batch ID: WG1262216-3 QC Sample: L1931033-01 Client ID: MS Sample										
Aluminum, Total	9590	177	10400	**457**	Q	-	-	75-125	-	20
Antimony, Total	0.756J	44.3	33.2	75		-	-	75-125	-	20
Arsenic, Total	12.8	10.6	24.4	109		-	-	75-125	-	20
Barium, Total	113	177	304	108		-	-	75-125	-	20
Beryllium, Total	0.378J	4.43	4.63	104		-	-	75-125	-	20
Cadmium, Total	0.117J	4.52	4.31	95		-	-	75-125	-	20
Calcium, Total	8020	886	10000	**223**	Q	-	-	75-125	-	20
Chromium, Total	21.8	17.7	37.6	89		-	-	75-125	-	20
Cobalt, Total	8.88	44.3	49.0	90		-	-	75-125	-	20
Copper, Total	40.5	22.2	69.4	**130**	Q	-	-	75-125	-	20
Iron, Total	17100	88.6	20700	**4060**	Q	-	-	75-125	-	20
Lead, Total	108	45.2	148	88		-	-	75-125	-	20
Magnesium, Total	3120	886	3830	80		-	-	75-125	-	20
Manganese, Total	335	44.3	644	**697**	Q	-	-	75-125	-	20
Nickel, Total	16.8	44.3	54.5	85		-	-	75-125	-	20
Potassium, Total	2040	886	3260	**138**	Q	-	-	75-125	-	20
Selenium, Total	0.540J	10.6	11.0	103		-	-	75-125	-	20
Silver, Total	ND	26.6	25.4	95		-	-	75-125	-	20
Sodium, Total	203	886	1110	102		-	-	75-125	-	20
Thallium, Total	ND	10.6	8.97	84		-	-	75-125	-	20
Vanadium, Total	28.5	44.3	70.8	95		-	-	75-125	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 04-08 QC Batch ID: WG1262216-3 QC Sample: L1931033-01 Client ID: MS Sample										
Zinc, Total	142	44.3	217	**169**	Q	-	-	75-125	-	20
Dissolved Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1262746-3 QC Sample: L1931803-02 Client ID: TMW08_071819										
Mercury, Dissolved	ND	0.005	0.00475	95		-	-	75-125	-	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.

Project Number: 170588001

Lab Number: L1931803

Report Date: 07/23/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 04-08 QC Batch ID: WG1261950-4 QC Sample: L1931536-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/kg	NC		20
Dissolved Metals - Mansfield Lab Associated sample(s): 01,03 QC Batch ID: WG1262134-4 QC Sample: L1930207-01 Client ID: DUP Sample						
Mercury, Dissolved	ND	ND	mg/l	NC		20

Lab Duplicate Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1262151-4 QC Sample: L1930207-01 Client ID: DUP Sample					
Aluminum, Dissolved	ND	ND	mg/l	NC	20
Antimony, Dissolved	0.00124J	0.00333J	mg/l	NC	20
Arsenic, Dissolved	ND	0.00023J	mg/l	NC	20
Barium, Dissolved	0.1433	0.1421	mg/l	1	20
Beryllium, Dissolved	ND	ND	mg/l	NC	20
Cadmium, Dissolved	ND	ND	mg/l	NC	20
Calcium, Dissolved	82.2	83.2	mg/l	1	20
Chromium, Dissolved	0.00064J	0.00065J	mg/l	NC	20
Cobalt, Dissolved	0.00035J	0.00032J	mg/l	NC	20
Copper, Dissolved	0.00115	0.00110	mg/l	4	20
Iron, Dissolved	0.0352J	0.0566	mg/l	NC	20
Lead, Dissolved	ND	ND	mg/l	NC	20
Magnesium, Dissolved	12.7	12.8	mg/l	1	20
Manganese, Dissolved	0.1118	0.1136	mg/l	2	20
Nickel, Dissolved	0.00127J	0.00131J	mg/l	NC	20
Potassium, Dissolved	6.88	6.79	mg/l	1	20
Selenium, Dissolved	0.00420J	0.00450J	mg/l	NC	20
Silver, Dissolved	ND	ND	mg/l	NC	20
Sodium, Dissolved	82.6	82.9	mg/l	0	20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.

Project Number: 170588001

Lab Number: L1931803

Report Date: 07/23/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 01-03 QC Batch ID: WG1262151-4 QC Sample: L1930207-01 Client ID: DUP Sample					
Thallium, Dissolved	ND	0.00027J	mg/l	NC	20
Vanadium, Dissolved	ND	ND	mg/l	NC	20
Zinc, Dissolved	ND	ND	mg/l	NC	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Parameter	Native Sample	Duplicate Sample	Units	RPD		RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 04-08 QC Batch ID: WG1262216-4 QC Sample: L1931033-01 Client ID: DUP Sample						
Aluminum, Total	9590	8410	mg/kg	13		20
Antimony, Total	0.756J	0.792J	mg/kg	NC		20
Arsenic, Total	12.8	11.7	mg/kg	9		20
Barium, Total	113	94.8	mg/kg	18		20
Beryllium, Total	0.378J	0.356J	mg/kg	NC		20
Cadmium, Total	0.117J	0.142J	mg/kg	NC		20
Calcium, Total	8020	7120	mg/kg	12		20
Chromium, Total	21.8	19.0	mg/kg	14		20
Cobalt, Total	8.88	9.16	mg/kg	3		20
Copper, Total	40.5	39.5	mg/kg	3		20
Iron, Total	17100	16000	mg/kg	7		20
Lead, Total	108	86.4	mg/kg	**22**	Q	20
Magnesium, Total	3120	3020	mg/kg	3		20
Manganese, Total	335	413	mg/kg	**21**	Q	20
Nickel, Total	16.8	14.4	mg/kg	15		20
Potassium, Total	2040	1810	mg/kg	12		20
Selenium, Total	0.540J	0.649J	mg/kg	NC		20
Silver, Total	ND	ND	mg/kg	NC		20
Sodium, Total	203	237	mg/kg	15		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.

Project Number: 170588001

Lab Number: L1931803

Report Date: 07/23/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 04-08 QC Batch ID: WG1262216-4 QC Sample: L1931033-01 Client ID: DUP Sample					
Thallium, Total	ND	ND	mg/kg	NC	20
Vanadium, Total	28.5	27.4	mg/kg	4	20
Zinc, Total	142	147	mg/kg	3	20
Dissolved Metals - Mansfield Lab Associated sample(s): 02 QC Batch ID: WG1262746-4 QC Sample: L1931803-02 Client ID: TMW08_071819					
Mercury, Dissolved	ND	ND	mg/l	NC	20

INORGANICS
&
MISCELLANEOUS

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-04
Client ID: SB08_5.0-5.5
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 11:20
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.8		%	0.100	NA	1	-	07/19/19 03:46	121,2540G	YA

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-05
Client ID: SB08_14.0-14.5
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 11:10
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	71.5		%	0.100	NA	1	-	07/19/19 03:46	121,2540G	YA

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-06
Client ID: SB12_6.5-7.0
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 10:15
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	89.3		%	0.100	NA	1	-	07/19/19 03:46	121,2540G	YA

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-07
Client ID: SB07_4.5-5.0
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 15:00
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	88.2		%	0.100	NA	1	-	07/19/19 03:46	121,2540G	YA

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1931803-08
Client ID: SB14_4.5-5.0
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 14:05
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	90.3		%	0.100	NA	1	-	07/19/19 03:46	121,2540G	YA

Lab Duplicate Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.

Project Number: 170588001

Lab Number: L1931803

Report Date: 07/23/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 04-08 QC Batch ID: WG1261874-1 QC Sample: L1931923-01 Client ID: DUP Sample						
Solids, Total	57.0	61.7	%	8		20

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1931803-01A	Vial HCl preserved	A	NA		4.6	Y	Absent		NYTCL-8260(14)
L1931803-01B	Vial HCl preserved	A	NA		4.6	Y	Absent		NYTCL-8260(14)
L1931803-01C	Vial HCl preserved	A	NA		4.6	Y	Absent		NYTCL-8260(14)
L1931803-01D	Plastic 250ml HNO3 preserved	A	<2	<2	4.6	Y	Absent		CU-6020S(180),K-6020S(180),SE-6020S(180),V-6020S(180),MN-6020S(180),BE-6020S(180),CO-6020S(180),MG-6020S(180),ZN-6020S(180),CA-6020S(180),CR-6020S(180),FE-6020S(180),BA-6020S(180),NA-6020S(180),NI-6020S(180),PB-6020S(180),TL-6020S(180),AG-6020S(180),AS-6020S(180),SB-6020S(180),AL-6020S(180),CD-6020S(180),HG-S(28)
L1931803-01E	Amber 1000ml unpreserved	A	7	7	4.6	Y	Absent		HOLD-8270(7)
L1931803-02A	Vial HCl preserved	A	NA		4.6	Y	Absent		NYTCL-8260(14)
L1931803-02B	Vial HCl preserved	A	NA		4.6	Y	Absent		NYTCL-8260(14)
L1931803-02C	Vial HCl preserved	A	NA		4.6	Y	Absent		NYTCL-8260(14)
L1931803-02D	Amber 250ml unpreserved	A	7	7	4.6	Y	Absent		HOLD-8270(7)
L1931803-02F	Amber 250ml unpreserved	A	7	7	4.6	Y	Absent		ARCHIVE()
L1931803-02W	Plastic 250ml HNO3 preserved split	A	<2	<2	4.6	Y	Absent		CU-6020S(180),K-6020S(180),SE-6020S(180),V-6020S(180),MN-6020S(180),BE-6020S(180),CO-6020S(180),MG-6020S(180),ZN-6020S(180),CA-6020S(180),CR-6020S(180),FE-6020S(180),BA-6020S(180),NA-6020S(180),NI-6020S(180),PB-6020S(180),TL-6020S(180),AG-6020S(180),AS-6020S(180),SB-6020S(180),AL-6020S(180),CD-6020S(180),HG-S(28)
L1931803-03A	Vial HCl preserved	A	NA		4.6	Y	Absent		NYTCL-8260(14)
L1931803-03B	Vial HCl preserved	A	NA		4.6	Y	Absent		NYTCL-8260(14)
L1931803-03C	Vial HCl preserved	A	NA		4.6	Y	Absent		NYTCL-8260(14)

*Values in parentheses indicate holding time in days

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1931803-03D	Plastic 250ml HNO3 preserved	A	<2	<2	4.6	Y	Absent		CU-6020S(180),K-6020S(180),SE-6020S(180),V-6020S(180),MN-6020S(180),BE-6020S(180),CO-6020S(180),MG-6020S(180),ZN-6020S(180),CA-6020S(180),CR-6020S(180),FE-6020S(180),BA-6020S(180),NA-6020S(180),NI-6020S(180),PB-6020S(180),TL-6020S(180),AG-6020S(180),AS-6020S(180),SB-6020S(180),AL-6020S(180),CD-6020S(180),HG-S(28)
L1931803-03E	Amber 250ml unpreserved	A	7	7	4.6	Y	Absent		HOLD-8270(7)
L1931803-03F	Amber 250ml unpreserved	A	7	7	4.6	Y	Absent		HOLD-8270(7)
L1931803-04A	Vial MeOH preserved	A	NA		4.6	Y	Absent		NYTCL-8260HLW(14)
L1931803-04B	Vial water preserved	A	NA		4.6	Y	Absent	19-JUL-19 02:37	NYTCL-8260HLW(14)
L1931803-04C	Vial water preserved	A	NA		4.6	Y	Absent	19-JUL-19 02:37	NYTCL-8260HLW(14)
L1931803-04D	Plastic 2oz unpreserved for TS	A	NA		4.6	Y	Absent		TS(7)
L1931803-04E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1931803-04F	Glass 120ml/4oz unpreserved	A	NA		4.6	Y	Absent		NYTCL-8270(14),HOLD-8082(14)
L1931803-04G	Glass 120ml/4oz unpreserved	A	NA		4.6	Y	Absent		NYTCL-8270(14),HOLD-8082(14)
L1931803-05A	Vial MeOH preserved	A	NA		4.6	Y	Absent		NYTCL-8260HLW(14)
L1931803-05B	Vial water preserved	A	NA		4.6	Y	Absent	19-JUL-19 02:37	NYTCL-8260HLW(14)
L1931803-05C	Vial water preserved	A	NA		4.6	Y	Absent	19-JUL-19 02:37	NYTCL-8260HLW(14)
L1931803-05D	Plastic 2oz unpreserved for TS	A	NA		4.6	Y	Absent		TS(7)
L1931803-05E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1931803-05F	Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		NYTCL-8270(14),HOLD-8082(14)
L1931803-05G	Glass 120ml/4oz unpreserved	A	NA		4.6	Y	Absent		NYTCL-8270(14),HOLD-8082(14)
L1931803-06A	Vial MeOH preserved	A	NA		4.6	Y	Absent		NYTCL-8260HLW(14)
L1931803-06B	Vial water preserved	A	NA		4.6	Y	Absent	19-JUL-19 02:37	NYTCL-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1931803-06C	Vial water preserved	A	NA		4.6	Y	Absent	19-JUL-19 02:37	NYTCL-8260HLW(14)
L1931803-06D	Plastic 2oz unpreserved for TS	A	NA		4.6	Y	Absent		TS(7)
L1931803-06E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1931803-06F	Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		NYTCL-8270(14),HOLD-8082(14)
L1931803-06G	Glass 120ml/4oz unpreserved	A	NA		4.6	Y	Absent		NYTCL-8270(14),HOLD-8082(14)
L1931803-07A	Vial MeOH preserved	A	NA		4.6	Y	Absent		NYTCL-8260HLW(14)
L1931803-07B	Vial water preserved	A	NA		4.6	Y	Absent	19-JUL-19 02:37	NYTCL-8260HLW(14)
L1931803-07C	Vial water preserved	A	NA		4.6	Y	Absent	19-JUL-19 02:37	NYTCL-8260HLW(14)
L1931803-07D	Plastic 2oz unpreserved for TS	A	NA		4.6	Y	Absent		TS(7)
L1931803-07E	Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1931803-07F	Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		NYTCL-8270(14),HOLD-8081(14),NYTCL-8082(14)
L1931803-07G	Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		NYTCL-8270(14),HOLD-8081(14),NYTCL-8082(14)
L1931803-07H	Glass 120ml/4oz unpreserved	A	NA		4.6	Y	Absent		NYTCL-8270(14),HOLD-8081(14),NYTCL-8082(14)
L1931803-08A	Vial MeOH preserved	A	NA		4.6	Y	Absent		NYTCL-8260HLW(14)
L1931803-08B	Vial water preserved	A	NA		4.6	Y	Absent	19-JUL-19 02:37	NYTCL-8260HLW(14)
L1931803-08C	Vial water preserved	A	NA		4.6	Y	Absent	19-JUL-19 02:37	NYTCL-8260HLW(14)
L1931803-08D	Plastic 2oz unpreserved for TS	A	NA		4.6	Y	Absent		TS(7)
L1931803-08E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1931803-08F	Glass 60mL/2oz unpreserved	A	NA		4.6	Y	Absent		NYTCL-8270(14)
L1931803-08G	Glass 120ml/4oz unpreserved	A	NA		4.6	Y	Absent		NYTCL-8270(14)

*Values in parentheses indicate holding time in days

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1931803
Report Date: 07/23/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1931803-09A	Amber 250ml unpreserved	A	7	7	4.6	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1931803-09B	Amber 250ml unpreserved	A	7	7	4.6	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1931803-10A	Amber 250ml unpreserved	A	7	7	4.6	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1931803-10B	Amber 250ml unpreserved	A	7	7	4.6	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1931803-11A	Amber 250ml unpreserved	A	7	7	4.6	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1931803-11B	Amber 250ml unpreserved	A	7	7	4.6	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)

*Values in parentheses indicate holding time in days

Project Name:	450 JOHNSON AVE.	**Lab Number:**	L1931803
Project Number:	170588001	**Report Date:**	07/23/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	450 JOHNSON AVE.	**Lab Number:**	L1931803
Project Number:	170588001	**Report Date:**	07/23/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	450 JOHNSON AVE.	**Lab Number:**	L1931803
Project Number:	170588001	**Report Date:**	07/23/19

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 21 of 32

Date Rec'd in Lab: 7/19/19

ALPHA Job #: L1931803

Client Information

Client: Langan
Address: 360 W 31st St.
New York NY 10001
Phone: 212 479 5400
Fax: 212 479 2727
Email: jleung@langan.com

Project Information

Project Name: 450 Johnson Ave
Project Location: Brooklyn NY
Project #: 170588001
(Use Project name as Project #) ☐
Project Manager: Julia Leung
ALPHAQuote #: —

Turn-Around Time

Standard ☐ 24-48 hrs
Rush (only if pre approved) ☒ 10
Due Date:
# of Days:

Deliverables

☐ ASP-A ☒ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information

☐ Same as Client Info
PO # Concur

Regulatory Requirement

☒ NY TOGS ☐ NY Part 375
☒ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:
Metals have been field filtered
Field filtered SVOC bottles for HOLD

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☒ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TCL VOCs	TCL SVOCs (Reanalyze if HOLD)	TCL SVOCs	Dissolved Metals Field Filtered				Sample Specific Comments	Total Bottles
31803-01,09	TMW02	9/7	7/18/19	GW	DC	X	X	X	X					7
-02,10	TMW08	1125	7/18/19	GW	DC	X	X	X	X					7
03-11	DUP02-071819	—	7/18/19	GW	DC	X	X	X	X					8

Container Type	V	A	A	P/A			
Preservative	B	A	A	—/A			

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
Langan	7/18 1514		7/18 1514
	7/18 1904		7/18 1958
	7/19 0005		7/19/19 00:05

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

NEW YORK CHAIN OF CUSTODY

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 2

Date Rec'd in Lab: 7/19/19

ALPHA Job #: L1931803

Client Information

Client: Langan
Address: 368 West 31st St. New York, NY 10001
Phone: 212 479 5400
Fax: 212 479 2727
Email: jleung@langan.com

Project Information

Project Name: 450 Johnson Ave
Project Location: Brooklyn
Project #: 1705880B1
(Use Project name as Project #) ☐
Project Manager: Julia Leung
ALPHAQuote #:

Turn-Around Time

Standard ☐ Due Date:
Rush (only if pre approved) ☒ 24-48 hours # of Days:

Deliverables

☐ ASP-A ☒ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information

☐ Same as Client Info
PO # concur

Regulatory Requirement

☒ NY TOGS ☒ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TCL VOCs	TCL SVOCs	TAL Metals	PCBs	PCBs HOLD	Pesticides			Sample Specific Comments	Total Bottle
31803 -04	SB08_5.0-5.5	1120	7/18/19	S	DC	X	X	X		X					
-05	SB08_14.0-14.5	1110	7/18/19	S	DC	X	X	X		X					
-06	SB12_6.5-7.0	1015	7/18/19	S	DC	X	X	X		X					
-07	~~SB13~~ SB07_4.5-5.0	1500	7/18/19	S	DC	X	X	X	X		X				
-08	SB14_4.5-5.0	1405	7/18/19	S	DC	X	X	X	X		~~X~~ DC				8

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	V	A	A	A	A	A		
Preservative	F	A	A	A	A	A		

Relinquished By:	Date/Time	Received By:	Date/Time
Langan	7/18 1514	Kenneth Jackson AAL	7/18 1514
AAL	7/18 1904	QFC	7/18 1958
QFC	7/19 0005		7/19/19 00:05

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L1931865
Client:	Langan Engineering & Environmental 21 Penn Plaza 360 W. 31st Street, 8th Floor New York, NY 10001-2727
ATTN:	Julia Leung
Phone:	(212) 479-5400
Project Name:	450 JOHNSON AVE.
Project Number:	17058801
Report Date:	07/22/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: 450 JOHNSON AVE.
Project Number: 17058801

Lab Number: L1931865
Report Date: 07/22/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1931865-01	IA01	AIR	BROOKLYN, NY	07/18/19 15:06	07/18/19
L1931865-02	SSV01	SOIL_VAPOR	BROOKLYN, NY	07/18/19 15:07	07/18/19

Project Name:	450 JOHNSON AVE.	**Lab Number:**	L1931865
Project Number:	17058801	**Report Date:**	07/22/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931865
Project Number: 17058801 **Report Date:** 07/22/19

Case Narrative (continued)

Volatile Organics in Air

Canisters were released from the laboratory on July 17, 2019. The canister certification results are provided as an addendum.

L1931865-02: The sample has elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the sample.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Christopher J. Anderson

Title: Technical Director/Representative Date: 07/22/19

AIR

Project Name: 450 JOHNSON AVE.
Project Number: 17058801

Lab Number: L1931865
Report Date: 07/22/19

SAMPLE RESULTS

Lab ID: L1931865-01
Client ID: IA01
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 15:06
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 07/20/19 20:56
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.485	0.200	--	2.40	0.989	--		1
Chloromethane	0.722	0.200	--	1.49	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	1.52	0.200	--	3.36	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	49.5	5.00	--	93.3	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	8.29	1.00	--	19.7	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	5.68	0.500	--	14.0	1.23	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	0.856	0.500	--	2.97	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	0.315	0.200	--	0.981	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	1.17	0.500	--	3.45	1.47	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	0.292	0.200	--	1.43	0.977	--		1
Tetrahydrofuran	5.18	0.500	--	15.3	1.47	--		1

Project Name: 450 JOHNSON AVE.
Project Number: 17058801

Lab Number: L1931865
Report Date: 07/22/19

SAMPLE RESULTS

Lab ID: L1931865-01
Client ID: IA01
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 15:06
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	3.60	0.200	--	12.7	0.705	--		1
Benzene	4.34	0.200	--	13.9	0.639	--		1
Cyclohexane	1.10	0.200	--	3.79	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	1.59	0.200	--	7.43	0.934	--		1
Heptane	1.72	0.200	--	7.05	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	8.47	0.200	--	31.9	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	0.923	0.200	--	4.01	0.869	--		1
p/m-Xylene	3.04	0.400	--	13.2	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	0.412	0.200	--	1.75	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	1.08	0.200	--	4.69	0.869	--		1
4-Ethyltoluene	0.238	0.200	--	1.17	0.983	--		1
1,3,5-Trimethylbenzene	0.383	0.200	--	1.88	0.983	--		1

Project Name: 450 JOHNSON AVE.
Project Number: 17058801

Lab Number: L1931865
Report Date: 07/22/19

SAMPLE RESULTS

Lab ID: L1931865-01
Client ID: IA01
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 15:06
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
1,2,4-Trimethylbenzene	0.663	0.200	--	3.26	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	0.258	0.200	--	1.55	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	94		60-140
Bromochloromethane	95		60-140
chlorobenzene-d5	90		60-140

Project Name: 450 JOHNSON AVE.
Project Number: 17058801
Lab Number: L1931865
Report Date: 07/22/19

SAMPLE RESULTS

Lab ID: L1931865-01
Client ID: IA01
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 15:06
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 07/20/19 20:56
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	0.054	0.020	--	0.295	0.109	--		1
Carbon tetrachloride	0.071	0.020	--	0.447	0.126	--		1
Trichloroethene	0.036	0.020	--	0.193	0.107	--		1
Tetrachloroethene	0.179	0.020	--	1.21	0.136	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-difluorobenzene	97		60-140
bromochloromethane	96		60-140
chlorobenzene-d5	94		60-140

Project Name: 450 JOHNSON AVE.
Project Number: 17058801

Lab Number: L1931865
Report Date: 07/22/19

SAMPLE RESULTS

Lab ID: L1931865-02 D
Client ID: SSV01
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 15:07
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 07/20/19 22:12
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	ND	2.00	--	ND	9.89	--		10
Chloromethane	ND	2.00	--	ND	4.13	--		10
Freon-114	ND	2.00	--	ND	14.0	--		10
Vinyl chloride	ND	2.00	--	ND	5.11	--		10
1,3-Butadiene	ND	2.00	--	ND	4.42	--		10
Bromomethane	ND	2.00	--	ND	7.77	--		10
Chloroethane	ND	2.00	--	ND	5.28	--		10
Ethanol	ND	50.0	--	ND	94.2	--		10
Vinyl bromide	ND	2.00	--	ND	8.74	--		10
Acetone	83.2	10.0	--	198	23.8	--		10
Trichlorofluoromethane	ND	2.00	--	ND	11.2	--		10
Isopropanol	ND	5.00	--	ND	12.3	--		10
1,1-Dichloroethene	ND	2.00	--	ND	7.93	--		10
Tertiary butyl Alcohol	5.00	5.00	--	15.2	15.2	--		10
Methylene chloride	ND	5.00	--	ND	17.4	--		10
3-Chloropropene	ND	2.00	--	ND	6.26	--		10
Carbon disulfide	ND	2.00	--	ND	6.23	--		10
Freon-113	ND	2.00	--	ND	15.3	--		10
trans-1,2-Dichloroethene	ND	2.00	--	ND	7.93	--		10
1,1-Dichloroethane	ND	2.00	--	ND	8.09	--		10
Methyl tert butyl ether	ND	2.00	--	ND	7.21	--		10
2-Butanone	24.2	5.00	--	71.4	14.7	--		10
cis-1,2-Dichloroethene	ND	2.00	--	ND	7.93	--		10

Project Name: 450 JOHNSON AVE.
Project Number: 17058801

Lab Number: L1931865
Report Date: 07/22/19

SAMPLE RESULTS

Lab ID: L1931865-02 D
Client ID: SSV01
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 15:07
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	5.00	--	ND	18.0	--		10
Chloroform	2.02	2.00	--	9.86	9.77	--		10
Tetrahydrofuran	ND	5.00	--	ND	14.7	--		10
1,2-Dichloroethane	ND	2.00	--	ND	8.09	--		10
n-Hexane	65.3	2.00	--	230	7.05	--		10
1,1,1-Trichloroethane	ND	2.00	--	ND	10.9	--		10
Benzene	35.4	2.00	--	113	6.39	--		10
Carbon tetrachloride	ND	2.00	--	ND	12.6	--		10
Cyclohexane	25.2	2.00	--	86.7	6.88	--		10
1,2-Dichloropropane	ND	2.00	--	ND	9.24	--		10
Bromodichloromethane	ND	2.00	--	ND	13.4	--		10
1,4-Dioxane	ND	2.00	--	ND	7.21	--		10
Trichloroethene	ND	2.00	--	ND	10.7	--		10
2,2,4-Trimethylpentane	25.7	2.00	--	120	9.34	--		10
Heptane	108	2.00	--	443	8.20	--		10
cis-1,3-Dichloropropene	ND	2.00	--	ND	9.08	--		10
4-Methyl-2-pentanone	ND	5.00	--	ND	20.5	--		10
trans-1,3-Dichloropropene	ND	2.00	--	ND	9.08	--		10
1,1,2-Trichloroethane	ND	2.00	--	ND	10.9	--		10
Toluene	465	2.00	--	1750	7.54	--		10
2-Hexanone	ND	2.00	--	ND	8.20	--		10
Dibromochloromethane	ND	2.00	--	ND	17.0	--		10
1,2-Dibromoethane	ND	2.00	--	ND	15.4	--		10
Tetrachloroethene	ND	2.00	--	ND	13.6	--		10
Chlorobenzene	ND	2.00	--	ND	9.21	--		10
Ethylbenzene	72.9	2.00	--	317	8.69	--		10

Project Name: 450 JOHNSON AVE.
Project Number: 17058801
Lab Number: L1931865
Report Date: 07/22/19

SAMPLE RESULTS

Lab ID: L1931865-02 D
Client ID: SSV01
Sample Location: BROOKLYN, NY

Date Collected: 07/18/19 15:07
Date Received: 07/18/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
p/m-Xylene	222	4.00	--	964	17.4	--		10
Bromoform	ND	2.00	--	ND	20.7	--		10
Styrene	ND	2.00	--	ND	8.52	--		10
1,1,2,2-Tetrachloroethane	ND	2.00	--	ND	13.7	--		10
o-Xylene	80.5	2.00	--	350	8.69	--		10
4-Ethyltoluene	12.6	2.00	--	61.9	9.83	--		10
1,3,5-Trimethylbenzene	13.2	2.00	--	64.9	9.83	--		10
1,2,4-Trimethylbenzene	40.5	2.00	--	199	9.83	--		10
Benzyl chloride	ND	2.00	--	ND	10.4	--		10
1,3-Dichlorobenzene	ND	2.00	--	ND	12.0	--		10
1,4-Dichlorobenzene	ND	2.00	--	ND	12.0	--		10
1,2-Dichlorobenzene	ND	2.00	--	ND	12.0	--		10
1,2,4-Trichlorobenzene	ND	2.00	--	ND	14.8	--		10
Hexachlorobutadiene	ND	2.00	--	ND	21.3	--		10

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	95		60-140
Bromochloromethane	95		60-140
chlorobenzene-d5	95		60-140

Project Name: 450 JOHNSON AVE.
Project Number: 17058801
Lab Number: L1931865
Report Date: 07/22/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 07/20/19 14:52

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-02 Batch: WG1262520-4								
Propylene	ND	0.500	--	ND	0.861	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1931865

Project Number: 17058801 **Report Date:** 07/22/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 07/20/19 14:52

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-02 Batch: WG1262520-4								
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1

Project Name: 450 JOHNSON AVE.
Project Number: 17058801
Lab Number: L1931865
Report Date: 07/22/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 07/20/19 14:52

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-02 Batch: WG1262520-4								
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: 450 JOHNSON AVE.
Project Number: 17058801
Lab Number: L1931865
Report Date: 07/22/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15-SIM
Analytical Date: 07/20/19 15:31

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 01 Batch: WG1262521-4								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 17058801

Lab Number: L1931865
Report Date: 07/22/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 Batch: WG1262520-3								
Propylene	102		-		70-130	-		
Dichlorodifluoromethane	92		-		70-130	-		
Chloromethane	98		-		70-130	-		
Freon-114	98		-		70-130	-		
Vinyl chloride	88		-		70-130	-		
1,3-Butadiene	104		-		70-130	-		
Bromomethane	93		-		70-130	-		
Chloroethane	87		-		70-130	-		
Ethanol	95		-		40-160	-		
Vinyl bromide	89		-		70-130	-		
Acetone	72		-		40-160	-		
Trichlorofluoromethane	85		-		70-130	-		
Isopropanol	80		-		40-160	-		
1,1-Dichloroethene	87		-		70-130	-		
Tertiary butyl Alcohol	86		-		70-130	-		
Methylene chloride	102		-		70-130	-		
3-Chloropropene	93		-		70-130	-		
Carbon disulfide	90		-		70-130	-		
Freon-113	89		-		70-130	-		
trans-1,2-Dichloroethene	84		-		70-130	-		
1,1-Dichloroethane	86		-		70-130	-		
Methyl tert butyl ether	92		-		70-130	-		
Vinyl acetate	94		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.

Project Number: 17058801

Lab Number: L1931865

Report Date: 07/22/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 Batch: WG1262520-3								
2-Butanone	90		-		70-130	-		
cis-1,2-Dichloroethene	87		-		70-130	-		
Ethyl Acetate	83		-		70-130	-		
Chloroform	92		-		70-130	-		
Tetrahydrofuran	93		-		70-130	-		
1,2-Dichloroethane	81		-		70-130	-		
n-Hexane	91		-		70-130	-		
1,1,1-Trichloroethane	90		-		70-130	-		
Benzene	99		-		70-130	-		
Carbon tetrachloride	102		-		70-130	-		
Cyclohexane	89		-		70-130	-		
1,2-Dichloropropane	90		-		70-130	-		
Bromodichloromethane	98		-		70-130	-		
1,4-Dioxane	93		-		70-130	-		
Trichloroethene	90		-		70-130	-		
2,2,4-Trimethylpentane	96		-		70-130	-		
Heptane	109		-		70-130	-		
cis-1,3-Dichloropropene	114		-		70-130	-		
4-Methyl-2-pentanone	110		-		70-130	-		
trans-1,3-Dichloropropene	98		-		70-130	-		
1,1,2-Trichloroethane	92		-		70-130	-		
Toluene	95		-		70-130	-		
2-Hexanone	119		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.

Project Number: 17058801

Lab Number: L1931865

Report Date: 07/22/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-02 Batch: WG1262520-3								
Dibromochloromethane	102		-		70-130	-		
1,2-Dibromoethane	108		-		70-130	-		
Tetrachloroethene	104		-		70-130	-		
Chlorobenzene	110		-		70-130	-		
Ethylbenzene	96		-		70-130	-		
p/m-Xylene	99		-		70-130	-		
Bromoform	106		-		70-130	-		
Styrene	108		-		70-130	-		
1,1,2,2-Tetrachloroethane	108		-		70-130	-		
o-Xylene	103		-		70-130	-		
4-Ethyltoluene	108		-		70-130	-		
1,3,5-Trimethylbenzene	109		-		70-130	-		
1,2,4-Trimethylbenzene	113		-		70-130	-		
Benzyl chloride	104		-		70-130	-		
1,3-Dichlorobenzene	110		-		70-130	-		
1,4-Dichlorobenzene	107		-		70-130	-		
1,2-Dichlorobenzene	109		-		70-130	-		
1,2,4-Trichlorobenzene	117		-		70-130	-		
Hexachlorobutadiene	116		-		70-130	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE.

Project Number: 17058801

Lab Number: L1931865

Report Date: 07/22/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 01 Batch: WG1262521-3								
Vinyl chloride	84		-		70-130	-		25
1,1-Dichloroethene	84		-		70-130	-		25
cis-1,2-Dichloroethene	82		-		70-130	-		25
1,1,1-Trichloroethane	88		-		70-130	-		25
Carbon tetrachloride	98		-		70-130	-		25
Trichloroethene	81		-		70-130	-		25
Tetrachloroethene	103		-		70-130	-		25

Project Name: 450 JOHNSON AVE.

Lab Number: L1931865

Project Number: 17058801

Report Date: 07/22/19

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controler Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1931865-01	IA01	0702	Flow 5	07/17/19	297202		-	-	-	Pass	4.5	5.2	14
L1931865-01	IA01	2793	2.7L Can	07/17/19	297202	L1930221-06	Pass	-29.5	-9.1	-	-	-	-
L1931865-02	SSV01	0959	Flow 5	07/17/19	297202		-	-	-	Pass	4.5	4.6	2
L1931865-02	SSV01	2037	2.7L Can	07/17/19	297202	L1930221-06	Pass	-29.5	-8.9	-	-	-	-

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1930221
Report Date: 07/22/19

Air Canister Certification Results

Lab ID: L1930221-06
Client ID: CAN 453 SHELF 10
Sample Location:

Date Collected: 06/11/19 09:00
Date Received: 07/11/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 07/11/19 21:44
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1930221
Report Date: 07/22/19

Air Canister Certification Results

Lab ID: L1930221-06
Client ID: CAN 453 SHELF 10
Sample Location:

Date Collected: 06/11/19 09:00
Date Received: 07/11/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Xylenes, total	ND	0.600	--	ND	0.869	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	1.00	--	ND	1.00	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1930221
Report Date: 07/22/19

Air Canister Certification Results

Lab ID: L1930221-06
Client ID: CAN 453 SHELF 10
Sample Location:

Date Collected: 06/11/19 09:00
Date Received: 07/11/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1930221
Report Date: 07/22/19

Air Canister Certification Results

Lab ID: L1930221-06
Client ID: CAN 453 SHELF 10
Sample Location:

Date Collected: 06/11/19 09:00
Date Received: 07/11/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1930221
Report Date: 07/22/19

Air Canister Certification Results

Lab ID: L1930221-06
Client ID: CAN 453 SHELF 10
Sample Location:

Date Collected: 06/11/19 09:00
Date Received: 07/11/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	99		60-140
Bromochloromethane	99		60-140
chlorobenzene-d5	101		60-140

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1930221
Report Date: 07/22/19

Air Canister Certification Results

Lab ID: L1930221-06
Client ID: CAN 453 SHELF 10
Sample Location:

Date Collected: 06/11/19 09:00
Date Received: 07/11/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 07/11/19 21:44
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1930221
Report Date: 07/22/19

Air Canister Certification Results

Lab ID: L1930221-06
Client ID: CAN 453 SHELF 10
Sample Location:

Date Collected: 06/11/19 09:00
Date Received: 07/11/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1930221
Report Date: 07/22/19

Air Canister Certification Results

Lab ID: L1930221-06
Client ID: CAN 453 SHELF 10
Sample Location:

Date Collected: 06/11/19 09:00
Date Received: 07/11/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	98		60-140
bromochloromethane	99		60-140
chlorobenzene-d5	102		60-140

Project Name: 450 JOHNSON AVE.
Project Number: 17058801

Lab Number: L1931865
Report Date: 07/22/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
N/A	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1931865-01A	Canister - 2.7 Liter	N/A	NA			Y	Absent		TO15-LL(30),TO15-SIM(30)
L1931865-02A	Canister - 6 Liter	N/A	NA			Y	Absent		TO15-LL(30)

*Values in parentheses indicate holding time in days

Project Name:	450 JOHNSON AVE.	**Lab Number:**	L1931865
Project Number:	17058801	**Report Date:**	07/22/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: Data Usability Report

Project Name:	450 JOHNSON AVE.	**Lab Number:**	L1931865
Project Number:	17058801	**Report Date:**	07/22/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the reporting limit (RL) for the sample.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: Data Usability Report

REFERENCES

48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

AIR ANALYSIS

PAGE 1 OF 3

CHAIN OF CUSTODY

320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 7/19/19

ALPHA Job #: L1931865

Client Information

Client: Langan
Address: 360 W 31st Street
NY, NY 10001
Phone: 212 479 5460
Fax: 212 479 2727
Email: jleung@langan.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: 490 Johnson Ave
Project Location: Brooklyn, NY
Project #: 170558501
Project Manager: Julia Leung
ALPHA Quote #:

Turn-Around Time

☐ Standard ☒ RUSH (only confirmed if pre-approved!)
Date Due: 24-48 hours Time:

Report Information - Data Deliverables

☐ FAX
☐ ADEx
Criteria Checker:
(Default based on Regulatory Criteria Indicated)
Other Formats:
☒ EMAIL (standard pdf report)
☐ Additional Deliverables:
Report to: (if different than Project Manager)

Billing Information

☐ Same as Client Info PO #:
Concur

Regulatory Requirements/Report Limits

State/Fed	Program	Res / Comm

Other Project Specific Requirements/Comments:

Project-Specific Target Compound List: ☐

All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	COLLECTION End Date	Start Time	End Time	Initial Vacuum	Final Vacuum	Sample Matrix*	Sampler's Initials	Can Size	I D Can	I D - Flow Controller	TO-15	TO-15 SIM	APH (subtract non-petroleum HCs ☐)	Fixed Gases	Sulfides & Mercaptans by TO-15	Sample Comments (i.e. PID)
31865.01	IA01	7/18/19	0816	1506	-29.94	9.16	IA	DC	2.7	2793	0702	X					2.7 liter
.02	SSV01	7/18/19	0817	1507	-30.47	-8.49	SV	DC	2.7	2037	0957	X					2.7 liter

*SAMPLE MATRIX CODES

AA = Ambient Air (Indoor/Outdoor)
SV = Soil Vapor/Landfill Gas/SVE
Other = Please Specify

Container Type

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

Relinquished By:	Date/Time	Received By:	Date/Time:
Langan	7/18 1514	Remek Jackson AAL	7/18 1514
	7/18 1904		7/18 2145
7/19 0130			7/19/19 0130

Form No: 101-02 Rev (25-Sep-15)

ANALYTICAL REPORT

Lab Number:	L1932118
Client:	Langan Engineering & Environmental 21 Penn Plaza 360 W. 31st Street, 8th Floor New York, NY 10001-2727
ATTN:	Julia Leung
Phone:	(212) 479-5400
Project Name:	450 JOHNSON AVE
Project Number:	170588001
Report Date:	08/06/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

Eight Walkup Drive, Westborough, MA 01581-1019
508-898-9220 (Fax) 508-898-9193 800-624-9220 - www.alphalab.com

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1932118-01	SB15_8.0-8.5	SOIL	BROOKLYN	07/19/19 11:20	07/19/19
L1932118-02	SB10_10.5-11.0	SOIL	BROOKLYN	07/19/19 09:50	07/19/19
L1932118-03	SB10_5.0-5.5	SOIL	BROOKLYN	07/19/19 09:40	07/19/19
L1932118-04	SB16_3.0-3.5	SOIL	BROOKLYN	07/19/19 12:15	07/19/19
L1932118-05	SB17_13.0-13.5	SOIL	BROOKLYN	07/19/19 13:20	07/19/19
L1932118-06	SB18_4.0-4.5	SOIL	BROOKLYN	07/19/19 14:00	07/19/19
L1932118-07	TMW07_071919	WATER	BROOKLYN	07/19/19 09:00	07/19/19
L1932118-08	TMW07_071919 (FIELD FILTERED)	WATER	BROOKLYN	07/19/19 09:00	07/19/19
L1932118-09	TB_071919	WATER	BROOKLYN	07/16/19 00:00	07/19/19
L1932118-10	DISPOSAL	WATER	BROOKLYN	07/19/19 09:00	07/19/19

Project Name:	450 JOHNSON AVE	**Lab Number:**	L1932118
Project Number:	170588001	**Report Date:**	08/06/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	450 JOHNSON AVE	**Lab Number:**	L1932118
Project Number:	170588001	**Report Date:**	08/06/19

Case Narrative (continued)

Report Submission

August 06, 2019: This final report includes the results of all requested analyses.

July 24, 2019: This is a preliminary report.

All non-detect (ND) or estimated concentrations (J-qualified) have been quantitated to the limit noted in the MDL column.

Sample Receipt

L1932118-08: The sample was received above the appropriate pH for the Dissolved Metals analysis. The laboratory added HNO3 to a pH <2.

L1932118-09: A sample identified as "TB_071919" was received but not listed on the Chain of Custody. At the client's request, this sample was analyzed.

L1932118-10: A sample identified as "DISPOSAL" was received but not listed on the Chain of Custody. This sample was not analyzed.

Volatile Organics

L1932118-04: The sample has elevated detection limits due to the dilution required by the elevated concentrations of non-target compounds in the sample.

Semivolatile Organics

L1932118-03: The sample has elevated detection limits due to the limited sample volume utilized during extraction, as required by the sample matrix.

The WG1262491-2 LCS recovery, associated with L1932118-01, -03, -04, -05, and -06, is below the acceptance criteria for benzoic acid (0%); however, it has been identified as a "difficult" analyte. The results of the associated samples are reported.

Total Metals

Project Name:	450 JOHNSON AVE	**Lab Number:**	L1932118
Project Number:	170588001	**Report Date:**	08/06/19

Case Narrative (continued)

L1932118-01, 03, -04, -05 and -06: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by matrix interferences encountered during analysis.
The WG1262372-1 Method Blank, associated with L1932118-01, -03, -04, -05, and -06, has a concentration above the reporting limit for manganese. Since the associated sample concentrations are greater than 10x the blank concentration for this analyte, no corrective action is required.

Dissolved Metals
L1932118-08: The sample has an elevated detection limit for mercury due to the dilution required by the limited sample volume available for analysis.
The WG1262423-3 MS recovery, performed on L1932118-08, is outside the acceptance criteria for antimony (132%). A post digestion spike was performed and was within acceptance criteria.
The WG1262423-4 Laboratory Duplicate RPDs for copper (31%), lead (49%) and nickel (31%), performed on L1932118-08, are above the acceptance criteria; however, the sample and duplicate results are less than five times the reporting limits. Therefore, the RPDs are valid.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Lisa Westerlind

Title: Technical Director/Representative Date: 08/06/19

ORGANICS

VOLATILES

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-01
Client ID: SB15_8.0-8.5
Sample Location: BROOKLYN
Date Collected: 07/19/19 11:20
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/22/19 15:45
Analyst: JC
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.2	2.4	1
1,1-Dichloroethane	ND		ug/kg	1.0	0.15	1
Chloroform	ND		ug/kg	1.6	0.14	1
Carbon tetrachloride	ND		ug/kg	1.0	0.24	1
1,2-Dichloropropane	ND		ug/kg	1.0	0.13	1
Dibromochloromethane	ND		ug/kg	1.0	0.14	1
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.28	1
Tetrachloroethene	ND		ug/kg	0.52	0.20	1
Chlorobenzene	ND		ug/kg	0.52	0.13	1
Trichlorofluoromethane	ND		ug/kg	4.1	0.72	1
1,2-Dichloroethane	ND		ug/kg	1.0	0.27	1
1,1,1-Trichloroethane	ND		ug/kg	0.52	0.17	1
Bromodichloromethane	ND		ug/kg	0.52	0.11	1
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.28	1
cis-1,3-Dichloropropene	ND		ug/kg	0.52	0.16	1
1,3-Dichloropropene, Total	ND		ug/kg	0.52	0.16	1
1,1-Dichloropropene	ND		ug/kg	0.52	0.16	1
Bromoform	ND		ug/kg	4.1	0.25	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.52	0.17	1
Benzene	ND		ug/kg	0.52	0.17	1
Toluene	ND		ug/kg	1.0	0.56	1
Ethylbenzene	ND		ug/kg	1.0	0.14	1
Chloromethane	ND		ug/kg	4.1	0.96	1
Bromomethane	ND		ug/kg	2.1	0.60	1
Vinyl chloride	ND		ug/kg	1.0	0.35	1
Chloroethane	ND		ug/kg	2.1	0.47	1
1,1-Dichloroethene	ND		ug/kg	1.0	0.25	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	0.14	1

Project Name: 450 JOHNSON AVE **Lab Number:** L1932118

Project Number: 170588001 **Report Date:** 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-01 Date Collected: 07/19/19 11:20

Client ID: SB15_8.0-8.5 Date Received: 07/19/19

Sample Location: BROOKLYN Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.52	0.14	1
1,2-Dichlorobenzene	ND		ug/kg	2.1	0.15	1
1,3-Dichlorobenzene	ND		ug/kg	2.1	0.15	1
1,4-Dichlorobenzene	ND		ug/kg	2.1	0.18	1
Methyl tert butyl ether	0.27	J	ug/kg	2.1	0.21	1
p/m-Xylene	ND		ug/kg	2.1	0.58	1
o-Xylene	ND		ug/kg	1.0	0.30	1
Xylenes, Total	ND		ug/kg	1.0	0.30	1
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18	1
1,2-Dichloroethene, Total	ND		ug/kg	1.0	0.14	1
Dibromomethane	ND		ug/kg	2.1	0.25	1
Styrene	ND		ug/kg	1.0	0.20	1
Dichlorodifluoromethane	ND		ug/kg	10	0.95	1
Acetone	45		ug/kg	10	5.0	1
Carbon disulfide	ND		ug/kg	10	4.7	1
2-Butanone	ND		ug/kg	10	2.3	1
Vinyl acetate	ND		ug/kg	10	2.2	1
4-Methyl-2-pentanone	ND		ug/kg	10	1.3	1
1,2,3-Trichloropropane	ND		ug/kg	2.1	0.13	1
2-Hexanone	ND		ug/kg	10	1.2	1
Bromochloromethane	ND		ug/kg	2.1	0.21	1
2,2-Dichloropropane	ND		ug/kg	2.1	0.21	1
1,2-Dibromoethane	ND		ug/kg	1.0	0.29	1
1,3-Dichloropropane	ND		ug/kg	2.1	0.17	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.52	0.14	1
Bromobenzene	ND		ug/kg	2.1	0.15	1
n-Butylbenzene	ND		ug/kg	1.0	0.17	1
sec-Butylbenzene	ND		ug/kg	1.0	0.15	1
tert-Butylbenzene	ND		ug/kg	2.1	0.12	1
o-Chlorotoluene	ND		ug/kg	2.1	0.20	1
p-Chlorotoluene	ND		ug/kg	2.1	0.11	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.1	1.0	1
Hexachlorobutadiene	ND		ug/kg	4.1	0.17	1
Isopropylbenzene	ND		ug/kg	1.0	0.11	1
p-Isopropyltoluene	ND		ug/kg	1.0	0.11	1
Naphthalene	ND		ug/kg	4.1	0.67	1
Acrylonitrile	ND		ug/kg	4.1	1.2	1

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-01
Client ID: SB15_8.0-8.5
Sample Location: BROOKLYN
Date Collected: 07/19/19 11:20
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.0	0.18	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.1	0.33	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.1	0.28	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.1	0.20	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.1	0.34	1
1,4-Dioxane	ND		ug/kg	83	36.	1
p-Diethylbenzene	ND		ug/kg	2.1	0.18	1
p-Ethyltoluene	ND		ug/kg	2.1	0.40	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.1	0.20	1
Ethyl ether	ND		ug/kg	2.1	0.35	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.2	1.5	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	118		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	98		70-130

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-03
Client ID: SB10_5.0-5.5
Sample Location: BROOKLYN
Date Collected: 07/19/19 09:40
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/21/19 16:31
Analyst: JC
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	9.9	4.6	1
1,1-Dichloroethane	ND		ug/kg	2.0	0.29	1
Chloroform	ND		ug/kg	3.0	0.28	1
Carbon tetrachloride	ND		ug/kg	2.0	0.46	1
1,2-Dichloropropane	ND		ug/kg	2.0	0.25	1
Dibromochloromethane	ND		ug/kg	2.0	0.28	1
1,1,2-Trichloroethane	ND		ug/kg	2.0	0.53	1
Tetrachloroethene	ND		ug/kg	0.99	0.39	1
Chlorobenzene	ND		ug/kg	0.99	0.25	1
Trichlorofluoromethane	ND		ug/kg	8.0	1.4	1
1,2-Dichloroethane	ND		ug/kg	2.0	0.51	1
1,1,1-Trichloroethane	ND		ug/kg	0.99	0.33	1
Bromodichloromethane	ND		ug/kg	0.99	0.22	1
trans-1,3-Dichloropropene	ND		ug/kg	2.0	0.54	1
cis-1,3-Dichloropropene	ND		ug/kg	0.99	0.31	1
1,3-Dichloropropene, Total	ND		ug/kg	0.99	0.31	1
1,1-Dichloropropene	ND		ug/kg	0.99	0.32	1
Bromoform	ND		ug/kg	8.0	0.49	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.99	0.33	1
Benzene	ND		ug/kg	0.99	0.33	1
Toluene	ND		ug/kg	2.0	1.1	1
Ethylbenzene	ND		ug/kg	2.0	0.28	1
Chloromethane	1.8	J	ug/kg	8.0	1.8	1
Bromomethane	ND		ug/kg	4.0	1.2	1
Vinyl chloride	ND		ug/kg	2.0	0.66	1
Chloroethane	ND		ug/kg	4.0	0.90	1
1,1-Dichloroethene	ND		ug/kg	2.0	0.47	1
trans-1,2-Dichloroethene	ND		ug/kg	3.0	0.27	1

Project Name: 450 JOHNSON AVE **Lab Number:** L1932118

Project Number: 170588001 **Report Date:** 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-03 Date Collected: 07/19/19 09:40

Client ID: SB10_5.0-5.5 Date Received: 07/19/19

Sample Location: BROOKLYN Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.99	0.27	1
1,2-Dichlorobenzene	ND		ug/kg	4.0	0.29	1
1,3-Dichlorobenzene	ND		ug/kg	4.0	0.29	1
1,4-Dichlorobenzene	ND		ug/kg	4.0	0.34	1
Methyl tert butyl ether	0.45	J	ug/kg	4.0	0.40	1
p/m-Xylene	ND		ug/kg	4.0	1.1	1
o-Xylene	ND		ug/kg	2.0	0.58	1
Xylenes, Total	ND		ug/kg	2.0	0.58	1
cis-1,2-Dichloroethene	ND		ug/kg	2.0	0.35	1
1,2-Dichloroethene, Total	ND		ug/kg	2.0	0.27	1
Dibromomethane	ND		ug/kg	4.0	0.47	1
Styrene	ND		ug/kg	2.0	0.39	1
Dichlorodifluoromethane	ND		ug/kg	20	1.8	1
Acetone	38		ug/kg	20	9.6	1
Carbon disulfide	ND		ug/kg	20	9.0	1
2-Butanone	ND		ug/kg	20	4.4	1
Vinyl acetate	ND		ug/kg	20	4.3	1
4-Methyl-2-pentanone	ND		ug/kg	20	2.5	1
1,2,3-Trichloropropane	ND		ug/kg	4.0	0.25	1
2-Hexanone	ND		ug/kg	20	2.3	1
Bromochloromethane	ND		ug/kg	4.0	0.41	1
2,2-Dichloropropane	ND		ug/kg	4.0	0.40	1
1,2-Dibromoethane	ND		ug/kg	2.0	0.55	1
1,3-Dichloropropane	ND		ug/kg	4.0	0.33	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.99	0.26	1
Bromobenzene	ND		ug/kg	4.0	0.29	1
n-Butylbenzene	ND		ug/kg	2.0	0.33	1
sec-Butylbenzene	ND		ug/kg	2.0	0.29	1
tert-Butylbenzene	ND		ug/kg	4.0	0.23	1
o-Chlorotoluene	ND		ug/kg	4.0	0.38	1
p-Chlorotoluene	ND		ug/kg	4.0	0.21	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	6.0	2.0	1
Hexachlorobutadiene	ND		ug/kg	8.0	0.34	1
Isopropylbenzene	ND		ug/kg	2.0	0.22	1
p-Isopropyltoluene	ND		ug/kg	2.0	0.22	1
Naphthalene	ND		ug/kg	8.0	1.3	1
Acrylonitrile	ND		ug/kg	8.0	2.3	1

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-03
Client ID: SB10_5.0-5.5
Sample Location: BROOKLYN
Date Collected: 07/19/19 09:40
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	2.0	0.34	1
1,2,3-Trichlorobenzene	ND		ug/kg	4.0	0.64	1
1,2,4-Trichlorobenzene	ND		ug/kg	4.0	0.54	1
1,3,5-Trimethylbenzene	ND		ug/kg	4.0	0.38	1
1,2,4-Trimethylbenzene	ND		ug/kg	4.0	0.66	1
1,4-Dioxane	ND		ug/kg	160	70.	1
p-Diethylbenzene	ND		ug/kg	4.0	0.35	1
p-Ethyltoluene	ND		ug/kg	4.0	0.76	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	4.0	0.38	1
Ethyl ether	ND		ug/kg	4.0	0.68	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	9.9	2.8	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	101		70-130

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-04 D
Client ID: SB16_3.0-3.5
Sample Location: BROOKLYN
Date Collected: 07/19/19 12:15
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/21/19 19:57
Analyst: MV
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Methylene chloride	ND		ug/kg	3400	1600	10
1,1-Dichloroethane	ND		ug/kg	680	99.	10
Chloroform	ND		ug/kg	1000	96.	10
Carbon tetrachloride	ND		ug/kg	680	160	10
1,2-Dichloropropane	ND		ug/kg	680	86.	10
Dibromochloromethane	ND		ug/kg	680	96.	10
1,1,2-Trichloroethane	ND		ug/kg	680	180	10
Tetrachloroethene	ND		ug/kg	340	130	10
Chlorobenzene	ND		ug/kg	340	87.	10
Trichlorofluoromethane	ND		ug/kg	2700	480	10
1,2-Dichloroethane	ND		ug/kg	680	180	10
1,1,1-Trichloroethane	ND		ug/kg	340	110	10
Bromodichloromethane	ND		ug/kg	340	75.	10
trans-1,3-Dichloropropene	ND		ug/kg	680	190	10
cis-1,3-Dichloropropene	ND		ug/kg	340	110	10
1,3-Dichloropropene, Total	ND		ug/kg	340	110	10
1,1-Dichloropropene	ND		ug/kg	340	110	10
Bromoform	ND		ug/kg	2700	170	10
1,1,2,2-Tetrachloroethane	ND		ug/kg	340	110	10
Benzene	ND		ug/kg	340	110	10
Toluene	ND		ug/kg	680	370	10
Ethylbenzene	780		ug/kg	680	97.	10
Chloromethane	ND		ug/kg	2700	640	10
Bromomethane	ND		ug/kg	1400	400	10
Vinyl chloride	ND		ug/kg	680	230	10
Chloroethane	ND		ug/kg	1400	310	10
1,1-Dichloroethene	ND		ug/kg	680	160	10
trans-1,2-Dichloroethene	ND		ug/kg	1000	94.	10

Project Name: 450 JOHNSON AVE **Lab Number:** L1932118

Project Number: 170588001 **Report Date:** 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-04 D Date Collected: 07/19/19 12:15
Client ID: SB16_3.0-3.5 Date Received: 07/19/19
Sample Location: BROOKLYN Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
Trichloroethene	ND		ug/kg	340	94.	10
1,2-Dichlorobenzene	ND		ug/kg	1400	99.	10
1,3-Dichlorobenzene	ND		ug/kg	1400	100	10
1,4-Dichlorobenzene	ND		ug/kg	1400	120	10
Methyl tert butyl ether	ND		ug/kg	1400	140	10
p/m-Xylene	ND		ug/kg	1400	380	10
o-Xylene	ND		ug/kg	680	200	10
Xylenes, Total	ND		ug/kg	680	200	10
cis-1,2-Dichloroethene	ND		ug/kg	680	120	10
1,2-Dichloroethene, Total	ND		ug/kg	680	94.	10
Dibromomethane	ND		ug/kg	1400	160	10
Styrene	ND		ug/kg	680	130	10
Dichlorodifluoromethane	ND		ug/kg	6800	630	10
Acetone	ND		ug/kg	6800	3300	10
Carbon disulfide	ND		ug/kg	6800	3100	10
2-Butanone	ND		ug/kg	6800	1500	10
Vinyl acetate	ND		ug/kg	6800	1500	10
4-Methyl-2-pentanone	ND		ug/kg	6800	880	10
1,2,3-Trichloropropane	ND		ug/kg	1400	87.	10
2-Hexanone	ND		ug/kg	6800	810	10
Bromochloromethane	ND		ug/kg	1400	140	10
2,2-Dichloropropane	ND		ug/kg	1400	140	10
1,2-Dibromoethane	ND		ug/kg	680	190	10
1,3-Dichloropropane	ND		ug/kg	1400	110	10
1,1,1,2-Tetrachloroethane	ND		ug/kg	340	90.	10
Bromobenzene	ND		ug/kg	1400	99.	10
n-Butylbenzene	6500		ug/kg	680	110	10
sec-Butylbenzene	4000		ug/kg	680	100	10
tert-Butylbenzene	250	J	ug/kg	1400	81.	10
o-Chlorotoluene	ND		ug/kg	1400	130	10
p-Chlorotoluene	ND		ug/kg	1400	74.	10
1,2-Dibromo-3-chloropropane	ND		ug/kg	2000	680	10
Hexachlorobutadiene	ND		ug/kg	2700	120	10
Isopropylbenzene	280	J	ug/kg	680	75.	10
p-Isopropyltoluene	140	J	ug/kg	680	75.	10
Naphthalene	2100	J	ug/kg	2700	440	10
Acrylonitrile	ND		ug/kg	2700	790	10

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-04 D
Client ID: SB16_3.0-3.5
Sample Location: BROOKLYN
Date Collected: 07/19/19 12:15
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High - Westborough Lab						
n-Propylbenzene	1400		ug/kg	680	120	10
1,2,3-Trichlorobenzene	ND		ug/kg	1400	220	10
1,2,4-Trichlorobenzene	ND		ug/kg	1400	190	10
1,3,5-Trimethylbenzene	200	J	ug/kg	1400	130	10
1,2,4-Trimethylbenzene	910	J	ug/kg	1400	230	10
1,4-Dioxane	ND		ug/kg	55000	24000	10
p-Diethylbenzene	4600		ug/kg	1400	120	10
p-Ethyltoluene	850	J	ug/kg	1400	260	10
1,2,4,5-Tetramethylbenzene	7800		ug/kg	1400	130	10
Ethyl ether	ND		ug/kg	1400	230	10
trans-1,4-Dichloro-2-butene	ND		ug/kg	3400	970	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	89		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	124		70-130
Dibromofluoromethane	96		70-130

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-05
Client ID: SB17_13.0-13.5
Sample Location: BROOKLYN
Date Collected: 07/19/19 13:20
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/21/19 16:57
Analyst: JC
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	6.2	2.8	1
1,1-Dichloroethane	ND		ug/kg	1.2	0.18	1
Chloroform	ND		ug/kg	1.9	0.17	1
Carbon tetrachloride	ND		ug/kg	1.2	0.29	1
1,2-Dichloropropane	ND		ug/kg	1.2	0.16	1
Dibromochloromethane	ND		ug/kg	1.2	0.17	1
1,1,2-Trichloroethane	ND		ug/kg	1.2	0.33	1
Tetrachloroethene	ND		ug/kg	0.62	0.24	1
Chlorobenzene	ND		ug/kg	0.62	0.16	1
Trichlorofluoromethane	ND		ug/kg	5.0	0.86	1
1,2-Dichloroethane	ND		ug/kg	1.2	0.32	1
1,1,1-Trichloroethane	ND		ug/kg	0.62	0.21	1
Bromodichloromethane	ND		ug/kg	0.62	0.14	1
trans-1,3-Dichloropropene	ND		ug/kg	1.2	0.34	1
cis-1,3-Dichloropropene	ND		ug/kg	0.62	0.20	1
1,3-Dichloropropene, Total	ND		ug/kg	0.62	0.20	1
1,1-Dichloropropene	ND		ug/kg	0.62	0.20	1
Bromoform	ND		ug/kg	5.0	0.31	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.62	0.21	1
Benzene	0.33	J	ug/kg	0.62	0.21	1
Toluene	ND		ug/kg	1.2	0.68	1
Ethylbenzene	ND		ug/kg	1.2	0.18	1
Chloromethane	2.4	J	ug/kg	5.0	1.2	1
Bromomethane	ND		ug/kg	2.5	0.72	1
Vinyl chloride	ND		ug/kg	1.2	0.42	1
Chloroethane	ND		ug/kg	2.5	0.56	1
1,1-Dichloroethene	ND		ug/kg	1.2	0.30	1
trans-1,2-Dichloroethene	ND		ug/kg	1.9	0.17	1

Project Name: 450 JOHNSON AVE **Lab Number:** L1932118

Project Number: 170588001 **Report Date:** 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-05 Date Collected: 07/19/19 13:20

Client ID: SB17_13.0-13.5 Date Received: 07/19/19

Sample Location: BROOKLYN Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.62	0.17	1
1,2-Dichlorobenzene	ND		ug/kg	2.5	0.18	1
1,3-Dichlorobenzene	ND		ug/kg	2.5	0.18	1
1,4-Dichlorobenzene	ND		ug/kg	2.5	0.21	1
Methyl tert butyl ether	ND		ug/kg	2.5	0.25	1
p/m-Xylene	ND		ug/kg	2.5	0.70	1
o-Xylene	ND		ug/kg	1.2	0.36	1
Xylenes, Total	ND		ug/kg	1.2	0.36	1
cis-1,2-Dichloroethene	ND		ug/kg	1.2	0.22	1
1,2-Dichloroethene, Total	ND		ug/kg	1.2	0.17	1
Dibromomethane	ND		ug/kg	2.5	0.30	1
Styrene	ND		ug/kg	1.2	0.24	1
Dichlorodifluoromethane	ND		ug/kg	12	1.1	1
Acetone	7.4	J	ug/kg	12	6.0	1
Carbon disulfide	ND		ug/kg	12	5.7	1
2-Butanone	ND		ug/kg	12	2.8	1
Vinyl acetate	ND		ug/kg	12	2.7	1
4-Methyl-2-pentanone	ND		ug/kg	12	1.6	1
1,2,3-Trichloropropane	ND		ug/kg	2.5	0.16	1
2-Hexanone	ND		ug/kg	12	1.5	1
Bromochloromethane	ND		ug/kg	2.5	0.26	1
2,2-Dichloropropane	ND		ug/kg	2.5	0.25	1
1,2-Dibromoethane	ND		ug/kg	1.2	0.35	1
1,3-Dichloropropane	ND		ug/kg	2.5	0.21	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.62	0.16	1
Bromobenzene	ND		ug/kg	2.5	0.18	1
n-Butylbenzene	ND		ug/kg	1.2	0.21	1
sec-Butylbenzene	ND		ug/kg	1.2	0.18	1
tert-Butylbenzene	ND		ug/kg	2.5	0.15	1
o-Chlorotoluene	ND		ug/kg	2.5	0.24	1
p-Chlorotoluene	ND		ug/kg	2.5	0.13	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.7	1.2	1
Hexachlorobutadiene	ND		ug/kg	5.0	0.21	1
Isopropylbenzene	ND		ug/kg	1.2	0.14	1
p-Isopropyltoluene	ND		ug/kg	1.2	0.14	1
Naphthalene	ND		ug/kg	5.0	0.81	1
Acrylonitrile	ND		ug/kg	5.0	1.4	1

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-05
Client ID: SB17_13.0-13.5
Sample Location: BROOKLYN
Date Collected: 07/19/19 13:20
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.2	0.21	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.5	0.40	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.5	0.34	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.5	0.24	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.5	0.42	1
1,4-Dioxane	ND		ug/kg	100	44.	1
p-Diethylbenzene	ND		ug/kg	2.5	0.22	1
p-Ethyltoluene	ND		ug/kg	2.5	0.48	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.5	0.24	1
Ethyl ether	ND		ug/kg	2.5	0.42	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	6.2	1.8	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	113		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	119		70-130
Dibromofluoromethane	99		70-130

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-06
Client ID: SB18_4.0-4.5
Sample Location: BROOKLYN
Date Collected: 07/19/19 14:00
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260C
Analytical Date: 07/21/19 17:23
Analyst: JC
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	6.2	2.9	1
1,1-Dichloroethane	ND		ug/kg	1.2	0.18	1
Chloroform	0.89	J	ug/kg	1.9	0.18	1
Carbon tetrachloride	ND		ug/kg	1.2	0.29	1
1,2-Dichloropropane	ND		ug/kg	1.2	0.16	1
Dibromochloromethane	ND		ug/kg	1.2	0.18	1
1,1,2-Trichloroethane	ND		ug/kg	1.2	0.33	1
Tetrachloroethene	2.2		ug/kg	0.62	0.24	1
Chlorobenzene	ND		ug/kg	0.62	0.16	1
Trichlorofluoromethane	ND		ug/kg	5.0	0.87	1
1,2-Dichloroethane	ND		ug/kg	1.2	0.32	1
1,1,1-Trichloroethane	ND		ug/kg	0.62	0.21	1
Bromodichloromethane	ND		ug/kg	0.62	0.14	1
trans-1,3-Dichloropropene	ND		ug/kg	1.2	0.34	1
cis-1,3-Dichloropropene	ND		ug/kg	0.62	0.20	1
1,3-Dichloropropene, Total	ND		ug/kg	0.62	0.20	1
1,1-Dichloropropene	ND		ug/kg	0.62	0.20	1
Bromoform	ND		ug/kg	5.0	0.31	1
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.62	0.21	1
Benzene	ND		ug/kg	0.62	0.21	1
Toluene	ND		ug/kg	1.2	0.68	1
Ethylbenzene	ND		ug/kg	1.2	0.18	1
Chloromethane	ND		ug/kg	5.0	1.2	1
Bromomethane	ND		ug/kg	2.5	0.73	1
Vinyl chloride	ND		ug/kg	1.2	0.42	1
Chloroethane	ND		ug/kg	2.5	0.56	1
1,1-Dichloroethene	ND		ug/kg	1.2	0.30	1
trans-1,2-Dichloroethene	ND		ug/kg	1.9	0.17	1

Project Name: 450 JOHNSON AVE **Lab Number:** L1932118

Project Number: 170588001 **Report Date:** 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-06 Date Collected: 07/19/19 14:00

Client ID: SB18_4.0-4.5 Date Received: 07/19/19

Sample Location: BROOKLYN Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
Trichloroethene	ND		ug/kg	0.62	0.17	1
1,2-Dichlorobenzene	ND		ug/kg	2.5	0.18	1
1,3-Dichlorobenzene	ND		ug/kg	2.5	0.18	1
1,4-Dichlorobenzene	ND		ug/kg	2.5	0.21	1
Methyl tert butyl ether	ND		ug/kg	2.5	0.25	1
p/m-Xylene	ND		ug/kg	2.5	0.70	1
o-Xylene	ND		ug/kg	1.2	0.36	1
Xylenes, Total	ND		ug/kg	1.2	0.36	1
cis-1,2-Dichloroethene	ND		ug/kg	1.2	0.22	1
1,2-Dichloroethene, Total	ND		ug/kg	1.2	0.17	1
Dibromomethane	ND		ug/kg	2.5	0.30	1
Styrene	ND		ug/kg	1.2	0.24	1
Dichlorodifluoromethane	ND		ug/kg	12	1.1	1
Acetone	ND		ug/kg	12	6.0	1
Carbon disulfide	ND		ug/kg	12	5.7	1
2-Butanone	ND		ug/kg	12	2.8	1
Vinyl acetate	ND		ug/kg	12	2.7	1
4-Methyl-2-pentanone	ND		ug/kg	12	1.6	1
1,2,3-Trichloropropane	ND		ug/kg	2.5	0.16	1
2-Hexanone	ND		ug/kg	12	1.5	1
Bromochloromethane	ND		ug/kg	2.5	0.26	1
2,2-Dichloropropane	ND		ug/kg	2.5	0.25	1
1,2-Dibromoethane	ND		ug/kg	1.2	0.35	1
1,3-Dichloropropane	ND		ug/kg	2.5	0.21	1
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.62	0.16	1
Bromobenzene	ND		ug/kg	2.5	0.18	1
n-Butylbenzene	ND		ug/kg	1.2	0.21	1
sec-Butylbenzene	ND		ug/kg	1.2	0.18	1
tert-Butylbenzene	ND		ug/kg	2.5	0.15	1
o-Chlorotoluene	ND		ug/kg	2.5	0.24	1
p-Chlorotoluene	ND		ug/kg	2.5	0.14	1
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.8	1.2	1
Hexachlorobutadiene	ND		ug/kg	5.0	0.21	1
Isopropylbenzene	ND		ug/kg	1.2	0.14	1
p-Isopropyltoluene	ND		ug/kg	1.2	0.14	1
Naphthalene	ND		ug/kg	5.0	0.81	1
Acrylonitrile	ND		ug/kg	5.0	1.4	1

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-06
Client ID: SB18_4.0-4.5
Sample Location: BROOKLYN
Date Collected: 07/19/19 14:00
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.2	0.21	1
1,2,3-Trichlorobenzene	ND		ug/kg	2.5	0.40	1
1,2,4-Trichlorobenzene	ND		ug/kg	2.5	0.34	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.5	0.24	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.5	0.42	1
1,4-Dioxane	ND		ug/kg	100	44.	1
p-Diethylbenzene	ND		ug/kg	2.5	0.22	1
p-Ethyltoluene	ND		ug/kg	2.5	0.48	1
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.5	0.24	1
Ethyl ether	ND		ug/kg	2.5	0.43	1
trans-1,4-Dichloro-2-butene	ND		ug/kg	6.2	1.8	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	112		70-130
Dibromofluoromethane	101		70-130

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-07
Client ID: TMW07_071919
Sample Location: BROOKLYN

Date Collected: 07/19/19 09:00
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/21/19 17:48
Analyst: MAB

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	5.3		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	150		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14	1
1,1-Dichloropropene	ND		ug/l	2.5	0.70	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	0.24	J	ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	3.2		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	1.1		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	1.8	J	ug/l	2.5	0.70	1

Project Name: 450 JOHNSON AVE **Lab Number:** L1932118

Project Number: 170588001 **Report Date:** 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-07 Date Collected: 07/19/19 09:00

Client ID: TMW07_071919 Date Received: 07/19/19

Sample Location: BROOKLYN Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Trichloroethene	70		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
Xylenes, Total	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	270	E	ug/l	2.5	0.70	1
Dibromomethane	ND		ug/l	5.0	1.0	1
1,2,3-Trichloropropane	ND		ug/l	2.5	0.70	1
Acrylonitrile	ND		ug/l	5.0	1.5	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	5.8		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	2.0	J	ug/l	5.0	1.9	1
Vinyl acetate	ND		ug/l	5.0	1.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
2,2-Dichloropropane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,3-Dichloropropane	ND		ug/l	2.5	0.70	1
1,1,1,2-Tetrachloroethane	ND		ug/l	2.5	0.70	1
Bromobenzene	ND		ug/l	2.5	0.70	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
o-Chlorotoluene	ND		ug/l	2.5	0.70	1
p-Chlorotoluene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Hexachlorobutadiene	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
Naphthalene	2.9		ug/l	2.5	0.70	1
n-Propylbenzene	ND		ug/l	2.5	0.70	1

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-07
Client ID: TMW07_071919
Sample Location: BROOKLYN
Date Collected: 07/19/19 09:00
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,4-Dioxane	ND		ug/l	250	61.	1
p-Diethylbenzene	ND		ug/l	2.0	0.70	1
p-Ethyltoluene	ND		ug/l	2.0	0.70	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	0.54	1
Ethyl ether	ND		ug/l	2.5	0.70	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.70	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	85		70-130
Toluene-d8	86		70-130
4-Bromofluorobenzene	88		70-130
Dibromofluoromethane	98		70-130

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-07 D
Client ID: TMW07_071919
Sample Location: BROOKLYN

Date Collected: 07/19/19 09:00
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/23/19 01:49
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
cis-1,2-Dichloroethene	250		ug/l	6.2	1.8	2.5
1,2-Dichloroethene, Total	250	J	ug/l	2.5	0.70	2.5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	84		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	105		70-130

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-09
Client ID: TB_071919
Sample Location: BROOKLYN

Date Collected: 07/16/19 00:00
Date Received: 07/19/19
Field Prep: None

Sample Depth:
Matrix: Water
Analytical Method: 1,8260C
Analytical Date: 07/22/19 20:21
Analyst: PD

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Methylene chloride	ND		ug/l	2.5	0.70	1
1,1-Dichloroethane	ND		ug/l	2.5	0.70	1
Chloroform	ND		ug/l	2.5	0.70	1
Carbon tetrachloride	ND		ug/l	0.50	0.13	1
1,2-Dichloropropane	ND		ug/l	1.0	0.14	1
Dibromochloromethane	ND		ug/l	0.50	0.15	1
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50	1
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	ND		ug/l	2.5	0.70	1
Trichlorofluoromethane	ND		ug/l	2.5	0.70	1
1,2-Dichloroethane	ND		ug/l	0.50	0.13	1
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70	1
Bromodichloromethane	ND		ug/l	0.50	0.19	1
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16	1
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14	1
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14	1
1,1-Dichloropropene	ND		ug/l	2.5	0.70	1
Bromoform	ND		ug/l	2.0	0.65	1
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17	1
Benzene	ND		ug/l	0.50	0.16	1
Toluene	ND		ug/l	2.5	0.70	1
Ethylbenzene	ND		ug/l	2.5	0.70	1
Chloromethane	ND		ug/l	2.5	0.70	1
Bromomethane	ND		ug/l	2.5	0.70	1
Vinyl chloride	ND		ug/l	1.0	0.07	1
Chloroethane	ND		ug/l	2.5	0.70	1
1,1-Dichloroethene	ND		ug/l	0.50	0.17	1
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1

Project Name: 450 JOHNSON AVE **Lab Number:** L1932118

Project Number: 170588001 **Report Date:** 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-09 Date Collected: 07/16/19 00:00

Client ID: TB_071919 Date Received: 07/19/19

Sample Location: BROOKLYN Field Prep: None

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
Trichloroethene	ND		ug/l	0.50	0.18	1
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70	1
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70	1
Methyl tert butyl ether	ND		ug/l	2.5	0.70	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
Xylenes, Total	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
1,2-Dichloroethene, Total	ND		ug/l	2.5	0.70	1
Dibromomethane	ND		ug/l	5.0	1.0	1
1,2,3-Trichloropropane	ND		ug/l	2.5	0.70	1
Acrylonitrile	ND		ug/l	5.0	1.5	1
Styrene	ND		ug/l	2.5	0.70	1
Dichlorodifluoromethane	ND		ug/l	5.0	1.0	1
Acetone	ND		ug/l	5.0	1.5	1
Carbon disulfide	ND		ug/l	5.0	1.0	1
2-Butanone	ND		ug/l	5.0	1.9	1
Vinyl acetate	ND		ug/l	5.0	1.0	1
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0	1
2-Hexanone	ND		ug/l	5.0	1.0	1
Bromochloromethane	ND		ug/l	2.5	0.70	1
2,2-Dichloropropane	ND		ug/l	2.5	0.70	1
1,2-Dibromoethane	ND		ug/l	2.0	0.65	1
1,3-Dichloropropane	ND		ug/l	2.5	0.70	1
1,1,1,2-Tetrachloroethane	ND		ug/l	2.5	0.70	1
Bromobenzene	ND		ug/l	2.5	0.70	1
n-Butylbenzene	ND		ug/l	2.5	0.70	1
sec-Butylbenzene	ND		ug/l	2.5	0.70	1
tert-Butylbenzene	ND		ug/l	2.5	0.70	1
o-Chlorotoluene	ND		ug/l	2.5	0.70	1
p-Chlorotoluene	ND		ug/l	2.5	0.70	1
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70	1
Hexachlorobutadiene	ND		ug/l	2.5	0.70	1
Isopropylbenzene	ND		ug/l	2.5	0.70	1
p-Isopropyltoluene	ND		ug/l	2.5	0.70	1
Naphthalene	ND		ug/l	2.5	0.70	1

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-09
Client ID: TB_071919
Sample Location: BROOKLYN
Date Collected: 07/16/19 00:00
Date Received: 07/19/19
Field Prep: None

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
n-Propylbenzene	ND		ug/l	2.5	0.70	1
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70	1
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70	1
1,4-Dioxane	ND		ug/l	250	61.	1
p-Diethylbenzene	ND		ug/l	2.0	0.70	1
p-Ethyltoluene	ND		ug/l	2.0	0.70	1
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	0.54	1
Ethyl ether	ND		ug/l	2.5	0.70	1
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.70	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	90		70-130
Toluene-d8	85		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	102		70-130

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/21/19 13:12
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 04 Batch: WG1262731-5					
Methylene chloride	ND		ug/kg	250	110
1,1-Dichloroethane	ND		ug/kg	50	7.2
Chloroform	ND		ug/kg	75	7.0
Carbon tetrachloride	ND		ug/kg	50	12.
1,2-Dichloropropane	ND		ug/kg	50	6.2
Dibromochloromethane	ND		ug/kg	50	7.0
1,1,2-Trichloroethane	ND		ug/kg	50	13.
Tetrachloroethene	ND		ug/kg	25	9.8
Chlorobenzene	ND		ug/kg	25	6.4
Trichlorofluoromethane	ND		ug/kg	200	35.
1,2-Dichloroethane	ND		ug/kg	50	13.
1,1,1-Trichloroethane	ND		ug/kg	25	8.4
Bromodichloromethane	ND		ug/kg	25	5.4
trans-1,3-Dichloropropene	ND		ug/kg	50	14.
cis-1,3-Dichloropropene	ND		ug/kg	25	7.9
1,3-Dichloropropene, Total	ND		ug/kg	25	7.9
1,1-Dichloropropene	ND		ug/kg	25	8.0
Bromoform	ND		ug/kg	200	12.
1,1,2,2-Tetrachloroethane	ND		ug/kg	25	8.3
Benzene	ND		ug/kg	25	8.3
Toluene	ND		ug/kg	50	27.
Ethylbenzene	ND		ug/kg	50	7.0
Chloromethane	ND		ug/kg	200	47.
Bromomethane	ND		ug/kg	100	29.
Vinyl chloride	ND		ug/kg	50	17.
Chloroethane	ND		ug/kg	100	23.
1,1-Dichloroethene	ND		ug/kg	50	12.
trans-1,2-Dichloroethene	ND		ug/kg	75	6.8
Trichloroethene	ND		ug/kg	25	6.8

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/21/19 13:12
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 04 Batch: WG1262731-5					
1,2-Dichlorobenzene	ND		ug/kg	100	7.2
1,3-Dichlorobenzene	ND		ug/kg	100	7.4
1,4-Dichlorobenzene	ND		ug/kg	100	8.6
Methyl tert butyl ether	ND		ug/kg	100	10.
p/m-Xylene	ND		ug/kg	100	28.
o-Xylene	ND		ug/kg	50	14.
Xylenes, Total	ND		ug/kg	50	14.
cis-1,2-Dichloroethene	ND		ug/kg	50	8.8
1,2-Dichloroethene, Total	ND		ug/kg	50	6.8
Dibromomethane	ND		ug/kg	100	12.
Styrene	ND		ug/kg	50	9.8
Dichlorodifluoromethane	ND		ug/kg	500	46.
Acetone	ND		ug/kg	500	240
Carbon disulfide	ND		ug/kg	500	230
2-Butanone	ND		ug/kg	500	110
Vinyl acetate	ND		ug/kg	500	110
4-Methyl-2-pentanone	ND		ug/kg	500	64.
1,2,3-Trichloropropane	ND		ug/kg	100	6.4
2-Hexanone	ND		ug/kg	500	59.
Bromochloromethane	ND		ug/kg	100	10.
2,2-Dichloropropane	ND		ug/kg	100	10.
1,2-Dibromoethane	ND		ug/kg	50	14.
1,3-Dichloropropane	ND		ug/kg	100	8.4
1,1,1,2-Tetrachloroethane	ND		ug/kg	25	6.6
Bromobenzene	ND		ug/kg	100	7.2
n-Butylbenzene	ND		ug/kg	50	8.4
sec-Butylbenzene	ND		ug/kg	50	7.3
tert-Butylbenzene	ND		ug/kg	100	5.9
o-Chlorotoluene	ND		ug/kg	100	9.6

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/21/19 13:12
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 High - Westborough Lab for sample(s): 04 Batch: WG1262731-5					
p-Chlorotoluene	ND		ug/kg	100	5.4
1,2-Dibromo-3-chloropropane	ND		ug/kg	150	50.
Hexachlorobutadiene	ND		ug/kg	200	8.4
Isopropylbenzene	ND		ug/kg	50	5.4
p-Isopropyltoluene	ND		ug/kg	50	5.4
Naphthalene	100	J	ug/kg	200	32.
Acrylonitrile	ND		ug/kg	200	58.
n-Propylbenzene	ND		ug/kg	50	8.6
1,2,3-Trichlorobenzene	ND		ug/kg	100	16.
1,2,4-Trichlorobenzene	ND		ug/kg	100	14.
1,3,5-Trimethylbenzene	ND		ug/kg	100	9.6
1,2,4-Trimethylbenzene	ND		ug/kg	100	17.
1,4-Dioxane	ND		ug/kg	4000	1800
p-Diethylbenzene	ND		ug/kg	100	8.8
p-Ethyltoluene	ND		ug/kg	100	19.
1,2,4,5-Tetramethylbenzene	ND		ug/kg	100	9.6
Ethyl ether	ND		ug/kg	100	17.
trans-1,4-Dichloro-2-butene	ND		ug/kg	250	71.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	81		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	91		70-130

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/22/19 19:39
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 07,09 Batch: WG1262844-15					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14
1,1-Dichloropropene	ND		ug/l	2.5	0.70
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/22/19 19:39
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 07,09 Batch: WG1262844-15					
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.70
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
Xylenes, Total	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
1,2-Dichloroethene, Total	ND		ug/l	2.5	0.70
Dibromomethane	ND		ug/l	5.0	1.0
1,2,3-Trichloropropane	ND		ug/l	2.5	0.70
Acrylonitrile	ND		ug/l	5.0	1.5
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
Vinyl acetate	ND		ug/l	5.0	1.0
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
2,2-Dichloropropane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,3-Dichloropropane	ND		ug/l	2.5	0.70
1,1,1,2-Tetrachloroethane	ND		ug/l	2.5	0.70
Bromobenzene	ND		ug/l	2.5	0.70
n-Butylbenzene	ND		ug/l	2.5	0.70
sec-Butylbenzene	ND		ug/l	2.5	0.70
tert-Butylbenzene	ND		ug/l	2.5	0.70

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/22/19 19:39
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 07,09 Batch: WG1262844-15					
o-Chlorotoluene	ND		ug/l	2.5	0.70
p-Chlorotoluene	ND		ug/l	2.5	0.70
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Hexachlorobutadiene	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
p-Isopropyltoluene	ND		ug/l	2.5	0.70
Naphthalene	ND		ug/l	2.5	0.70
n-Propylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70
1,4-Dioxane	ND		ug/l	250	61.
p-Diethylbenzene	ND		ug/l	2.0	0.70
p-Ethyltoluene	ND		ug/l	2.0	0.70
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	0.54
Ethyl ether	ND		ug/l	2.5	0.70
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.70

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	84		70-130
4-Bromofluorobenzene	85		70-130
Dibromofluoromethane	102		70-130

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/21/19 12:19
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 07 Batch: WG1262844-5					
Methylene chloride	ND		ug/l	2.5	0.70
1,1-Dichloroethane	ND		ug/l	2.5	0.70
Chloroform	ND		ug/l	2.5	0.70
Carbon tetrachloride	ND		ug/l	0.50	0.13
1,2-Dichloropropane	ND		ug/l	1.0	0.14
Dibromochloromethane	ND		ug/l	0.50	0.15
1,1,2-Trichloroethane	ND		ug/l	1.5	0.50
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	ND		ug/l	2.5	0.70
Trichlorofluoromethane	ND		ug/l	2.5	0.70
1,2-Dichloroethane	ND		ug/l	0.50	0.13
1,1,1-Trichloroethane	ND		ug/l	2.5	0.70
Bromodichloromethane	ND		ug/l	0.50	0.19
trans-1,3-Dichloropropene	ND		ug/l	0.50	0.16
cis-1,3-Dichloropropene	ND		ug/l	0.50	0.14
1,3-Dichloropropene, Total	ND		ug/l	0.50	0.14
1,1-Dichloropropene	ND		ug/l	2.5	0.70
Bromoform	ND		ug/l	2.0	0.65
1,1,2,2-Tetrachloroethane	ND		ug/l	0.50	0.17
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Chloromethane	ND		ug/l	2.5	0.70
Bromomethane	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
Chloroethane	ND		ug/l	2.5	0.70
1,1-Dichloroethene	ND		ug/l	0.50	0.17
trans-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Trichloroethene	ND		ug/l	0.50	0.18

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/21/19 12:19
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 07 Batch: WG1262844-5					
1,2-Dichlorobenzene	ND		ug/l	2.5	0.70
1,3-Dichlorobenzene	ND		ug/l	2.5	0.70
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.70
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
Xylenes, Total	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
1,2-Dichloroethene, Total	ND		ug/l	2.5	0.70
Dibromomethane	ND		ug/l	5.0	1.0
1,2,3-Trichloropropane	ND		ug/l	2.5	0.70
Acrylonitrile	ND		ug/l	5.0	1.5
Styrene	ND		ug/l	2.5	0.70
Dichlorodifluoromethane	ND		ug/l	5.0	1.0
Acetone	ND		ug/l	5.0	1.5
Carbon disulfide	ND		ug/l	5.0	1.0
2-Butanone	ND		ug/l	5.0	1.9
Vinyl acetate	ND		ug/l	5.0	1.0
4-Methyl-2-pentanone	ND		ug/l	5.0	1.0
2-Hexanone	ND		ug/l	5.0	1.0
Bromochloromethane	ND		ug/l	2.5	0.70
2,2-Dichloropropane	ND		ug/l	2.5	0.70
1,2-Dibromoethane	ND		ug/l	2.0	0.65
1,3-Dichloropropane	ND		ug/l	2.5	0.70
1,1,1,2-Tetrachloroethane	ND		ug/l	2.5	0.70
Bromobenzene	ND		ug/l	2.5	0.70
n-Butylbenzene	ND		ug/l	2.5	0.70
sec-Butylbenzene	ND		ug/l	2.5	0.70
tert-Butylbenzene	ND		ug/l	2.5	0.70

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/21/19 12:19
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 07 Batch: WG1262844-5					
o-Chlorotoluene	ND		ug/l	2.5	0.70
p-Chlorotoluene	ND		ug/l	2.5	0.70
1,2-Dibromo-3-chloropropane	ND		ug/l	2.5	0.70
Hexachlorobutadiene	ND		ug/l	2.5	0.70
Isopropylbenzene	ND		ug/l	2.5	0.70
p-Isopropyltoluene	ND		ug/l	2.5	0.70
Naphthalene	ND		ug/l	2.5	0.70
n-Propylbenzene	ND		ug/l	2.5	0.70
1,2,3-Trichlorobenzene	ND		ug/l	2.5	0.70
1,2,4-Trichlorobenzene	ND		ug/l	2.5	0.70
1,3,5-Trimethylbenzene	ND		ug/l	2.5	0.70
1,2,4-Trimethylbenzene	ND		ug/l	2.5	0.70
1,4-Dioxane	ND		ug/l	250	61.
p-Diethylbenzene	ND		ug/l	2.0	0.70
p-Ethyltoluene	ND		ug/l	2.0	0.70
1,2,4,5-Tetramethylbenzene	ND		ug/l	2.0	0.54
Ethyl ether	ND		ug/l	2.5	0.70
trans-1,4-Dichloro-2-butene	ND		ug/l	2.5	0.70

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	86		70-130
Toluene-d8	87		70-130
4-Bromofluorobenzene	88		70-130
Dibromofluoromethane	98		70-130

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/21/19 15:55
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 03,05-06 Batch: WG1262879-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	ND		ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
1,2-Dichloropropane	ND		ug/kg	1.0	0.12
Dibromochloromethane	ND		ug/kg	1.0	0.14
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.27
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
Trichlorofluoromethane	ND		ug/kg	4.0	0.70
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Bromodichloromethane	ND		ug/kg	0.50	0.11
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.27
cis-1,3-Dichloropropene	ND		ug/kg	0.50	0.16
1,3-Dichloropropene, Total	ND		ug/kg	0.50	0.16
1,1-Dichloropropene	ND		ug/kg	0.50	0.16
Bromoform	ND		ug/kg	4.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Chloromethane	ND		ug/kg	4.0	0.93
Bromomethane	ND		ug/kg	2.0	0.58
Vinyl chloride	ND		ug/kg	1.0	0.34
Chloroethane	ND		ug/kg	2.0	0.45
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
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Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/21/19 15:55
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 03,05-06 Batch: WG1262879-5					
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
Xylenes, Total	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
1,2-Dichloroethene, Total	ND		ug/kg	1.0	0.14
Dibromomethane	ND		ug/kg	2.0	0.24
Styrene	ND		ug/kg	1.0	0.20
Dichlorodifluoromethane	ND		ug/kg	10	0.92
Acetone	ND		ug/kg	10	4.8
Carbon disulfide	ND		ug/kg	10	4.6
2-Butanone	ND		ug/kg	10	2.2
Vinyl acetate	ND		ug/kg	10	2.2
4-Methyl-2-pentanone	ND		ug/kg	10	1.3
1,2,3-Trichloropropane	ND		ug/kg	2.0	0.13
2-Hexanone	ND		ug/kg	10	1.2
Bromochloromethane	ND		ug/kg	2.0	0.20
2,2-Dichloropropane	ND		ug/kg	2.0	0.20
1,2-Dibromoethane	ND		ug/kg	1.0	0.28
1,3-Dichloropropane	ND		ug/kg	2.0	0.17
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	0.13
Bromobenzene	ND		ug/kg	2.0	0.14
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
o-Chlorotoluene	ND		ug/kg	2.0	0.19

Project Name: 450 JOHNSON AVE
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Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/21/19 15:55
Analyst: AD

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035 Low - Westborough Lab for sample(s): 03,05-06 Batch: WG1262879-5					
p-Chlorotoluene	ND		ug/kg	2.0	0.11
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	1.0
Hexachlorobutadiene	ND		ug/kg	4.0	0.17
Isopropylbenzene	ND		ug/kg	1.0	0.11
p-Isopropyltoluene	ND		ug/kg	1.0	0.11
Naphthalene	ND		ug/kg	4.0	0.65
Acrylonitrile	ND		ug/kg	4.0	1.2
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	0.32
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	0.27
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
1,4-Dioxane	ND		ug/kg	80	35.
p-Diethylbenzene	ND		ug/kg	2.0	0.18
p-Ethyltoluene	ND		ug/kg	2.0	0.38
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.0	0.19
Ethyl ether	ND		ug/kg	2.0	0.34
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	1.4

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	100		70-130

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Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/22/19 07:36
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1263000-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	ND		ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
1,2-Dichloropropane	ND		ug/kg	1.0	0.12
Dibromochloromethane	ND		ug/kg	1.0	0.14
1,1,2-Trichloroethane	ND		ug/kg	1.0	0.27
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
Trichlorofluoromethane	ND		ug/kg	4.0	0.70
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Bromodichloromethane	ND		ug/kg	0.50	0.11
trans-1,3-Dichloropropene	ND		ug/kg	1.0	0.27
cis-1,3-Dichloropropene	ND		ug/kg	0.50	0.16
1,3-Dichloropropene, Total	ND		ug/kg	0.50	0.16
1,1-Dichloropropene	ND		ug/kg	0.50	0.16
Bromoform	ND		ug/kg	4.0	0.25
1,1,2,2-Tetrachloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Chloromethane	ND		ug/kg	4.0	0.93
Bromomethane	ND		ug/kg	2.0	0.58
Vinyl chloride	ND		ug/kg	1.0	0.34
Chloroethane	ND		ug/kg	2.0	0.45
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14

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Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/22/19 07:36
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1263000-5					
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
Xylenes, Total	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
1,2-Dichloroethene, Total	ND		ug/kg	1.0	0.14
Dibromomethane	ND		ug/kg	2.0	0.24
Styrene	ND		ug/kg	1.0	0.20
Dichlorodifluoromethane	ND		ug/kg	10	0.92
Acetone	ND		ug/kg	10	4.8
Carbon disulfide	ND		ug/kg	10	4.6
2-Butanone	ND		ug/kg	10	2.2
Vinyl acetate	ND		ug/kg	10	2.2
4-Methyl-2-pentanone	ND		ug/kg	10	1.3
1,2,3-Trichloropropane	ND		ug/kg	2.0	0.13
2-Hexanone	ND		ug/kg	10	1.2
Bromochloromethane	ND		ug/kg	2.0	0.20
2,2-Dichloropropane	ND		ug/kg	2.0	0.20
1,2-Dibromoethane	ND		ug/kg	1.0	0.28
1,3-Dichloropropane	ND		ug/kg	2.0	0.17
1,1,1,2-Tetrachloroethane	ND		ug/kg	0.50	0.13
Bromobenzene	ND		ug/kg	2.0	0.14
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
o-Chlorotoluene	ND		ug/kg	2.0	0.19

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Batch Quality Control

Analytical Method: 1,8260C
Analytical Date: 07/22/19 07:36
Analyst: MV

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG1263000-5					
p-Chlorotoluene	ND		ug/kg	2.0	0.11
1,2-Dibromo-3-chloropropane	ND		ug/kg	3.0	1.0
Hexachlorobutadiene	ND		ug/kg	4.0	0.17
Isopropylbenzene	ND		ug/kg	1.0	0.11
p-Isopropyltoluene	ND		ug/kg	1.0	0.11
Naphthalene	ND		ug/kg	4.0	0.65
Acrylonitrile	ND		ug/kg	4.0	1.2
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,2,3-Trichlorobenzene	ND		ug/kg	2.0	0.32
1,2,4-Trichlorobenzene	ND		ug/kg	2.0	0.27
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
1,4-Dioxane	ND		ug/kg	80	35.
p-Diethylbenzene	ND		ug/kg	2.0	0.18
p-Ethyltoluene	ND		ug/kg	2.0	0.38
1,2,4,5-Tetramethylbenzene	ND		ug/kg	2.0	0.19
Ethyl ether	ND		ug/kg	2.0	0.34
trans-1,4-Dichloro-2-butene	ND		ug/kg	5.0	1.4

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	109		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	95		70-130

Lab Control Sample Analysis
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Project Name: 450 JOHNSON AVE
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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 04 Batch: WG1262731-3 WG1262731-4								
Methylene chloride	98		97		70-130	1		30
1,1-Dichloroethane	105		104		70-130	1		30
Chloroform	104		103		70-130	1		30
Carbon tetrachloride	98		97		70-130	1		30
1,2-Dichloropropane	107		108		70-130	1		30
Dibromochloromethane	96		94		70-130	2		30
1,1,2-Trichloroethane	111		107		70-130	4		30
Tetrachloroethene	106		103		70-130	3		30
Chlorobenzene	99		98		70-130	1		30
Trichlorofluoromethane	98		95		70-139	3		30
1,2-Dichloroethane	86		85		70-130	1		30
1,1,1-Trichloroethane	104		103		70-130	1		30
Bromodichloromethane	103		102		70-130	1		30
trans-1,3-Dichloropropene	104		102		70-130	2		30
cis-1,3-Dichloropropene	110		110		70-130	0		30
1,1-Dichloropropene	114		114		70-130	0		30
Bromoform	101		97		70-130	4		30
1,1,2,2-Tetrachloroethane	101		98		70-130	3		30
Benzene	110		108		70-130	2		30
Toluene	107		106		70-130	1		30
Ethylbenzene	109		107		70-130	2		30
Chloromethane	95		90		52-130	5		30
Bromomethane	113		108		57-147	5		30

Lab Control Sample Analysis
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Project Name: 450 JOHNSON AVE
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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 04 Batch: WG1262731-3 WG1262731-4								
Vinyl chloride	113		110		67-130	3		30
Chloroethane	125		123		50-151	2		30
1,1-Dichloroethene	116		113		65-135	3		30
trans-1,2-Dichloroethene	114		110		70-130	4		30
Trichloroethene	110		110		70-130	0		30
1,2-Dichlorobenzene	90		91		70-130	1		30
1,3-Dichlorobenzene	94		93		70-130	1		30
1,4-Dichlorobenzene	92		91		70-130	1		30
Methyl tert butyl ether	95		94		66-130	1		30
p/m-Xylene	104		104		70-130	0		30
o-Xylene	104		101		70-130	3		30
cis-1,2-Dichloroethene	112		111		70-130	1		30
Dibromomethane	105		103		70-130	2		30
Styrene	104		101		70-130	3		30
Dichlorodifluoromethane	80		77		30-146	4		30
Acetone	86		75		54-140	14		30
Carbon disulfide	111		107		59-130	4		30
2-Butanone	**69**	Q	71		70-130	3		30
Vinyl acetate	88		88		70-130	0		30
4-Methyl-2-pentanone	102		98		70-130	4		30
1,2,3-Trichloropropane	93		93		68-130	0		30
2-Hexanone	80		78		70-130	3		30
Bromochloromethane	105		105		70-130	0		30

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Project Name: 450 JOHNSON AVE
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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 04 Batch: WG1262731-3 WG1262731-4								
2,2-Dichloropropane	107		103		70-130	4		30
1,2-Dibromoethane	102		98		70-130	4		30
1,3-Dichloropropane	104		100		69-130	4		30
1,1,1,2-Tetrachloroethane	97		96		70-130	1		30
Bromobenzene	98		96		70-130	2		30
n-Butylbenzene	106		105		70-130	1		30
sec-Butylbenzene	100		99		70-130	1		30
tert-Butylbenzene	97		97		70-130	0		30
o-Chlorotoluene	85		86		70-130	1		30
p-Chlorotoluene	101		100		70-130	1		30
1,2-Dibromo-3-chloropropane	87		84		68-130	4		30
Hexachlorobutadiene	113		113		67-130	0		30
Isopropylbenzene	101		99		70-130	2		30
p-Isopropyltoluene	98		98		70-130	0		30
Naphthalene	110		101		70-130	9		30
Acrylonitrile	91		85		70-130	7		30
n-Propylbenzene	107		104		70-130	3		30
1,2,3-Trichlorobenzene	91		92		70-130	1		30
1,2,4-Trichlorobenzene	98		96		70-130	2		30
1,3,5-Trimethylbenzene	98		98		70-130	0		30
1,2,4-Trimethylbenzene	96		95		70-130	1		30
1,4-Dioxane	118		112		65-136	5		30
p-Diethylbenzene	99		99		70-130	0		30

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Project Name: 450 JOHNSON AVE

Project Number: 170588001

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 High - Westborough Lab Associated sample(s): 04 Batch: WG1262731-3 WG1262731-4								
p-Ethyltoluene	100		98		70-130	2		30
1,2,4,5-Tetramethylbenzene	95		95		70-130	0		30
Ethyl ether	107		106		67-130	1		30
trans-1,4-Dichloro-2-butene	89		80		70-130	11		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	83		83		70-130
Toluene-d8	99		99		70-130
4-Bromofluorobenzene	97		98		70-130
Dibromofluoromethane	93		95		70-130

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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 07,09 Batch: WG1262844-13 WG1262844-14								
Methylene chloride	96		94		70-130	2		20
1,1-Dichloroethane	100		95		70-130	5		20
Chloroform	100		94		70-130	6		20
Carbon tetrachloride	120		110		63-132	9		20
1,2-Dichloropropane	99		96		70-130	3		20
Dibromochloromethane	96		94		63-130	2		20
1,1,2-Trichloroethane	84		83		70-130	1		20
Tetrachloroethene	110		100		70-130	10		20
Chlorobenzene	96		93		75-130	3		20
Trichlorofluoromethane	110		100		62-150	10		20
1,2-Dichloroethane	100		100		70-130	0		20
1,1,1-Trichloroethane	110		100		67-130	10		20
Bromodichloromethane	98		93		67-130	5		20
trans-1,3-Dichloropropene	73		72		70-130	1		20
cis-1,3-Dichloropropene	88		85		70-130	3		20
1,1-Dichloropropene	110		98		70-130	12		20
Bromoform	78		78		54-136	0		20
1,1,2,2-Tetrachloroethane	77		76		67-130	1		20
Benzene	100		96		70-130	4		20
Toluene	91		86		70-130	6		20
Ethylbenzene	92		87		70-130	6		20
Chloromethane	120		110		64-130	9		20
Bromomethane	75		72		39-139	4		20

Lab Control Sample Analysis
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Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 07,09 Batch: WG1262844-13 WG1262844-14								
Vinyl chloride	110		100		55-140	10		20
Chloroethane	92		84		55-138	9		20
1,1-Dichloroethene	110		100		61-145	10		20
trans-1,2-Dichloroethene	110		100		70-130	10		20
Trichloroethene	100		96		70-130	4		20
1,2-Dichlorobenzene	96		95		70-130	1		20
1,3-Dichlorobenzene	96		95		70-130	1		20
1,4-Dichlorobenzene	95		94		70-130	1		20
Methyl tert butyl ether	97		95		63-130	2		20
p/m-Xylene	100		95		70-130	5		20
o-Xylene	100		95		70-130	5		20
cis-1,2-Dichloroethene	110		100		70-130	10		20
Dibromomethane	100		100		70-130	0		20
1,2,3-Trichloropropane	68		67		64-130	1		20
Acrylonitrile	110		110		70-130	0		20
Styrene	100		95		70-130	5		20
Dichlorodifluoromethane	130		120		36-147	8		20
Acetone	97		96		58-148	1		20
Carbon disulfide	99		91		51-130	8		20
2-Butanone	92		89		63-138	3		20
Vinyl acetate	100		100		70-130	0		20
4-Methyl-2-pentanone	83		82		59-130	1		20
2-Hexanone	76		77		57-130	1		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 07,09 Batch: WG1262844-13 WG1262844-14								
Bromochloromethane	120		120		70-130	0		20
2,2-Dichloropropane	110		100		63-133	10		20
1,2-Dibromoethane	93		92		70-130	1		20
1,3-Dichloropropane	82		83		70-130	1		20
1,1,1,2-Tetrachloroethane	98		96		64-130	2		20
Bromobenzene	92		92		70-130	0		20
n-Butylbenzene	90		87		53-136	3		20
sec-Butylbenzene	97		92		70-130	5		20
tert-Butylbenzene	100		96		70-130	4		20
o-Chlorotoluene	85		84		70-130	1		20
p-Chlorotoluene	87		85		70-130	2		20
1,2-Dibromo-3-chloropropane	75		74		41-144	1		20
Hexachlorobutadiene	94		91		63-130	3		20
Isopropylbenzene	97		93		70-130	4		20
p-Isopropyltoluene	100		99		70-130	1		20
Naphthalene	81		80		70-130	1		20
n-Propylbenzene	92		88		69-130	4		20
1,2,3-Trichlorobenzene	90		89		70-130	1		20
1,2,4-Trichlorobenzene	91		90		70-130	1		20
1,3,5-Trimethylbenzene	94		90		64-130	4		20
1,2,4-Trimethylbenzene	94		91		70-130	3		20
1,4-Dioxane	112		106		56-162	6		20
p-Diethylbenzene	100		97		70-130	3		20

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE

Project Number: 170588001

Lab Number: L1932118

Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 07,09 Batch: WG1262844-13 WG1262844-14								
p-Ethyltoluene	96		93		70-130	3		20
1,2,4,5-Tetramethylbenzene	90		88		70-130	2		20
Ethyl ether	85		84		59-134	1		20
trans-1,4-Dichloro-2-butene	71		88		70-130	**21**	Q	20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	96		95		70-130
Toluene-d8	86		86		70-130
4-Bromofluorobenzene	85		86		70-130
Dibromofluoromethane	105		104		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 07 Batch: WG1262844-3 WG1262844-4								
Methylene chloride	97		96		70-130	1		20
1,1-Dichloroethane	98		94		70-130	4		20
Chloroform	93		90		70-130	3		20
Carbon tetrachloride	110		100		63-132	10		20
1,2-Dichloropropane	100		99		70-130	1		20
Dibromochloromethane	100		96		63-130	4		20
1,1,2-Trichloroethane	90		88		70-130	2		20
Tetrachloroethene	110		100		70-130	10		20
Chlorobenzene	96		94		75-130	2		20
Trichlorofluoromethane	92		84		62-150	9		20
1,2-Dichloroethane	94		93		70-130	1		20
1,1,1-Trichloroethane	100		94		67-130	6		20
Bromodichloromethane	93		90		67-130	3		20
trans-1,3-Dichloropropene	78		76		70-130	3		20
cis-1,3-Dichloropropene	91		89		70-130	2		20
1,1-Dichloropropene	100		96		70-130	4		20
Bromoform	87		86		54-136	1		20
1,1,2,2-Tetrachloroethane	86		86		67-130	0		20
Benzene	100		96		70-130	4		20
Toluene	92		89		70-130	3		20
Ethylbenzene	92		88		70-130	4		20
Chloromethane	120		110		64-130	9		20
Bromomethane	78		74		39-139	5		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 07 Batch: WG1262844-3 WG1262844-4								
Vinyl chloride	110		97		55-140	13		20
Chloroethane	85		81		55-138	5		20
1,1-Dichloroethene	110		98		61-145	12		20
trans-1,2-Dichloroethene	100		100		70-130	0		20
Trichloroethene	97		92		70-130	5		20
1,2-Dichlorobenzene	100		100		70-130	0		20
1,3-Dichlorobenzene	100		98		70-130	2		20
1,4-Dichlorobenzene	99		97		70-130	2		20
Methyl tert butyl ether	100		100		63-130	0		20
p/m-Xylene	100		95		70-130	5		20
o-Xylene	100		95		70-130	5		20
cis-1,2-Dichloroethene	100		100		70-130	0		20
Dibromomethane	100		100		70-130	0		20
1,2,3-Trichloropropane	82		82		64-130	0		20
Acrylonitrile	120		120		70-130	0		20
Styrene	100		100		70-130	0		20
Dichlorodifluoromethane	120		110		36-147	9		20
Acetone	100		95		58-148	5		20
Carbon disulfide	98		92		51-130	6		20
2-Butanone	95		93		63-138	2		20
Vinyl acetate	110		110		70-130	0		20
4-Methyl-2-pentanone	97		96		59-130	1		20
2-Hexanone	92		90		57-130	2		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 07 Batch: WG1262844-3 WG1262844-4								
Bromochloromethane	120		120		70-130	0		20
2,2-Dichloropropane	100		97		63-133	3		20
1,2-Dibromoethane	100		98		70-130	2		20
1,3-Dichloropropane	88		88		70-130	0		20
1,1,1,2-Tetrachloroethane	98		96		64-130	2		20
Bromobenzene	98		96		70-130	2		20
n-Butylbenzene	93		89		53-136	4		20
sec-Butylbenzene	100		96		70-130	4		20
tert-Butylbenzene	100		99		70-130	1		20
o-Chlorotoluene	89		86		70-130	3		20
p-Chlorotoluene	91		87		70-130	4		20
1,2-Dibromo-3-chloropropane	84		82		41-144	2		20
Hexachlorobutadiene	95		92		63-130	3		20
Isopropylbenzene	100		97		70-130	3		20
p-Isopropyltoluene	100		100		70-130	0		20
Naphthalene	96		97		70-130	1		20
n-Propylbenzene	95		90		69-130	5		20
1,2,3-Trichlorobenzene	100		100		70-130	0		20
1,2,4-Trichlorobenzene	98		98		70-130	0		20
1,3,5-Trimethylbenzene	95		93		64-130	2		20
1,2,4-Trimethylbenzene	96		93		70-130	3		20
1,4-Dioxane	112		104		56-162	7		20
p-Diethylbenzene	100		100		70-130	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 07 Batch: WG1262844-3 WG1262844-4								
p-Ethyltoluene	99		95		70-130	4		20
1,2,4,5-Tetramethylbenzene	95		93		70-130	2		20
Ethyl ether	86		84		59-134	2		20
trans-1,4-Dichloro-2-butene	94		79		70-130	17		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	89		88		70-130
Toluene-d8	89		89		70-130
4-Bromofluorobenzene	88		88		70-130
Dibromofluoromethane	100		102		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 03,05-06 Batch: WG1262879-3 WG1262879-4								
Methylene chloride	112		112		70-130	0		30
1,1-Dichloroethane	130		**132**	Q	70-130	2		30
Chloroform	114		118		70-130	3		30
Carbon tetrachloride	98		100		70-130	2		30
1,2-Dichloropropane	130		**132**	Q	70-130	2		30
Dibromochloromethane	92		93		70-130	1		30
1,1,2-Trichloroethane	107		108		70-130	1		30
Tetrachloroethene	90		92		70-130	2		30
Chlorobenzene	101		103		70-130	2		30
Trichlorofluoromethane	88		89		70-139	1		30
1,2-Dichloroethane	121		124		70-130	2		30
1,1,1-Trichloroethane	106		109		70-130	3		30
Bromodichloromethane	107		108		70-130	1		30
trans-1,3-Dichloropropene	108		107		70-130	1		30
cis-1,3-Dichloropropene	114		116		70-130	2		30
1,1-Dichloropropene	118		118		70-130	0		30
Bromoform	82		81		70-130	1		30
1,1,2,2-Tetrachloroethane	111		112		70-130	1		30
Benzene	116		119		70-130	3		30
Toluene	108		109		70-130	1		30
Ethylbenzene	110		112		70-130	2		30
Chloromethane	**156**	Q	**159**	Q	52-130	2		30
Bromomethane	147		**150**	Q	57-147	2		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 03,05-06 Batch: WG1262879-3 WG1262879-4								
Vinyl chloride	127		129		67-130	2		30
Chloroethane	95		96		50-151	1		30
1,1-Dichloroethene	109		110		65-135	1		30
trans-1,2-Dichloroethene	109		111		70-130	2		30
Trichloroethene	105		105		70-130	0		30
1,2-Dichlorobenzene	100		99		70-130	1		30
1,3-Dichlorobenzene	99		100		70-130	1		30
1,4-Dichlorobenzene	98		99		70-130	1		30
Methyl tert butyl ether	112		114		66-130	2		30
p/m-Xylene	100		104		70-130	4		30
o-Xylene	100		101		70-130	1		30
cis-1,2-Dichloroethene	111		114		70-130	3		30
Dibromomethane	108		110		70-130	2		30
Styrene	99		100		70-130	1		30
Dichlorodifluoromethane	110		111		30-146	1		30
Acetone	**182**	Q	**172**	Q	54-140	6		30
Carbon disulfide	116		117		59-130	1		30
2-Butanone	**133**	Q	124		70-130	7		30
Vinyl acetate	**135**	Q	**135**	Q	70-130	0		30
4-Methyl-2-pentanone	116		115		70-130	1		30
1,2,3-Trichloropropane	113		111		68-130	2		30
2-Hexanone	125		124		70-130	1		30
Bromochloromethane	103		103		70-130	0		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 03,05-06 Batch: WG1262879-3 WG1262879-4								
2,2-Dichloropropane	110		110		70-130	0		30
1,2-Dibromoethane	102		103		70-130	1		30
1,3-Dichloropropane	112		115		69-130	3		30
1,1,1,2-Tetrachloroethane	91		92		70-130	1		30
Bromobenzene	96		98		70-130	2		30
n-Butylbenzene	115		116		70-130	1		30
sec-Butylbenzene	109		110		70-130	1		30
tert-Butylbenzene	105		106		70-130	1		30
o-Chlorotoluene	117		116		70-130	1		30
p-Chlorotoluene	113		113		70-130	0		30
1,2-Dibromo-3-chloropropane	83		82		68-130	1		30
Hexachlorobutadiene	87		87		67-130	0		30
Isopropylbenzene	110		111		70-130	1		30
p-Isopropyltoluene	104		106		70-130	2		30
Naphthalene	97		96		70-130	1		30
Acrylonitrile	**132**	Q	126		70-130	5		30
n-Propylbenzene	114		115		70-130	1		30
1,2,3-Trichlorobenzene	90		91		70-130	1		30
1,2,4-Trichlorobenzene	90		90		70-130	0		30
1,3,5-Trimethylbenzene	109		110		70-130	1		30
1,2,4-Trimethylbenzene	109		109		70-130	0		30
1,4-Dioxane	88		83		65-136	6		30
p-Diethylbenzene	104		104		70-130	0		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035 Low - Westborough Lab Associated sample(s): 03,05-06 Batch: WG1262879-3 WG1262879-4								
p-Ethyltoluene	111		112		70-130	1		30
1,2,4,5-Tetramethylbenzene	100		102		70-130	2		30
Ethyl ether	120		121		67-130	1		30
trans-1,4-Dichloro-2-butene	114		119		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	109		107		70-130
Toluene-d8	100		100		70-130
4-Bromofluorobenzene	113		113		70-130
Dibromofluoromethane	98		98		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1263000-3 WG1263000-4								
Methylene chloride	91		89		70-130	2		30
1,1-Dichloroethane	108		104		70-130	4		30
Chloroform	97		94		70-130	3		30
Carbon tetrachloride	79		78		70-130	1		30
1,2-Dichloropropane	109		107		70-130	2		30
Dibromochloromethane	92		90		70-130	2		30
1,1,2-Trichloroethane	111		108		70-130	3		30
Tetrachloroethene	85		81		70-130	5		30
Chlorobenzene	97		94		70-130	3		30
Trichlorofluoromethane	77		71		70-139	8		30
1,2-Dichloroethane	109		106		70-130	3		30
1,1,1-Trichloroethane	88		85		70-130	3		30
Bromodichloromethane	92		91		70-130	1		30
trans-1,3-Dichloropropene	104		105		70-130	1		30
cis-1,3-Dichloropropene	95		94		70-130	1		30
1,1-Dichloropropene	97		93		70-130	4		30
Bromoform	86		85		70-130	1		30
1,1,2,2-Tetrachloroethane	119		118		70-130	1		30
Benzene	98		94		70-130	4		30
Toluene	103		99		70-130	4		30
Ethylbenzene	104		101		70-130	3		30
Chloromethane	**146**	Q	129		52-130	12		30
Bromomethane	124		120		57-147	3		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1263000-3 WG1263000-4								
Vinyl chloride	110		102		67-130	8		30
Chloroethane	84		78		50-151	7		30
1,1-Dichloroethene	88		82		65-135	7		30
trans-1,2-Dichloroethene	89		84		70-130	6		30
Trichloroethene	86		83		70-130	4		30
1,2-Dichlorobenzene	100		99		70-130	1		30
1,3-Dichlorobenzene	100		98		70-130	2		30
1,4-Dichlorobenzene	98		97		70-130	1		30
Methyl tert butyl ether	96		95		66-130	1		30
p/m-Xylene	96		94		70-130	2		30
o-Xylene	96		93		70-130	3		30
cis-1,2-Dichloroethene	92		89		70-130	3		30
Dibromomethane	95		95		70-130	0		30
Styrene	96		94		70-130	2		30
Dichlorodifluoromethane	93		87		30-146	7		30
Acetone	138		131		54-140	5		30
Carbon disulfide	94		89		59-130	5		30
2-Butanone	115		116		70-130	1		30
Vinyl acetate	118		119		70-130	1		30
4-Methyl-2-pentanone	120		116		70-130	3		30
1,2,3-Trichloropropane	122		121		68-130	1		30
2-Hexanone	**134**	Q	127		70-130	5		30
Bromochloromethane	87		85		70-130	2		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
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Lab Number: L1932118
Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1263000-3 WG1263000-4								
2,2-Dichloropropane	89		86		70-130	3		30
1,2-Dibromoethane	102		100		70-130	2		30
1,3-Dichloropropane	115		112		69-130	3		30
1,1,1,2-Tetrachloroethane	88		87		70-130	1		30
Bromobenzene	96		94		70-130	2		30
n-Butylbenzene	112		110		70-130	2		30
sec-Butylbenzene	106		103		70-130	3		30
tert-Butylbenzene	101		99		70-130	2		30
o-Chlorotoluene	116		115		70-130	1		30
p-Chlorotoluene	113		112		70-130	1		30
1,2-Dibromo-3-chloropropane	88		88		68-130	0		30
Hexachlorobutadiene	78		78		67-130	0		30
Isopropylbenzene	106		103		70-130	3		30
p-Isopropyltoluene	101		99		70-130	2		30
Naphthalene	100		101		70-130	1		30
Acrylonitrile	117		117		70-130	0		30
n-Propylbenzene	112		109		70-130	3		30
1,2,3-Trichlorobenzene	90		91		70-130	1		30
1,2,4-Trichlorobenzene	89		89		70-130	0		30
1,3,5-Trimethylbenzene	106		104		70-130	2		30
1,2,4-Trimethylbenzene	107		105		70-130	2		30
1,4-Dioxane	80		77		65-136	4		30
p-Diethylbenzene	100		98		70-130	2		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG1263000-3 WG1263000-4								
p-Ethyltoluene	108		105		70-130	3		30
1,2,4,5-Tetramethylbenzene	100		98		70-130	2		30
Ethyl ether	100		99		67-130	1		30
trans-1,4-Dichloro-2-butene	123		121		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	116		117		70-130
Toluene-d8	110		110		70-130
4-Bromofluorobenzene	113		114		70-130
Dibromofluoromethane	96		96		70-130

SEMIVOLATILES

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-01
Client ID: SB15_8.0-8.5
Sample Location: BROOKLYN

Date Collected: 07/19/19 11:20
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/23/19 07:27
Analyst: JG
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 07/20/19 14:06

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	160		ug/kg	160	21.	1
1,2,4-Trichlorobenzene	ND		ug/kg	200	23.	1
Hexachlorobenzene	ND		ug/kg	120	23.	1
Bis(2-chloroethyl)ether	ND		ug/kg	180	28.	1
2-Chloronaphthalene	ND		ug/kg	200	20.	1
1,2-Dichlorobenzene	ND		ug/kg	200	37.	1
1,3-Dichlorobenzene	ND		ug/kg	200	35.	1
1,4-Dichlorobenzene	ND		ug/kg	200	36.	1
3,3'-Dichlorobenzidine	ND		ug/kg	200	54.	1
2,4-Dinitrotoluene	ND		ug/kg	200	41.	1
2,6-Dinitrotoluene	ND		ug/kg	200	35.	1
Fluoranthene	5000		ug/kg	120	23.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	200	22.	1
4-Bromophenyl phenyl ether	ND		ug/kg	200	31.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	240	35.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	20.	1
Hexachlorobutadiene	ND		ug/kg	200	30.	1
Hexachlorocyclopentadiene	ND		ug/kg	580	180	1
Hexachloroethane	ND		ug/kg	160	33.	1
Isophorone	ND		ug/kg	180	26.	1
Naphthalene	690		ug/kg	200	25.	1
Nitrobenzene	ND		ug/kg	180	30.	1
NDPA/DPA	ND		ug/kg	160	23.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	200	31.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	200	70.	1
Butyl benzyl phthalate	ND		ug/kg	200	51.	1
Di-n-butylphthalate	ND		ug/kg	200	39.	1
Di-n-octylphthalate	ND		ug/kg	200	69.	1

Project Name: 450 JOHNSON AVE **Lab Number:** L1932118

Project Number: 170588001 **Report Date:** 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-01 Date Collected: 07/19/19 11:20

Client ID: SB15_8.0-8.5 Date Received: 07/19/19

Sample Location: BROOKLYN Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	200	19.	1
Dimethyl phthalate	ND		ug/kg	200	43.	1
Benzo(a)anthracene	3500		ug/kg	120	23.	1
Benzo(a)pyrene	4300		ug/kg	160	50.	1
Benzo(b)fluoranthene	5200		ug/kg	120	34.	1
Benzo(k)fluoranthene	1000		ug/kg	120	33.	1
Chrysene	2900		ug/kg	120	21.	1
Acenaphthylene	1200		ug/kg	160	31.	1
Anthracene	890		ug/kg	120	40.	1
Benzo(ghi)perylene	3200		ug/kg	160	24.	1
Fluorene	220		ug/kg	200	20.	1
Phenanthrene	2400		ug/kg	120	25.	1
Dibenzo(a,h)anthracene	790		ug/kg	120	24.	1
Indeno(1,2,3-cd)pyrene	3100		ug/kg	160	28.	1
Pyrene	4900		ug/kg	120	20.	1
Biphenyl	ND		ug/kg	460	47.	1
4-Chloroaniline	ND		ug/kg	200	37.	1
2-Nitroaniline	ND		ug/kg	200	39.	1
3-Nitroaniline	ND		ug/kg	200	38.	1
4-Nitroaniline	ND		ug/kg	200	84.	1
Dibenzofuran	150	J	ug/kg	200	19.	1
2-Methylnaphthalene	130	J	ug/kg	240	25.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	200	21.	1
Acetophenone	ND		ug/kg	200	25.	1
2,4,6-Trichlorophenol	ND		ug/kg	120	39.	1
p-Chloro-m-cresol	ND		ug/kg	200	30.	1
2-Chlorophenol	ND		ug/kg	200	24.	1
2,4-Dichlorophenol	ND		ug/kg	180	33.	1
2,4-Dimethylphenol	ND		ug/kg	200	67.	1
2-Nitrophenol	ND		ug/kg	440	77.	1
4-Nitrophenol	ND		ug/kg	280	83.	1
2,4-Dinitrophenol	ND		ug/kg	980	95.	1
4,6-Dinitro-o-cresol	ND		ug/kg	530	98.	1
Pentachlorophenol	ND		ug/kg	160	45.	1
Phenol	190	J	ug/kg	200	31.	1
2-Methylphenol	69	J	ug/kg	200	32.	1
3-Methylphenol/4-Methylphenol	290		ug/kg	290	32.	1

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-01
Client ID: SB15_8.0-8.5
Sample Location: BROOKLYN
Date Collected: 07/19/19 11:20
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	200	39.	1
Benzoic Acid	ND		ug/kg	660	210	1
Benzyl Alcohol	ND		ug/kg	200	62.	1
Carbazole	420		ug/kg	200	20.	1
1,4-Dioxane	ND		ug/kg	30	9.4	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	64		25-120
Phenol-d6	74		10-120
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	64		30-120
2,4,6-Tribromophenol	76		10-136
4-Terphenyl-d14	59		18-120

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-03
Client ID: SB10_5.0-5.5
Sample Location: BROOKLYN

Date Collected: 07/19/19 09:40
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/23/19 06:36
Analyst: JG
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 07/20/19 14:06

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	330	J	ug/kg	470	61.	1
1,2,4-Trichlorobenzene	ND		ug/kg	590	67.	1
Hexachlorobenzene	ND		ug/kg	350	66.	1
Bis(2-chloroethyl)ether	ND		ug/kg	530	79.	1
2-Chloronaphthalene	ND		ug/kg	590	58.	1
1,2-Dichlorobenzene	ND		ug/kg	590	100	1
1,3-Dichlorobenzene	ND		ug/kg	590	100	1
1,4-Dichlorobenzene	ND		ug/kg	590	100	1
3,3'-Dichlorobenzidine	ND		ug/kg	590	160	1
2,4-Dinitrotoluene	ND		ug/kg	590	120	1
2,6-Dinitrotoluene	ND		ug/kg	590	100	1
Fluoranthene	4300		ug/kg	350	67.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	590	63.	1
4-Bromophenyl phenyl ether	ND		ug/kg	590	89.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	700	100	1
Bis(2-chloroethoxy)methane	ND		ug/kg	630	59.	1
Hexachlorobutadiene	ND		ug/kg	590	86.	1
Hexachlorocyclopentadiene	ND		ug/kg	1700	530	1
Hexachloroethane	ND		ug/kg	470	95.	1
Isophorone	ND		ug/kg	530	76.	1
Naphthalene	ND		ug/kg	590	71.	1
Nitrobenzene	ND		ug/kg	530	87.	1
NDPA/DPA	ND		ug/kg	470	67.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	590	90.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	590	200	1
Butyl benzyl phthalate	ND		ug/kg	590	150	1
Di-n-butylphthalate	ND		ug/kg	590	110	1
Di-n-octylphthalate	ND		ug/kg	590	200	1

Project Name: 450 JOHNSON AVE **Lab Number:** L1932118

Project Number: 170588001 **Report Date:** 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-03 Date Collected: 07/19/19 09:40

Client ID: SB10_5.0-5.5 Date Received: 07/19/19

Sample Location: BROOKLYN Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	590	54.	1
Dimethyl phthalate	ND		ug/kg	590	120	1
Benzo(a)anthracene	2900		ug/kg	350	66.	1
Benzo(a)pyrene	2000		ug/kg	470	140	1
Benzo(b)fluoranthene	2200		ug/kg	350	99.	1
Benzo(k)fluoranthene	760		ug/kg	350	94.	1
Chrysene	2700		ug/kg	350	61.	1
Acenaphthylene	100	J	ug/kg	470	90.	1
Anthracene	700		ug/kg	350	110	1
Benzo(ghi)perylene	1200		ug/kg	470	69.	1
Fluorene	250	J	ug/kg	590	57.	1
Phenanthrene	4000		ug/kg	350	71.	1
Dibenzo(a,h)anthracene	280	J	ug/kg	350	68.	1
Indeno(1,2,3-cd)pyrene	1200		ug/kg	470	82.	1
Pyrene	5500		ug/kg	350	58.	1
Biphenyl	ND		ug/kg	1300	140	1
4-Chloroaniline	ND		ug/kg	590	110	1
2-Nitroaniline	ND		ug/kg	590	110	1
3-Nitroaniline	ND		ug/kg	590	110	1
4-Nitroaniline	ND		ug/kg	590	240	1
Dibenzofuran	82	J	ug/kg	590	55.	1
2-Methylnaphthalene	ND		ug/kg	700	71.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	590	61.	1
Acetophenone	ND		ug/kg	590	72.	1
2,4,6-Trichlorophenol	ND		ug/kg	350	110	1
p-Chloro-m-cresol	ND		ug/kg	590	87.	1
2-Chlorophenol	ND		ug/kg	590	69.	1
2,4-Dichlorophenol	ND		ug/kg	530	94.	1
2,4-Dimethylphenol	ND		ug/kg	590	190	1
2-Nitrophenol	ND		ug/kg	1300	220	1
4-Nitrophenol	ND		ug/kg	820	240	1
2,4-Dinitrophenol	ND		ug/kg	2800	270	1
4,6-Dinitro-o-cresol	ND		ug/kg	1500	280	1
Pentachlorophenol	ND		ug/kg	470	130	1
Phenol	ND		ug/kg	590	88.	1
2-Methylphenol	ND		ug/kg	590	91.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	840	92.	1

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-03
Client ID: SB10_5.0-5.5
Sample Location: BROOKLYN
Date Collected: 07/19/19 09:40
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	590	110	1
Benzoic Acid	ND		ug/kg	1900	590	1
Benzyl Alcohol	ND		ug/kg	590	180	1
Carbazole	160	J	ug/kg	590	57.	1
1,4-Dioxane	ND		ug/kg	88	27.	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	67		25-120
Phenol-d6	71		10-120
Nitrobenzene-d5	75		23-120
2-Fluorobiphenyl	71		30-120
2,4,6-Tribromophenol	84		10-136
4-Terphenyl-d14	72		18-120

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-04
Client ID: SB16_3.0-3.5
Sample Location: BROOKLYN

Date Collected: 07/19/19 12:15
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/23/19 07:53
Analyst: JG
Percent Solids: 80%

Extraction Method: EPA 3546
Extraction Date: 07/20/19 14:06

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	86	J	ug/kg	170	22.	1
1,2,4-Trichlorobenzene	ND		ug/kg	210	24.	1
Hexachlorobenzene	ND		ug/kg	120	23.	1
Bis(2-chloroethyl)ether	ND		ug/kg	190	28.	1
2-Chloronaphthalene	ND		ug/kg	210	21.	1
1,2-Dichlorobenzene	ND		ug/kg	210	37.	1
1,3-Dichlorobenzene	ND		ug/kg	210	36.	1
1,4-Dichlorobenzene	ND		ug/kg	210	36.	1
3,3'-Dichlorobenzidine	ND		ug/kg	210	55.	1
2,4-Dinitrotoluene	ND		ug/kg	210	42.	1
2,6-Dinitrotoluene	ND		ug/kg	210	36.	1
Fluoranthene	1300		ug/kg	120	24.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	210	22.	1
4-Bromophenyl phenyl ether	ND		ug/kg	210	32.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	250	35.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	220	21.	1
Hexachlorobutadiene	ND		ug/kg	210	30.	1
Hexachlorocyclopentadiene	ND		ug/kg	590	190	1
Hexachloroethane	ND		ug/kg	170	34.	1
Isophorone	ND		ug/kg	190	27.	1
Naphthalene	820		ug/kg	210	25.	1
Nitrobenzene	ND		ug/kg	190	31.	1
NDPA/DPA	ND		ug/kg	170	24.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	210	32.	1
Bis(2-ethylhexyl)phthalate	74	J	ug/kg	210	72.	1
Butyl benzyl phthalate	ND		ug/kg	210	52.	1
Di-n-butylphthalate	ND		ug/kg	210	39.	1
Di-n-octylphthalate	ND		ug/kg	210	71.	1

Project Name: 450 JOHNSON AVE **Lab Number:** L1932118

Project Number: 170588001 **Report Date:** 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-04 Date Collected: 07/19/19 12:15

Client ID: SB16_3.0-3.5 Date Received: 07/19/19

Sample Location: BROOKLYN Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	210	19.	1
Dimethyl phthalate	ND		ug/kg	210	44.	1
Benzo(a)anthracene	760		ug/kg	120	23.	1
Benzo(a)pyrene	650		ug/kg	170	51.	1
Benzo(b)fluoranthene	850		ug/kg	120	35.	1
Benzo(k)fluoranthene	270		ug/kg	120	33.	1
Chrysene	680		ug/kg	120	22.	1
Acenaphthylene	140	J	ug/kg	170	32.	1
Anthracene	220		ug/kg	120	40.	1
Benzo(ghi)perylene	520		ug/kg	170	24.	1
Fluorene	120	J	ug/kg	210	20.	1
Phenanthrene	870		ug/kg	120	25.	1
Dibenzo(a,h)anthracene	120		ug/kg	120	24.	1
Indeno(1,2,3-cd)pyrene	530		ug/kg	170	29.	1
Pyrene	1300		ug/kg	120	21.	1
Biphenyl	ND		ug/kg	470	48.	1
4-Chloroaniline	ND		ug/kg	210	38.	1
2-Nitroaniline	ND		ug/kg	210	40.	1
3-Nitroaniline	ND		ug/kg	210	39.	1
4-Nitroaniline	ND		ug/kg	210	86.	1
Dibenzofuran	51	J	ug/kg	210	20.	1
2-Methylnaphthalene	140	J	ug/kg	250	25.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	210	22.	1
Acetophenone	ND		ug/kg	210	26.	1
2,4,6-Trichlorophenol	ND		ug/kg	120	39.	1
p-Chloro-m-cresol	ND		ug/kg	210	31.	1
2-Chlorophenol	ND		ug/kg	210	24.	1
2,4-Dichlorophenol	ND		ug/kg	190	33.	1
2,4-Dimethylphenol	ND		ug/kg	210	68.	1
2-Nitrophenol	ND		ug/kg	450	78.	1
4-Nitrophenol	ND		ug/kg	290	85.	1
2,4-Dinitrophenol	ND		ug/kg	1000	97.	1
4,6-Dinitro-o-cresol	ND		ug/kg	540	100	1
Pentachlorophenol	ND		ug/kg	170	46.	1
Phenol	ND		ug/kg	210	31.	1
2-Methylphenol	ND		ug/kg	210	32.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	32.	1

Project Name: 450 JOHNSON AVE
Lab Number: L1932118
Project Number: 170588001
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-04
Client ID: SB16_3.0-3.5
Sample Location: BROOKLYN
Date Collected: 07/19/19 12:15
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	210	40.	1
Benzoic Acid	ND		ug/kg	670	210	1
Benzyl Alcohol	ND		ug/kg	210	64.	1
Carbazole	88	J	ug/kg	210	20.	1
1,4-Dioxane	ND		ug/kg	31	9.6	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	64		25-120
Phenol-d6	70		10-120
Nitrobenzene-d5	60		23-120
2-Fluorobiphenyl	61		30-120
2,4,6-Tribromophenol	72		10-136
4-Terphenyl-d14	61		18-120

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-05
Client ID: SB17_13.0-13.5
Sample Location: BROOKLYN

Date Collected: 07/19/19 13:20
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/23/19 08:18
Analyst: JG
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 07/20/19 14:06

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	38	J	ug/kg	140	18.	1
1,2,4-Trichlorobenzene	ND		ug/kg	180	20.	1
Hexachlorobenzene	ND		ug/kg	110	20.	1
Bis(2-chloroethyl)ether	ND		ug/kg	160	24.	1
2-Chloronaphthalene	ND		ug/kg	180	18.	1
1,2-Dichlorobenzene	ND		ug/kg	180	32.	1
1,3-Dichlorobenzene	ND		ug/kg	180	30.	1
1,4-Dichlorobenzene	ND		ug/kg	180	31.	1
3,3'-Dichlorobenzidine	ND		ug/kg	180	47.	1
2,4-Dinitrotoluene	ND		ug/kg	180	36.	1
2,6-Dinitrotoluene	ND		ug/kg	180	30.	1
Fluoranthene	480		ug/kg	110	20.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	180	19.	1
4-Bromophenyl phenyl ether	ND		ug/kg	180	27.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	210	30.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	190	18.	1
Hexachlorobutadiene	ND		ug/kg	180	26.	1
Hexachlorocyclopentadiene	ND		ug/kg	510	160	1
Hexachloroethane	ND		ug/kg	140	29.	1
Isophorone	ND		ug/kg	160	23.	1
Naphthalene	67	J	ug/kg	180	22.	1
Nitrobenzene	ND		ug/kg	160	26.	1
NDPA/DPA	ND		ug/kg	140	20.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	180	27.	1
Bis(2-ethylhexyl)phthalate	76	J	ug/kg	180	62.	1
Butyl benzyl phthalate	ND		ug/kg	180	45.	1
Di-n-butylphthalate	ND		ug/kg	180	34.	1
Di-n-octylphthalate	ND		ug/kg	180	60.	1

Project Name: 450 JOHNSON AVE **Lab Number:** L1932118

Project Number: 170588001 **Report Date:** 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-05 Date Collected: 07/19/19 13:20

Client ID: SB17_13.0-13.5 Date Received: 07/19/19

Sample Location: BROOKLYN Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	180	16.	1
Dimethyl phthalate	ND		ug/kg	180	37.	1
Benzo(a)anthracene	290		ug/kg	110	20.	1
Benzo(a)pyrene	250		ug/kg	140	43.	1
Benzo(b)fluoranthene	300		ug/kg	110	30.	1
Benzo(k)fluoranthene	88	J	ug/kg	110	28.	1
Chrysene	380		ug/kg	110	18.	1
Acenaphthylene	30	J	ug/kg	140	27.	1
Anthracene	90	J	ug/kg	110	35.	1
Benzo(ghi)perylene	260		ug/kg	140	21.	1
Fluorene	52	J	ug/kg	180	17.	1
Phenanthrene	480		ug/kg	110	22.	1
Dibenzo(a,h)anthracene	56	J	ug/kg	110	20.	1
Indeno(1,2,3-cd)pyrene	180		ug/kg	140	25.	1
Pyrene	500		ug/kg	110	18.	1
Biphenyl	ND		ug/kg	400	41.	1
4-Chloroaniline	ND		ug/kg	180	32.	1
2-Nitroaniline	ND		ug/kg	180	34.	1
3-Nitroaniline	ND		ug/kg	180	34.	1
4-Nitroaniline	ND		ug/kg	180	74.	1
Dibenzofuran	32	J	ug/kg	180	17.	1
2-Methylnaphthalene	50	J	ug/kg	210	21.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	180	18.	1
Acetophenone	ND		ug/kg	180	22.	1
2,4,6-Trichlorophenol	ND		ug/kg	110	34.	1
p-Chloro-m-cresol	ND		ug/kg	180	26.	1
2-Chlorophenol	ND		ug/kg	180	21.	1
2,4-Dichlorophenol	ND		ug/kg	160	28.	1
2,4-Dimethylphenol	ND		ug/kg	180	59.	1
2-Nitrophenol	ND		ug/kg	380	67.	1
4-Nitrophenol	ND		ug/kg	250	72.	1
2,4-Dinitrophenol	ND		ug/kg	850	83.	1
4,6-Dinitro-o-cresol	ND		ug/kg	460	85.	1
Pentachlorophenol	ND		ug/kg	140	39.	1
Phenol	ND		ug/kg	180	27.	1
2-Methylphenol	ND		ug/kg	180	28.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	260	28.	1

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-05
Client ID: SB17_13.0-13.5
Sample Location: BROOKLYN
Date Collected: 07/19/19 13:20
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	180	34.	1
Benzoic Acid	ND		ug/kg	580	180	1
Benzyl Alcohol	ND		ug/kg	180	54.	1
Carbazole	42	J	ug/kg	180	17.	1
1,4-Dioxane	ND		ug/kg	27	8.2	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	77		25-120
Phenol-d6	81		10-120
Nitrobenzene-d5	84		23-120
2-Fluorobiphenyl	70		30-120
2,4,6-Tribromophenol	75		10-136
4-Terphenyl-d14	70		18-120

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-06
Client ID: SB18_4.0-4.5
Sample Location: BROOKLYN
Date Collected: 07/19/19 14:00
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270D
Analytical Date: 07/23/19 06:11
Analyst: JG
Percent Solids: 86%
Extraction Method: EPA 3546
Extraction Date: 07/20/19 14:06

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	280		ug/kg	150	20.	1
1,2,4-Trichlorobenzene	ND		ug/kg	190	22.	1
Hexachlorobenzene	ND		ug/kg	110	21.	1
Bis(2-chloroethyl)ether	ND		ug/kg	170	26.	1
2-Chloronaphthalene	ND		ug/kg	190	19.	1
1,2-Dichlorobenzene	ND		ug/kg	190	34.	1
1,3-Dichlorobenzene	ND		ug/kg	190	32.	1
1,4-Dichlorobenzene	ND		ug/kg	190	33.	1
3,3'-Dichlorobenzidine	ND		ug/kg	190	50.	1
2,4-Dinitrotoluene	ND		ug/kg	190	38.	1
2,6-Dinitrotoluene	ND		ug/kg	190	32.	1
Fluoranthene	2300		ug/kg	110	22.	1
4-Chlorophenyl phenyl ether	ND		ug/kg	190	20.	1
4-Bromophenyl phenyl ether	ND		ug/kg	190	29.	1
Bis(2-chloroisopropyl)ether	ND		ug/kg	230	32.	1
Bis(2-chloroethoxy)methane	ND		ug/kg	200	19.	1
Hexachlorobutadiene	ND		ug/kg	190	28.	1
Hexachlorocyclopentadiene	ND		ug/kg	540	170	1
Hexachloroethane	ND		ug/kg	150	30.	1
Isophorone	ND		ug/kg	170	24.	1
Naphthalene	43	J	ug/kg	190	23.	1
Nitrobenzene	ND		ug/kg	170	28.	1
NDPA/DPA	ND		ug/kg	150	21.	1
n-Nitrosodi-n-propylamine	ND		ug/kg	190	29.	1
Bis(2-ethylhexyl)phthalate	ND		ug/kg	190	65.	1
Butyl benzyl phthalate	ND		ug/kg	190	47.	1
Di-n-butylphthalate	ND		ug/kg	190	36.	1
Di-n-octylphthalate	ND		ug/kg	190	64.	1

Project Name: 450 JOHNSON AVE **Lab Number:** L1932118

Project Number: 170588001 **Report Date:** 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-06 Date Collected: 07/19/19 14:00

Client ID: SB18_4.0-4.5 Date Received: 07/19/19

Sample Location: BROOKLYN Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Diethyl phthalate	ND		ug/kg	190	17.	1
Dimethyl phthalate	ND		ug/kg	190	40.	1
Benzo(a)anthracene	1200		ug/kg	110	21.	1
Benzo(a)pyrene	920		ug/kg	150	46.	1
Benzo(b)fluoranthene	1100		ug/kg	110	32.	1
Benzo(k)fluoranthene	430		ug/kg	110	30.	1
Chrysene	970		ug/kg	110	20.	1
Acenaphthylene	29	J	ug/kg	150	29.	1
Anthracene	540		ug/kg	110	37.	1
Benzo(ghi)perylene	520		ug/kg	150	22.	1
Fluorene	210		ug/kg	190	18.	1
Phenanthrene	2200		ug/kg	110	23.	1
Dibenzo(a,h)anthracene	140		ug/kg	110	22.	1
Indeno(1,2,3-cd)pyrene	600		ug/kg	150	26.	1
Pyrene	2000		ug/kg	110	19.	1
Biphenyl	ND		ug/kg	430	44.	1
4-Chloroaniline	ND		ug/kg	190	34.	1
2-Nitroaniline	ND		ug/kg	190	36.	1
3-Nitroaniline	ND		ug/kg	190	36.	1
4-Nitroaniline	ND		ug/kg	190	78.	1
Dibenzofuran	120	J	ug/kg	190	18.	1
2-Methylnaphthalene	32	J	ug/kg	230	23.	1
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	190	20.	1
Acetophenone	ND		ug/kg	190	23.	1
2,4,6-Trichlorophenol	ND		ug/kg	110	36.	1
p-Chloro-m-cresol	ND		ug/kg	190	28.	1
2-Chlorophenol	ND		ug/kg	190	22.	1
2,4-Dichlorophenol	ND		ug/kg	170	30.	1
2,4-Dimethylphenol	ND		ug/kg	190	62.	1
2-Nitrophenol	ND		ug/kg	410	71.	1
4-Nitrophenol	ND		ug/kg	260	77.	1
2,4-Dinitrophenol	ND		ug/kg	900	88.	1
4,6-Dinitro-o-cresol	ND		ug/kg	490	90.	1
Pentachlorophenol	ND		ug/kg	150	41.	1
Phenol	ND		ug/kg	190	28.	1
2-Methylphenol	ND		ug/kg	190	29.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	270	29.	1

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-06
Client ID: SB18_4.0-4.5
Sample Location: BROOKLYN
Date Collected: 07/19/19 14:00
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
2,4,5-Trichlorophenol	ND		ug/kg	190	36.	1
Benzoic Acid	ND		ug/kg	610	190	1
Benzyl Alcohol	ND		ug/kg	190	58.	1
Carbazole	180	J	ug/kg	190	18.	1
1,4-Dioxane	ND		ug/kg	28	8.7	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	71		25-120
Phenol-d6	74		10-120
Nitrobenzene-d5	80		23-120
2-Fluorobiphenyl	70		30-120
2,4,6-Tribromophenol	75		10-136
4-Terphenyl-d14	72		18-120

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-07
Client ID: TMW07_071919
Sample Location: BROOKLYN

Date Collected: 07/19/19 09:00
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D
Analytical Date: 07/23/19 16:38
Analyst: JG

Extraction Method: EPA 3510C
Extraction Date: 07/20/19 09:06

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.50	1
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50	1
1,2-Dichlorobenzene	ND		ug/l	2.0	0.45	1
1,3-Dichlorobenzene	ND		ug/l	2.0	0.40	1
1,4-Dichlorobenzene	ND		ug/l	2.0	0.43	1
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6	1
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2	1
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93	1
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49	1
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38	1
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53	1
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50	1
Hexachlorocyclopentadiene	ND		ug/l	20	0.69	1
Isophorone	ND		ug/l	5.0	1.2	1
Nitrobenzene	ND		ug/l	2.0	0.77	1
NDPA/DPA	ND		ug/l	2.0	0.42	1
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64	1
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5	1
Butyl benzyl phthalate	ND		ug/l	5.0	1.2	1
Di-n-butylphthalate	ND		ug/l	5.0	0.39	1
Di-n-octylphthalate	ND		ug/l	5.0	1.3	1
Diethyl phthalate	ND		ug/l	5.0	0.38	1
Dimethyl phthalate	ND		ug/l	5.0	1.8	1
Biphenyl	ND		ug/l	2.0	0.46	1
4-Chloroaniline	ND		ug/l	5.0	1.1	1
2-Nitroaniline	ND		ug/l	5.0	0.50	1
3-Nitroaniline	ND		ug/l	5.0	0.81	1
4-Nitroaniline	ND		ug/l	5.0	0.80	1

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-07
Client ID: TMW07_071919
Sample Location: BROOKLYN
Date Collected: 07/19/19 09:00
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Dibenzofuran	ND		ug/l	2.0	0.50	1
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44	1
Acetophenone	ND		ug/l	5.0	0.53	1
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61	1
p-Chloro-m-cresol	ND		ug/l	2.0	0.35	1
2-Chlorophenol	ND		ug/l	2.0	0.48	1
2,4-Dichlorophenol	ND		ug/l	5.0	0.41	1
2,4-Dimethylphenol	ND		ug/l	5.0	1.8	1
2-Nitrophenol	ND		ug/l	10	0.85	1
4-Nitrophenol	ND		ug/l	10	0.67	1
2,4-Dinitrophenol	ND		ug/l	20	6.6	1
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8	1
Phenol	ND		ug/l	5.0	0.57	1
2-Methylphenol	ND		ug/l	5.0	0.49	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48	1
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77	1
Benzoic Acid	9.4	J	ug/l	50	2.6	1
Benzyl Alcohol	ND		ug/l	2.0	0.59	1
Carbazole	ND		ug/l	2.0	0.49	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	54		21-120
Phenol-d6	47		10-120
Nitrobenzene-d5	71		23-120
2-Fluorobiphenyl	74		15-120
2,4,6-Tribromophenol	62		10-120
4-Terphenyl-d14	80		41-149

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-07
Client ID: TMW07_071919
Sample Location: BROOKLYN

Date Collected: 07/19/19 09:00
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270D-SIM
Analytical Date: 07/24/19 17:03
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 07/20/19 09:07

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	0.03	J	ug/l	0.10	0.01	1
2-Chloronaphthalene	ND		ug/l	0.20	0.02	1
Fluoranthene	0.46		ug/l	0.10	0.02	1
Hexachlorobutadiene	ND		ug/l	0.50	0.05	1
Naphthalene	0.87		ug/l	0.10	0.05	1
Benzo(a)anthracene	0.25		ug/l	0.10	0.02	1
Benzo(a)pyrene	0.22		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	0.31		ug/l	0.10	0.01	1
Benzo(k)fluoranthene	0.11		ug/l	0.10	0.01	1
Chrysene	0.26		ug/l	0.10	0.01	1
Acenaphthylene	ND		ug/l	0.10	0.01	1
Anthracene	0.06	J	ug/l	0.10	0.01	1
Benzo(ghi)perylene	0.20		ug/l	0.10	0.01	1
Fluorene	0.03	J	ug/l	0.10	0.01	1
Phenanthrene	0.25		ug/l	0.10	0.02	1
Dibenzo(a,h)anthracene	0.04	J	ug/l	0.10	0.01	1
Indeno(1,2,3-cd)pyrene	0.21		ug/l	0.10	0.01	1
Pyrene	0.45		ug/l	0.10	0.02	1
2-Methylnaphthalene	0.03	J	ug/l	0.10	0.02	1
Pentachlorophenol	ND		ug/l	0.80	0.01	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1
Hexachloroethane	ND		ug/l	0.80	0.06	1

Project Name: 450 JOHNSON AVE
Lab Number: L1932118
Project Number: 170588001
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-07
Client ID: TMW07_071919
Sample Location: BROOKLYN
Date Collected: 07/19/19 09:00
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	35		21-120
Phenol-d6	37		10-120
Nitrobenzene-d5	67		23-120
2-Fluorobiphenyl	66		15-120
2,4,6-Tribromophenol	26		10-120
4-Terphenyl-d14	64		41-149

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/20/19 22:38
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 07/19/19 15:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 07 Batch: WG1262165-1					
Acenaphthene	ND		ug/l	2.0	0.44
1,2,4-Trichlorobenzene	ND		ug/l	5.0	0.50
Hexachlorobenzene	ND		ug/l	2.0	0.46
Bis(2-chloroethyl)ether	ND		ug/l	2.0	0.50
2-Chloronaphthalene	ND		ug/l	2.0	0.44
1,2-Dichlorobenzene	ND		ug/l	2.0	0.45
1,3-Dichlorobenzene	ND		ug/l	2.0	0.40
1,4-Dichlorobenzene	ND		ug/l	2.0	0.43
3,3'-Dichlorobenzidine	ND		ug/l	5.0	1.6
2,4-Dinitrotoluene	ND		ug/l	5.0	1.2
2,6-Dinitrotoluene	ND		ug/l	5.0	0.93
Fluoranthene	ND		ug/l	2.0	0.26
4-Chlorophenyl phenyl ether	ND		ug/l	2.0	0.49
4-Bromophenyl phenyl ether	ND		ug/l	2.0	0.38
Bis(2-chloroisopropyl)ether	ND		ug/l	2.0	0.53
Bis(2-chloroethoxy)methane	ND		ug/l	5.0	0.50
Hexachlorobutadiene	ND		ug/l	2.0	0.66
Hexachlorocyclopentadiene	ND		ug/l	20	0.69
Hexachloroethane	ND		ug/l	2.0	0.58
Isophorone	ND		ug/l	5.0	1.2
Naphthalene	ND		ug/l	2.0	0.46
Nitrobenzene	ND		ug/l	2.0	0.77
NDPA/DPA	ND		ug/l	2.0	0.42
n-Nitrosodi-n-propylamine	ND		ug/l	5.0	0.64
Bis(2-ethylhexyl)phthalate	ND		ug/l	3.0	1.5
Butyl benzyl phthalate	ND		ug/l	5.0	1.2
Di-n-butylphthalate	ND		ug/l	5.0	0.39
Di-n-octylphthalate	ND		ug/l	5.0	1.3
Diethyl phthalate	ND		ug/l	5.0	0.38

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/20/19 22:38
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 07/19/19 15:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 07 Batch: WG1262165-1					
Dimethyl phthalate	ND		ug/l	5.0	1.8
Benzo(a)anthracene	ND		ug/l	2.0	0.32
Benzo(a)pyrene	ND		ug/l	2.0	0.41
Benzo(b)fluoranthene	ND		ug/l	2.0	0.35
Benzo(k)fluoranthene	ND		ug/l	2.0	0.37
Chrysene	ND		ug/l	2.0	0.34
Acenaphthylene	ND		ug/l	2.0	0.46
Anthracene	ND		ug/l	2.0	0.33
Benzo(ghi)perylene	ND		ug/l	2.0	0.30
Fluorene	ND		ug/l	2.0	0.41
Phenanthrene	ND		ug/l	2.0	0.33
Dibenzo(a,h)anthracene	ND		ug/l	2.0	0.32
Indeno(1,2,3-cd)pyrene	ND		ug/l	2.0	0.40
Pyrene	ND		ug/l	2.0	0.28
Biphenyl	ND		ug/l	2.0	0.46
4-Chloroaniline	ND		ug/l	5.0	1.1
2-Nitroaniline	ND		ug/l	5.0	0.50
3-Nitroaniline	ND		ug/l	5.0	0.81
4-Nitroaniline	ND		ug/l	5.0	0.80
Dibenzofuran	ND		ug/l	2.0	0.50
2-Methylnaphthalene	ND		ug/l	2.0	0.45
1,2,4,5-Tetrachlorobenzene	ND		ug/l	10	0.44
Acetophenone	ND		ug/l	5.0	0.53
2,4,6-Trichlorophenol	ND		ug/l	5.0	0.61
p-Chloro-m-cresol	ND		ug/l	2.0	0.35
2-Chlorophenol	ND		ug/l	2.0	0.48
2,4-Dichlorophenol	ND		ug/l	5.0	0.41
2,4-Dimethylphenol	ND		ug/l	5.0	1.8
2-Nitrophenol	ND		ug/l	10	0.85

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/20/19 22:38
Analyst: SZ

Extraction Method: EPA 3510C
Extraction Date: 07/19/19 15:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 07 Batch: WG1262165-1					
4-Nitrophenol	ND		ug/l	10	0.67
2,4-Dinitrophenol	ND		ug/l	20	6.6
4,6-Dinitro-o-cresol	ND		ug/l	10	1.8
Pentachlorophenol	ND		ug/l	10	1.8
Phenol	ND		ug/l	5.0	0.57
2-Methylphenol	ND		ug/l	5.0	0.49
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	0.48
2,4,5-Trichlorophenol	ND		ug/l	5.0	0.77
Benzoic Acid	ND		ug/l	50	2.6
Benzyl Alcohol	ND		ug/l	2.0	0.59
Carbazole	ND		ug/l	2.0	0.49

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	48		21-120
Phenol-d6	37		10-120
Nitrobenzene-d5	59		23-120
2-Fluorobiphenyl	70		15-120
2,4,6-Tribromophenol	57		10-120
4-Terphenyl-d14	92		41-149

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 07/21/19 11:48
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 07/19/19 15:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 07 Batch: WG1262166-1					
Acenaphthene	ND		ug/l	0.10	0.01
2-Chloronaphthalene	ND		ug/l	0.20	0.02
Fluoranthene	ND		ug/l	0.10	0.02
Hexachlorobutadiene	ND		ug/l	0.50	0.05
Naphthalene	ND		ug/l	0.10	0.05
Benzo(a)anthracene	ND		ug/l	0.10	0.02
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(b)fluoranthene	ND		ug/l	0.10	0.01
Benzo(k)fluoranthene	ND		ug/l	0.10	0.01
Chrysene	ND		ug/l	0.10	0.01
Acenaphthylene	ND		ug/l	0.10	0.01
Anthracene	ND		ug/l	0.10	0.01
Benzo(ghi)perylene	ND		ug/l	0.10	0.01
Fluorene	ND		ug/l	0.10	0.01
Phenanthrene	ND		ug/l	0.10	0.02
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.01
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.01
Pyrene	ND		ug/l	0.10	0.02
2-Methylnaphthalene	ND		ug/l	0.10	0.02
Pentachlorophenol	ND		ug/l	0.80	0.01
Hexachlorobenzene	ND		ug/l	0.80	0.01
Hexachloroethane	ND		ug/l	0.80	0.06

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D-SIM
Analytical Date: 07/21/19 11:48
Analyst: DV

Extraction Method: EPA 3510C
Extraction Date: 07/19/19 15:43

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 07 Batch: WG1262166-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	48		21-120
Phenol-d6	38		10-120
Nitrobenzene-d5	64		23-120
2-Fluorobiphenyl	68		15-120
2,4,6-Tribromophenol	61		10-120
4-Terphenyl-d14	98		41-149

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/21/19 13:28
Analyst: RC

Extraction Method: EPA 3546
Extraction Date: 07/20/19 14:06

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,03-06 Batch: WG1262491-1					
Acenaphthene	ND		ug/kg	130	17.
1,2,4-Trichlorobenzene	ND		ug/kg	160	19.
Hexachlorobenzene	ND		ug/kg	99	18.
Bis(2-chloroethyl)ether	ND		ug/kg	150	22.
2-Chloronaphthalene	ND		ug/kg	160	16.
1,2-Dichlorobenzene	ND		ug/kg	160	30.
1,3-Dichlorobenzene	ND		ug/kg	160	28.
1,4-Dichlorobenzene	ND		ug/kg	160	29.
3,3'-Dichlorobenzidine	ND		ug/kg	160	44.
2,4-Dinitrotoluene	ND		ug/kg	160	33.
2,6-Dinitrotoluene	ND		ug/kg	160	28.
Fluoranthene	ND		ug/kg	99	19.
4-Chlorophenyl phenyl ether	ND		ug/kg	160	18.
4-Bromophenyl phenyl ether	ND		ug/kg	160	25.
Bis(2-chloroisopropyl)ether	ND		ug/kg	200	28.
Bis(2-chloroethoxy)methane	ND		ug/kg	180	16.
Hexachlorobutadiene	ND		ug/kg	160	24.
Hexachlorocyclopentadiene	ND		ug/kg	470	150
Hexachloroethane	ND		ug/kg	130	27.
Isophorone	ND		ug/kg	150	21.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	150	24.
NDPA/DPA	ND		ug/kg	130	19.
n-Nitrosodi-n-propylamine	ND		ug/kg	160	25.
Bis(2-ethylhexyl)phthalate	ND		ug/kg	160	57.
Butyl benzyl phthalate	ND		ug/kg	160	42.
Di-n-butylphthalate	ND		ug/kg	160	31.
Di-n-octylphthalate	ND		ug/kg	160	56.
Diethyl phthalate	ND		ug/kg	160	15.

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/21/19 13:28
Analyst: RC

Extraction Method: EPA 3546
Extraction Date: 07/20/19 14:06

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,03-06 Batch: WG1262491-1					
Dimethyl phthalate	ND		ug/kg	160	35.
Benzo(a)anthracene	ND		ug/kg	99	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	99	28.
Benzo(k)fluoranthene	ND		ug/kg	99	26.
Chrysene	ND		ug/kg	99	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	99	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	99	20.
Dibenzo(a,h)anthracene	ND		ug/kg	99	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	99	16.
Biphenyl	ND		ug/kg	380	38.
4-Chloroaniline	ND		ug/kg	160	30.
2-Nitroaniline	ND		ug/kg	160	32.
3-Nitroaniline	ND		ug/kg	160	31.
4-Nitroaniline	ND		ug/kg	160	68.
Dibenzofuran	ND		ug/kg	160	16.
2-Methylnaphthalene	ND		ug/kg	200	20.
1,2,4,5-Tetrachlorobenzene	ND		ug/kg	160	17.
Acetophenone	ND		ug/kg	160	20.
2,4,6-Trichlorophenol	ND		ug/kg	99	31.
p-Chloro-m-cresol	ND		ug/kg	160	24.
2-Chlorophenol	ND		ug/kg	160	20.
2,4-Dichlorophenol	ND		ug/kg	150	26.
2,4-Dimethylphenol	ND		ug/kg	160	54.
2-Nitrophenol	ND		ug/kg	360	62.

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270D
Analytical Date: 07/21/19 13:28
Analyst: RC

Extraction Method: EPA 3546
Extraction Date: 07/20/19 14:06

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,03-06 Batch: WG1262491-1					
4-Nitrophenol	ND		ug/kg	230	67.
2,4-Dinitrophenol	ND		ug/kg	790	77.
4,6-Dinitro-o-cresol	ND		ug/kg	430	79.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	26.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.
2,4,5-Trichlorophenol	ND		ug/kg	160	32.
Benzoic Acid	ND		ug/kg	530	170
Benzyl Alcohol	ND		ug/kg	160	50.
Carbazole	ND		ug/kg	160	16.
1,4-Dioxane	ND		ug/kg	25	7.6

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	71		25-120
Phenol-d6	74		10-120
Nitrobenzene-d5	76		23-120
2-Fluorobiphenyl	76		30-120
2,4,6-Tribromophenol	80		10-136
4-Terphenyl-d14	73		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 07 Batch: WG1262165-2 WG1262165-3								
Acenaphthene	66		65		37-111	2		30
1,2,4-Trichlorobenzene	72		67		39-98	7		30
Hexachlorobenzene	80		83		40-140	4		30
Bis(2-chloroethyl)ether	67		61		40-140	9		30
2-Chloronaphthalene	75		72		40-140	4		30
1,2-Dichlorobenzene	67		62		40-140	8		30
1,3-Dichlorobenzene	66		62		40-140	6		30
1,4-Dichlorobenzene	67		61		36-97	9		30
3,3'-Dichlorobenzidine	67		63		40-140	6		30
2,4-Dinitrotoluene	68		73		48-143	7		30
2,6-Dinitrotoluene	77		84		40-140	9		30
Fluoranthene	84		89		40-140	6		30
4-Chlorophenyl phenyl ether	73		73		40-140	0		30
4-Bromophenyl phenyl ether	82		82		40-140	0		30
Bis(2-chloroisopropyl)ether	82		76		40-140	8		30
Bis(2-chloroethoxy)methane	75		71		40-140	5		30
Hexachlorobutadiene	77		72		40-140	7		30
Hexachlorocyclopentadiene	78		72		40-140	8		30
Hexachloroethane	71		63		40-140	12		30
Isophorone	75		74		40-140	1		30
Naphthalene	67		64		40-140	5		30
Nitrobenzene	74		72		40-140	3		30
NDPA/DPA	75		74		40-140	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 07 Batch: WG1262165-2 WG1262165-3								
n-Nitrosodi-n-propylamine	79		76		29-132	4		30
Bis(2-ethylhexyl)phthalate	80		81		40-140	1		30
Butyl benzyl phthalate	86		92		40-140	7		30
Di-n-butylphthalate	81		86		40-140	6		30
Di-n-octylphthalate	86		89		40-140	3		30
Diethyl phthalate	80		86		40-140	7		30
Dimethyl phthalate	84		88		40-140	5		30
Benzo(a)anthracene	79		85		40-140	7		30
Benzo(a)pyrene	80		90		40-140	12		30
Benzo(b)fluoranthene	80		90		40-140	12		30
Benzo(k)fluoranthene	84		91		40-140	8		30
Chrysene	78		82		40-140	5		30
Acenaphthylene	77		75		45-123	3		30
Anthracene	79		81		40-140	3		30
Benzo(ghi)perylene	76		84		40-140	10		30
Fluorene	70		71		40-140	1		30
Phenanthrene	76		78		40-140	3		30
Dibenzo(a,h)anthracene	77		82		40-140	6		30
Indeno(1,2,3-cd)pyrene	73		80		40-140	9		30
Pyrene	80		88		26-127	10		30
Biphenyl	68		66		40-140	3		30
4-Chloroaniline	77		68		40-140	12		30
2-Nitroaniline	74		80		52-143	8		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 07 Batch: WG1262165-2 WG1262165-3								
3-Nitroaniline	57		67		25-145	16		30
4-Nitroaniline	63		72		51-143	13		30
Dibenzofuran	68		66		40-140	3		30
2-Methylnaphthalene	69		66		40-140	4		30
1,2,4,5-Tetrachlorobenzene	70		69		2-134	1		30
Acetophenone	63		62		39-129	2		30
2,4,6-Trichlorophenol	80		80		30-130	0		30
p-Chloro-m-cresol	80		81		23-97	1		30
2-Chlorophenol	70		67		27-123	4		30
2,4-Dichlorophenol	74		73		30-130	1		30
2,4-Dimethylphenol	63		54		30-130	15		30
2-Nitrophenol	78		74		30-130	5		30
4-Nitrophenol	62		78		10-80	23		30
2,4-Dinitrophenol	70		84		20-130	18		30
4,6-Dinitro-o-cresol	86		94		20-164	9		30
Pentachlorophenol	76		89		9-103	16		30
Phenol	50		52		12-110	4		30
2-Methylphenol	65		64		30-130	2		30
3-Methylphenol/4-Methylphenol	64		64		30-130	0		30
2,4,5-Trichlorophenol	80		82		30-130	2		30
Benzoic Acid	35		48		10-164	**31**	Q	30
Benzyl Alcohol	65		68		26-116	5		30
Carbazole	79		85		55-144	7		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 07 Batch: WG1262165-2 WG1262165-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	56		57		21-120
Phenol-d6	50		52		10-120
Nitrobenzene-d5	76		75		23-120
2-Fluorobiphenyl	79		76		15-120
2,4,6-Tribromophenol	77		77		10-120
4-Terphenyl-d14	88		96		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 07 Batch: WG1262166-2 WG1262166-3								
Acenaphthene	78		81		40-140	4		40
2-Chloronaphthalene	78		88		40-140	12		40
Fluoranthene	87		91		40-140	4		40
Hexachlorobutadiene	72		84		40-140	15		40
Naphthalene	69		78		40-140	12		40
Benzo(a)anthracene	83		86		40-140	4		40
Benzo(a)pyrene	85		92		40-140	8		40
Benzo(b)fluoranthene	86		90		40-140	5		40
Benzo(k)fluoranthene	88		94		40-140	7		40
Chrysene	83		88		40-140	6		40
Acenaphthylene	79		88		40-140	11		40
Anthracene	89		95		40-140	7		40
Benzo(ghi)perylene	81		89		40-140	9		40
Fluorene	79		85		40-140	7		40
Phenanthrene	85		91		40-140	7		40
Dibenzo(a,h)anthracene	91		96		40-140	5		40
Indeno(1,2,3-cd)pyrene	88		96		40-140	9		40
Pyrene	86		90		40-140	5		40
2-Methylnaphthalene	75		85		40-140	13		40
Pentachlorophenol	71		81		40-140	13		40
Hexachlorobenzene	79		88		40-140	11		40
Hexachloroethane	68		79		40-140	15		40

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits

Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 07 Batch: WG1262166-2 WG1262166-3

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	50		58		21-120
Phenol-d6	40		46		10-120
Nitrobenzene-d5	70		80		23-120
2-Fluorobiphenyl	74		83		15-120
2,4,6-Tribromophenol	62		67		10-120
4-Terphenyl-d14	87		91		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03-06 Batch: WG1262491-2 WG1262491-3								
Acenaphthene	68		69		31-137	1		50
1,2,4-Trichlorobenzene	75		71		38-107	5		50
Hexachlorobenzene	76		76		40-140	0		50
Bis(2-chloroethyl)ether	73		67		40-140	9		50
2-Chloronaphthalene	75		73		40-140	3		50
1,2-Dichlorobenzene	71		66		40-140	7		50
1,3-Dichlorobenzene	70		65		40-140	7		50
1,4-Dichlorobenzene	71		66		28-104	7		50
3,3'-Dichlorobenzidine	57		57		40-140	0		50
2,4-Dinitrotoluene	76		76		40-132	0		50
2,6-Dinitrotoluene	81		80		40-140	1		50
Fluoranthene	74		75		40-140	1		50
4-Chlorophenyl phenyl ether	72		72		40-140	0		50
4-Bromophenyl phenyl ether	75		76		40-140	1		50
Bis(2-chloroisopropyl)ether	66		61		40-140	8		50
Bis(2-chloroethoxy)methane	76		72		40-117	5		50
Hexachlorobutadiene	73		71		40-140	3		50
Hexachlorocyclopentadiene	77		76		40-140	1		50
Hexachloroethane	70		64		40-140	9		50
Isophorone	80		74		40-140	8		50
Naphthalene	69		68		40-140	1		50
Nitrobenzene	77		72		40-140	7		50
NDPA/DPA	74		74		36-157	0		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03-06 Batch: WG1262491-2 WG1262491-3								
n-Nitrosodi-n-propylamine	78		73		32-121	7		50
Bis(2-ethylhexyl)phthalate	68		68		40-140	0		50
Butyl benzyl phthalate	72		73		40-140	1		50
Di-n-butylphthalate	76		76		40-140	0		50
Di-n-octylphthalate	75		75		40-140	0		50
Diethyl phthalate	73		72		40-140	1		50
Dimethyl phthalate	81		78		40-140	4		50
Benzo(a)anthracene	71		72		40-140	1		50
Benzo(a)pyrene	81		82		40-140	1		50
Benzo(b)fluoranthene	74		74		40-140	0		50
Benzo(k)fluoranthene	72		73		40-140	1		50
Chrysene	65		67		40-140	3		50
Acenaphthylene	79		77		40-140	3		50
Anthracene	73		74		40-140	1		50
Benzo(ghi)perylene	71		71		40-140	0		50
Fluorene	71		71		40-140	0		50
Phenanthrene	68		69		40-140	1		50
Dibenzo(a,h)anthracene	73		73		40-140	0		50
Indeno(1,2,3-cd)pyrene	74		75		40-140	1		50
Pyrene	72		73		35-142	1		50
Biphenyl	83		80		54-104	4		50
4-Chloroaniline	55		61		40-140	10		50
2-Nitroaniline	84		81		47-134	4		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03-06 Batch: WG1262491-2 WG1262491-3								
3-Nitroaniline	64		62		26-129	3		50
4-Nitroaniline	73		74		41-125	1		50
Dibenzofuran	68		70		40-140	3		50
2-Methylnaphthalene	74		73		40-140	1		50
1,2,4,5-Tetrachlorobenzene	79		77		40-117	3		50
Acetophenone	86		81		14-144	6		50
2,4,6-Trichlorophenol	86		84		30-130	2		50
p-Chloro-m-cresol	80		78		26-103	3		50
2-Chlorophenol	79		74		25-102	7		50
2,4-Dichlorophenol	86		81		30-130	6		50
2,4-Dimethylphenol	83		78		30-130	6		50
2-Nitrophenol	90		85		30-130	6		50
4-Nitrophenol	72		74		11-114	3		50
2,4-Dinitrophenol	52		85		4-130	48		50
4,6-Dinitro-o-cresol	81		85		10-130	5		50
Pentachlorophenol	80		80		17-109	0		50
Phenol	71		67		26-90	6		50
2-Methylphenol	80		75		30-130.	6		50
3-Methylphenol/4-Methylphenol	80		74		30-130	8		50
2,4,5-Trichlorophenol	86		83		30-130	4		50
Benzoic Acid	**0**	Q	54		10-110	NC		50
Benzyl Alcohol	77		74		40-140	4		50
Carbazole	70		71		54-128	1		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03-06 Batch: WG1262491-2 WG1262491-3								
1,4-Dioxane	62		56		40-140	10		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	75		70		25-120
Phenol-d6	77		72		10-120
Nitrobenzene-d5	79		74		23-120
2-Fluorobiphenyl	75		73		30-120
2,4,6-Tribromophenol	80		81		10-136
4-Terphenyl-d14	70		72		18-120

PCBS

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-04
Client ID: SB16_3.0-3.5
Sample Location: BROOKLYN

Date Collected: 07/19/19 12:15
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 07/23/19 11:00
Analyst: WR
Percent Solids: 80%

Extraction Method: EPA 3546
Extraction Date: 07/22/19 13:27
Cleanup Method: EPA 3665A
Cleanup Date: 07/22/19
Cleanup Method: EPA 3660B
Cleanup Date: 07/23/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	41.0	3.64	1	A
Aroclor 1221	ND		ug/kg	41.0	4.11	1	A
Aroclor 1232	ND		ug/kg	41.0	8.69	1	A
Aroclor 1242	ND		ug/kg	41.0	5.53	1	A
Aroclor 1248	ND		ug/kg	41.0	6.15	1	A
Aroclor 1254	ND		ug/kg	41.0	4.49	1	A
Aroclor 1260	39.2	J	ug/kg	41.0	7.58	1	A
Aroclor 1262	ND		ug/kg	41.0	5.21	1	A
Aroclor 1268	42.5		ug/kg	41.0	4.25	1	A
PCBs, Total	81.7	J	ug/kg	41.0	3.64	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	40		30-150	A
Decachlorobiphenyl	39		30-150	A
2,4,5,6-Tetrachloro-m-xylene	33		30-150	B
Decachlorobiphenyl	34		30-150	B

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-05
Client ID: SB17_13.0-13.5
Sample Location: BROOKLYN

Date Collected: 07/19/19 13:20
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8082A
Analytical Date: 07/23/19 11:13
Analyst: WR
Percent Solids: 91%

Extraction Method: EPA 3546
Extraction Date: 07/22/19 13:27
Cleanup Method: EPA 3665A
Cleanup Date: 07/22/19
Cleanup Method: EPA 3660B
Cleanup Date: 07/23/19

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Column
Polychlorinated Biphenyls by GC - Westborough Lab							
Aroclor 1016	ND		ug/kg	36.0	3.20	1	A
Aroclor 1221	ND		ug/kg	36.0	3.61	1	A
Aroclor 1232	ND		ug/kg	36.0	7.64	1	A
Aroclor 1242	ND		ug/kg	36.0	4.86	1	A
Aroclor 1248	ND		ug/kg	36.0	5.40	1	A
Aroclor 1254	ND		ug/kg	36.0	3.94	1	A
Aroclor 1260	ND		ug/kg	36.0	6.66	1	A
Aroclor 1262	ND		ug/kg	36.0	4.58	1	A
Aroclor 1268	ND		ug/kg	36.0	3.73	1	A
PCBs, Total	ND		ug/kg	36.0	3.20	1	A

Surrogate	% Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	41		30-150	A
Decachlorobiphenyl	33		30-150	A
2,4,5,6-Tetrachloro-m-xylene	35		30-150	B
Decachlorobiphenyl	**28**	Q	30-150	B

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8082A
Analytical Date: 07/23/19 10:23
Analyst: WR

Extraction Method: EPA 3546
Extraction Date: 07/22/19 08:29
Cleanup Method: EPA 3665A
Cleanup Date: 07/22/19

Parameter	Result	Qualifier	Units	RL	MDL	Column
Polychlorinated Biphenyls by GC - Westborough Lab for sample(s): 04-05 Batch: WG1262733-1						
Aroclor 1016	ND		ug/kg	33.3	2.95	A
Aroclor 1221	ND		ug/kg	33.3	3.33	A
Aroclor 1232	ND		ug/kg	33.3	7.05	A
Aroclor 1242	ND		ug/kg	33.3	4.48	A
Aroclor 1248	ND		ug/kg	33.3	4.99	A
Aroclor 1254	ND		ug/kg	33.3	3.64	A
Aroclor 1260	ND		ug/kg	33.3	6.15	A
Aroclor 1262	ND		ug/kg	33.3	4.22	A
Aroclor 1268	ND		ug/kg	33.3	3.45	A
PCBs, Total	ND		ug/kg	33.3	2.95	A

Surrogate	%Recovery	Qualifier	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	74		30-150	A
Decachlorobiphenyl	63		30-150	A
2,4,5,6-Tetrachloro-m-xylene	65		30-150	B
Decachlorobiphenyl	52		30-150	B

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits	Column
Polychlorinated Biphenyls by GC - Westborough Lab Associated sample(s): 04-05 Batch: WG1262733-2 WG1262733-3									
Aroclor 1016	97		95		40-140	2		50	A
Aroclor 1260	94		95		40-140	1		50	A

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria	Column
2,4,5,6-Tetrachloro-m-xylene	75		73		30-150	A
Decachlorobiphenyl	66		65		30-150	A
2,4,5,6-Tetrachloro-m-xylene	66		64		30-150	B
Decachlorobiphenyl	52		53		30-150	B

METALS

Project Name: 450 JOHNSON AVE
Lab Number: L1932118
Project Number: 170588001
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-01
Client ID: SB15_8.0-8.5
Sample Location: BROOKLYN
Date Collected: 07/19/19 11:20
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	4590		mg/kg	9.33	2.52	2	07/20/19 09:40	07/22/19 10:49	EPA 3050B	1,6010D	LC
Antimony, Total	1.62	J	mg/kg	4.67	0.355	2	07/20/19 09:40	07/22/19 10:49	EPA 3050B	1,6010D	LC
Arsenic, Total	11.5		mg/kg	0.933	0.194	2	07/20/19 09:40	07/22/19 10:49	EPA 3050B	1,6010D	LC
Barium, Total	59.2		mg/kg	0.933	0.162	2	07/20/19 09:40	07/22/19 10:49	EPA 3050B	1,6010D	LC
Beryllium, Total	0.121	J	mg/kg	0.467	0.031	2	07/20/19 09:40	07/22/19 10:49	EPA 3050B	1,6010D	LC
Cadmium, Total	0.821	J	mg/kg	0.933	0.091	2	07/20/19 09:40	07/22/19 10:49	EPA 3050B	1,6010D	LC
Calcium, Total	2450		mg/kg	9.33	3.27	2	07/20/19 09:40	07/22/19 10:49	EPA 3050B	1,6010D	LC
Chromium, Total	11.7		mg/kg	0.933	0.090	2	07/20/19 09:40	07/22/19 10:49	EPA 3050B	1,6010D	LC
Cobalt, Total	5.36		mg/kg	1.87	0.155	2	07/20/19 09:40	07/22/19 10:49	EPA 3050B	1,6010D	LC
Copper, Total	41.8		mg/kg	0.933	0.241	2	07/20/19 09:40	07/22/19 10:49	EPA 3050B	1,6010D	LC
Iron, Total	17200		mg/kg	4.67	0.843	2	07/20/19 09:40	07/22/19 10:49	EPA 3050B	1,6010D	LC
Lead, Total	544		mg/kg	4.67	0.250	2	07/20/19 09:40	07/22/19 10:49	EPA 3050B	1,6010D	LC
Magnesium, Total	698		mg/kg	9.33	1.44	2	07/20/19 09:40	07/22/19 10:49	EPA 3050B	1,6010D	LC
Manganese, Total	342		mg/kg	0.933	0.148	2	07/20/19 09:40	07/22/19 10:49	EPA 3050B	1,6010D	LC
Mercury, Total	1.18		mg/kg	0.077	0.050	1	07/20/19 10:30	07/20/19 18:50	EPA 7471B	1,7471B	MG
Nickel, Total	10.3		mg/kg	2.33	0.226	2	07/20/19 09:40	07/22/19 10:49	EPA 3050B	1,6010D	LC
Potassium, Total	454		mg/kg	233	13.4	2	07/20/19 09:40	07/22/19 10:49	EPA 3050B	1,6010D	LC
Selenium, Total	0.765	J	mg/kg	1.87	0.241	2	07/20/19 09:40	07/22/19 10:49	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.933	0.264	2	07/20/19 09:40	07/22/19 10:49	EPA 3050B	1,6010D	LC
Sodium, Total	106	J	mg/kg	187	2.94	2	07/20/19 09:40	07/22/19 10:49	EPA 3050B	1,6010D	LC
Thallium, Total	0.364	J	mg/kg	1.87	0.294	2	07/20/19 09:40	07/22/19 10:49	EPA 3050B	1,6010D	LC
Vanadium, Total	19.3		mg/kg	0.933	0.189	2	07/20/19 09:40	07/22/19 10:49	EPA 3050B	1,6010D	LC
Zinc, Total	336		mg/kg	4.67	0.273	2	07/20/19 09:40	07/22/19 10:49	EPA 3050B	1,6010D	LC

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-03
Client ID: SB10_5.0-5.5
Sample Location: BROOKLYN
Date Collected: 07/19/19 09:40
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	3190		mg/kg	9.28	2.50	2	07/20/19 09:40	07/22/19 10:53	EPA 3050B	1,6010D	LC
Antimony, Total	0.779	J	mg/kg	4.64	0.353	2	07/20/19 09:40	07/22/19 10:53	EPA 3050B	1,6010D	LC
Arsenic, Total	6.01		mg/kg	0.928	0.193	2	07/20/19 09:40	07/22/19 10:53	EPA 3050B	1,6010D	LC
Barium, Total	177		mg/kg	0.928	0.161	2	07/20/19 09:40	07/22/19 10:53	EPA 3050B	1,6010D	LC
Beryllium, Total	0.241	J	mg/kg	0.464	0.031	2	07/20/19 09:40	07/22/19 10:53	EPA 3050B	1,6010D	LC
Cadmium, Total	1.11		mg/kg	0.928	0.091	2	07/20/19 09:40	07/22/19 10:53	EPA 3050B	1,6010D	LC
Calcium, Total	2540		mg/kg	9.28	3.25	2	07/20/19 09:40	07/22/19 10:53	EPA 3050B	1,6010D	LC
Chromium, Total	7.75		mg/kg	0.928	0.089	2	07/20/19 09:40	07/22/19 10:53	EPA 3050B	1,6010D	LC
Cobalt, Total	4.87		mg/kg	1.86	0.154	2	07/20/19 09:40	07/22/19 10:53	EPA 3050B	1,6010D	LC
Copper, Total	67.0		mg/kg	0.928	0.239	2	07/20/19 09:40	07/22/19 10:53	EPA 3050B	1,6010D	LC
Iron, Total	7380		mg/kg	4.64	0.838	2	07/20/19 09:40	07/22/19 10:53	EPA 3050B	1,6010D	LC
Lead, Total	442		mg/kg	4.64	0.249	2	07/20/19 09:40	07/22/19 10:53	EPA 3050B	1,6010D	LC
Magnesium, Total	431		mg/kg	9.28	1.43	2	07/20/19 09:40	07/22/19 10:53	EPA 3050B	1,6010D	LC
Manganese, Total	140		mg/kg	0.928	0.148	2	07/20/19 09:40	07/22/19 10:53	EPA 3050B	1,6010D	LC
Mercury, Total	0.489		mg/kg	0.078	0.051	1	07/20/19 10:30	07/20/19 18:52	EPA 7471B	1,7471B	MG
Nickel, Total	12.8		mg/kg	2.32	0.224	2	07/20/19 09:40	07/22/19 10:53	EPA 3050B	1,6010D	LC
Potassium, Total	500		mg/kg	232	13.4	2	07/20/19 09:40	07/22/19 10:53	EPA 3050B	1,6010D	LC
Selenium, Total	1.77	J	mg/kg	1.86	0.239	2	07/20/19 09:40	07/22/19 10:53	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.928	0.263	2	07/20/19 09:40	07/22/19 10:53	EPA 3050B	1,6010D	LC
Sodium, Total	141	J	mg/kg	186	2.92	2	07/20/19 09:40	07/22/19 10:53	EPA 3050B	1,6010D	LC
Thallium, Total	ND		mg/kg	1.86	0.292	2	07/20/19 09:40	07/22/19 10:53	EPA 3050B	1,6010D	LC
Vanadium, Total	15.2		mg/kg	0.928	0.188	2	07/20/19 09:40	07/22/19 10:53	EPA 3050B	1,6010D	LC
Zinc, Total	291		mg/kg	4.64	0.272	2	07/20/19 09:40	07/22/19 10:53	EPA 3050B	1,6010D	LC

Project Name: 450 JOHNSON AVE
Lab Number: L1932118
Project Number: 170588001
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-04
Client ID: SB16_3.0-3.5
Sample Location: BROOKLYN
Date Collected: 07/19/19 12:15
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	7800		mg/kg	9.72	2.62	2	07/20/19 09:40	07/22/19 11:19	EPA 3050B	1,6010D	LC
Antimony, Total	5.74		mg/kg	4.86	0.369	2	07/20/19 09:40	07/22/19 11:19	EPA 3050B	1,6010D	LC
Arsenic, Total	10.4		mg/kg	0.972	0.202	2	07/20/19 09:40	07/22/19 11:19	EPA 3050B	1,6010D	LC
Barium, Total	632		mg/kg	0.972	0.169	2	07/20/19 09:40	07/22/19 11:19	EPA 3050B	1,6010D	LC
Beryllium, Total	0.330	J	mg/kg	0.486	0.032	2	07/20/19 09:40	07/22/19 11:19	EPA 3050B	1,6010D	LC
Cadmium, Total	2.98		mg/kg	0.972	0.095	2	07/20/19 09:40	07/22/19 11:19	EPA 3050B	1,6010D	LC
Calcium, Total	24200		mg/kg	9.72	3.40	2	07/20/19 09:40	07/22/19 11:19	EPA 3050B	1,6010D	LC
Chromium, Total	70.7		mg/kg	0.972	0.093	2	07/20/19 09:40	07/22/19 11:19	EPA 3050B	1,6010D	LC
Cobalt, Total	7.06		mg/kg	1.94	0.161	2	07/20/19 09:40	07/22/19 11:19	EPA 3050B	1,6010D	LC
Copper, Total	258		mg/kg	0.972	0.251	2	07/20/19 09:40	07/22/19 11:19	EPA 3050B	1,6010D	LC
Iron, Total	24500		mg/kg	4.86	0.878	2	07/20/19 09:40	07/22/19 11:19	EPA 3050B	1,6010D	LC
Lead, Total	545		mg/kg	4.86	0.260	2	07/20/19 09:40	07/22/19 11:19	EPA 3050B	1,6010D	LC
Magnesium, Total	3180		mg/kg	9.72	1.50	2	07/20/19 09:40	07/22/19 11:19	EPA 3050B	1,6010D	LC
Manganese, Total	276		mg/kg	0.972	0.154	2	07/20/19 09:40	07/22/19 11:19	EPA 3050B	1,6010D	LC
Mercury, Total	0.832		mg/kg	0.078	0.051	1	07/20/19 10:30	07/20/19 18:54	EPA 7471B	1,7471B	MG
Nickel, Total	55.0		mg/kg	2.43	0.235	2	07/20/19 09:40	07/22/19 11:19	EPA 3050B	1,6010D	LC
Potassium, Total	1540		mg/kg	243	14.0	2	07/20/19 09:40	07/22/19 11:19	EPA 3050B	1,6010D	LC
Selenium, Total	0.943	J	mg/kg	1.94	0.251	2	07/20/19 09:40	07/22/19 11:19	EPA 3050B	1,6010D	LC
Silver, Total	0.583	J	mg/kg	0.972	0.275	2	07/20/19 09:40	07/22/19 11:19	EPA 3050B	1,6010D	LC
Sodium, Total	400		mg/kg	194	3.06	2	07/20/19 09:40	07/22/19 11:19	EPA 3050B	1,6010D	LC
Thallium, Total	0.330	J	mg/kg	1.94	0.306	2	07/20/19 09:40	07/22/19 11:19	EPA 3050B	1,6010D	LC
Vanadium, Total	34.4		mg/kg	0.972	0.197	2	07/20/19 09:40	07/22/19 11:19	EPA 3050B	1,6010D	LC
Zinc, Total	843		mg/kg	4.86	0.285	2	07/20/19 09:40	07/22/19 11:19	EPA 3050B	1,6010D	LC

Project Name: 450 JOHNSON AVE
Lab Number: L1932118
Project Number: 170588001
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-05
Client ID: SB17_13.0-13.5
Sample Location: BROOKLYN
Date Collected: 07/19/19 13:20
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 91%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	2920		mg/kg	8.55	2.31	2	07/20/19 09:40	07/22/19 11:24	EPA 3050B	1,6010D	LC
Antimony, Total	0.829	J	mg/kg	4.28	0.325	2	07/20/19 09:40	07/22/19 11:24	EPA 3050B	1,6010D	LC
Arsenic, Total	12.4		mg/kg	0.855	0.178	2	07/20/19 09:40	07/22/19 11:24	EPA 3050B	1,6010D	LC
Barium, Total	47.5		mg/kg	0.855	0.149	2	07/20/19 09:40	07/22/19 11:24	EPA 3050B	1,6010D	LC
Beryllium, Total	0.205	J	mg/kg	0.428	0.028	2	07/20/19 09:40	07/22/19 11:24	EPA 3050B	1,6010D	LC
Cadmium, Total	0.282	J	mg/kg	0.855	0.084	2	07/20/19 09:40	07/22/19 11:24	EPA 3050B	1,6010D	LC
Calcium, Total	8180		mg/kg	8.55	2.99	2	07/20/19 09:40	07/22/19 11:24	EPA 3050B	1,6010D	LC
Chromium, Total	8.94		mg/kg	0.855	0.082	2	07/20/19 09:40	07/22/19 11:24	EPA 3050B	1,6010D	LC
Cobalt, Total	4.92		mg/kg	1.71	0.142	2	07/20/19 09:40	07/22/19 11:24	EPA 3050B	1,6010D	LC
Copper, Total	31.5		mg/kg	0.855	0.220	2	07/20/19 09:40	07/22/19 11:24	EPA 3050B	1,6010D	LC
Iron, Total	15600		mg/kg	4.28	0.772	2	07/20/19 09:40	07/22/19 11:24	EPA 3050B	1,6010D	LC
Lead, Total	255		mg/kg	4.28	0.229	2	07/20/19 09:40	07/22/19 11:24	EPA 3050B	1,6010D	LC
Magnesium, Total	2030		mg/kg	8.55	1.32	2	07/20/19 09:40	07/22/19 11:24	EPA 3050B	1,6010D	LC
Manganese, Total	232		mg/kg	0.855	0.136	2	07/20/19 09:40	07/22/19 11:24	EPA 3050B	1,6010D	LC
Mercury, Total	1.15		mg/kg	0.069	0.045	1	07/20/19 10:30	07/20/19 19:00	EPA 7471B	1,7471B	MG
Nickel, Total	11.1		mg/kg	2.14	0.207	2	07/20/19 09:40	07/22/19 11:24	EPA 3050B	1,6010D	LC
Potassium, Total	373		mg/kg	214	12.3	2	07/20/19 09:40	07/22/19 11:24	EPA 3050B	1,6010D	LC
Selenium, Total	0.462	J	mg/kg	1.71	0.220	2	07/20/19 09:40	07/22/19 11:24	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.855	0.242	2	07/20/19 09:40	07/22/19 11:24	EPA 3050B	1,6010D	LC
Sodium, Total	116	J	mg/kg	171	2.69	2	07/20/19 09:40	07/22/19 11:24	EPA 3050B	1,6010D	LC
Thallium, Total	ND		mg/kg	1.71	0.269	2	07/20/19 09:40	07/22/19 11:24	EPA 3050B	1,6010D	LC
Vanadium, Total	14.2		mg/kg	0.855	0.174	2	07/20/19 09:40	07/22/19 11:24	EPA 3050B	1,6010D	LC
Zinc, Total	60.2		mg/kg	4.28	0.250	2	07/20/19 09:40	07/22/19 11:24	EPA 3050B	1,6010D	LC

Project Name: 450 JOHNSON AVE
Lab Number: L1932118
Project Number: 170588001
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-06
Client ID: SB18_4.0-4.5
Sample Location: BROOKLYN
Date Collected: 07/19/19 14:00
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 86%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	6310		mg/kg	8.76	2.36	2	07/20/19 09:40	07/22/19 11:28	EPA 3050B	1,6010D	LC
Antimony, Total	0.648	J	mg/kg	4.38	0.333	2	07/20/19 09:40	07/22/19 11:28	EPA 3050B	1,6010D	LC
Arsenic, Total	5.90		mg/kg	0.876	0.182	2	07/20/19 09:40	07/22/19 11:28	EPA 3050B	1,6010D	LC
Barium, Total	260		mg/kg	0.876	0.152	2	07/20/19 09:40	07/22/19 11:28	EPA 3050B	1,6010D	LC
Beryllium, Total	0.228	J	mg/kg	0.438	0.029	2	07/20/19 09:40	07/22/19 11:28	EPA 3050B	1,6010D	LC
Cadmium, Total	0.394	J	mg/kg	0.876	0.086	2	07/20/19 09:40	07/22/19 11:28	EPA 3050B	1,6010D	LC
Calcium, Total	55700		mg/kg	8.76	3.06	2	07/20/19 09:40	07/22/19 11:28	EPA 3050B	1,6010D	LC
Chromium, Total	12.2		mg/kg	0.876	0.084	2	07/20/19 09:40	07/22/19 11:28	EPA 3050B	1,6010D	LC
Cobalt, Total	5.28		mg/kg	1.75	0.145	2	07/20/19 09:40	07/22/19 11:28	EPA 3050B	1,6010D	LC
Copper, Total	23.8		mg/kg	0.876	0.226	2	07/20/19 09:40	07/22/19 11:28	EPA 3050B	1,6010D	LC
Iron, Total	13200		mg/kg	4.38	0.791	2	07/20/19 09:40	07/22/19 11:28	EPA 3050B	1,6010D	LC
Lead, Total	167		mg/kg	4.38	0.235	2	07/20/19 09:40	07/22/19 11:28	EPA 3050B	1,6010D	LC
Magnesium, Total	1880		mg/kg	8.76	1.35	2	07/20/19 09:40	07/22/19 11:28	EPA 3050B	1,6010D	LC
Manganese, Total	415		mg/kg	0.876	0.139	2	07/20/19 09:40	07/22/19 11:28	EPA 3050B	1,6010D	LC
Mercury, Total	0.742		mg/kg	0.074	0.049	1	07/20/19 10:30	07/20/19 19:02	EPA 7471B	1,7471B	MG
Nickel, Total	10.6		mg/kg	2.19	0.212	2	07/20/19 09:40	07/22/19 11:28	EPA 3050B	1,6010D	LC
Potassium, Total	555		mg/kg	219	12.6	2	07/20/19 09:40	07/22/19 11:28	EPA 3050B	1,6010D	LC
Selenium, Total	ND		mg/kg	1.75	0.226	2	07/20/19 09:40	07/22/19 11:28	EPA 3050B	1,6010D	LC
Silver, Total	ND		mg/kg	0.876	0.248	2	07/20/19 09:40	07/22/19 11:28	EPA 3050B	1,6010D	LC
Sodium, Total	154	J	mg/kg	175	2.76	2	07/20/19 09:40	07/22/19 11:28	EPA 3050B	1,6010D	LC
Thallium, Total	ND		mg/kg	1.75	0.276	2	07/20/19 09:40	07/22/19 11:28	EPA 3050B	1,6010D	LC
Vanadium, Total	17.6		mg/kg	0.876	0.178	2	07/20/19 09:40	07/22/19 11:28	EPA 3050B	1,6010D	LC
Zinc, Total	97.5		mg/kg	4.38	0.256	2	07/20/19 09:40	07/22/19 11:28	EPA 3050B	1,6010D	LC

Project Name: 450 JOHNSON AVE
Lab Number: L1932118
Project Number: 170588001
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-08
Client ID: TMW07_071919 (FIELD FILTERED)
Sample Location: BROOKLYN
Date Collected: 07/19/19 09:00
Date Received: 07/19/19
Field Prep: Refer to COC

Sample Depth:
Matrix: Water

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab											
Aluminum, Dissolved	0.0138		mg/l	0.0100	0.00327	1	07/20/19 10:03	07/22/19 15:13	EPA 3005A	1,6020B	AM
Antimony, Dissolved	0.00147	J	mg/l	0.00400	0.00042	1	07/20/19 10:03	07/22/19 15:13	EPA 3005A	1,6020B	AM
Arsenic, Dissolved	0.00159		mg/l	0.00050	0.00016	1	07/20/19 10:03	07/22/19 15:13	EPA 3005A	1,6020B	AM
Barium, Dissolved	0.09796		mg/l	0.00050	0.00017	1	07/20/19 10:03	07/22/19 15:13	EPA 3005A	1,6020B	AM
Beryllium, Dissolved	ND		mg/l	0.00050	0.00010	1	07/20/19 10:03	07/22/19 15:13	EPA 3005A	1,6020B	AM
Cadmium, Dissolved	ND		mg/l	0.00020	0.00005	1	07/20/19 10:03	07/22/19 15:13	EPA 3005A	1,6020B	AM
Calcium, Dissolved	74.8		mg/l	0.100	0.0394	1	07/20/19 10:03	07/22/19 15:13	EPA 3005A	1,6020B	AM
Chromium, Dissolved	0.00022	J	mg/l	0.00100	0.00017	1	07/20/19 10:03	07/22/19 15:13	EPA 3005A	1,6020B	AM
Cobalt, Dissolved	0.00871		mg/l	0.00050	0.00016	1	07/20/19 10:03	07/22/19 15:13	EPA 3005A	1,6020B	AM
Copper, Dissolved	0.00673		mg/l	0.00100	0.00038	1	07/20/19 10:03	07/22/19 15:13	EPA 3005A	1,6020B	AM
Iron, Dissolved	2.78		mg/l	0.0500	0.0191	1	07/20/19 10:03	07/22/19 15:13	EPA 3005A	1,6020B	AM
Lead, Dissolved	0.00209		mg/l	0.00100	0.00034	1	07/20/19 10:03	07/22/19 15:13	EPA 3005A	1,6020B	AM
Magnesium, Dissolved	10.9		mg/l	0.0700	0.0242	1	07/20/19 10:03	07/22/19 15:13	EPA 3005A	1,6020B	AM
Manganese, Dissolved	4.586		mg/l	0.00100	0.00044	1	07/20/19 10:03	07/22/19 15:13	EPA 3005A	1,6020B	AM
Mercury, Dissolved	ND		mg/l	0.00100	0.00045	1	07/23/19 10:35	07/23/19 13:23	EPA 7470A	1,7470A	GD
Nickel, Dissolved	0.00650		mg/l	0.00200	0.00055	1	07/20/19 10:03	07/22/19 15:13	EPA 3005A	1,6020B	AM
Potassium, Dissolved	13.5		mg/l	0.100	0.0309	1	07/20/19 10:03	07/22/19 15:13	EPA 3005A	1,6020B	AM
Selenium, Dissolved	ND		mg/l	0.00500	0.00173	1	07/20/19 10:03	07/22/19 15:13	EPA 3005A	1,6020B	AM
Silver, Dissolved	ND		mg/l	0.00040	0.00016	1	07/20/19 10:03	07/22/19 15:13	EPA 3005A	1,6020B	AM
Sodium, Dissolved	64.8		mg/l	0.100	0.0293	1	07/20/19 10:03	07/22/19 15:13	EPA 3005A	1,6020B	AM
Thallium, Dissolved	ND		mg/l	0.00050	0.00014	1	07/20/19 10:03	07/22/19 15:13	EPA 3005A	1,6020B	AM
Vanadium, Dissolved	ND		mg/l	0.00500	0.00157	1	07/20/19 10:03	07/22/19 15:13	EPA 3005A	1,6020B	AM
Zinc, Dissolved	0.02134		mg/l	0.01000	0.00341	1	07/20/19 10:03	07/22/19 15:13	EPA 3005A	1,6020B	AM

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03-06 Batch: WG1262372-1										
Aluminum, Total	ND		mg/kg	4.00	1.08	1	07/20/19 09:40	07/22/19 10:18	1,6010D	LC
Antimony, Total	ND		mg/kg	2.00	0.152	1	07/20/19 09:40	07/22/19 10:18	1,6010D	LC
Arsenic, Total	ND		mg/kg	0.400	0.083	1	07/20/19 09:40	07/22/19 10:18	1,6010D	LC
Barium, Total	ND		mg/kg	0.400	0.070	1	07/20/19 09:40	07/22/19 10:18	1,6010D	LC
Beryllium, Total	ND		mg/kg	0.200	0.013	1	07/20/19 09:40	07/22/19 10:18	1,6010D	LC
Cadmium, Total	ND		mg/kg	0.400	0.039	1	07/20/19 09:40	07/22/19 10:18	1,6010D	LC
Calcium, Total	ND		mg/kg	4.00	1.40	1	07/20/19 09:40	07/22/19 10:18	1,6010D	LC
Chromium, Total	ND		mg/kg	0.400	0.038	1	07/20/19 09:40	07/22/19 10:18	1,6010D	LC
Cobalt, Total	ND		mg/kg	0.800	0.066	1	07/20/19 09:40	07/22/19 10:18	1,6010D	LC
Copper, Total	ND		mg/kg	0.400	0.103	1	07/20/19 09:40	07/22/19 10:18	1,6010D	LC
Iron, Total	ND		mg/kg	2.00	0.361	1	07/20/19 09:40	07/22/19 10:18	1,6010D	LC
Lead, Total	ND		mg/kg	2.00	0.107	1	07/20/19 09:40	07/22/19 10:18	1,6010D	LC
Magnesium, Total	ND		mg/kg	4.00	0.616	1	07/20/19 09:40	07/22/19 10:18	1,6010D	LC
Manganese, Total	0.400		mg/kg	0.400	0.064	1	07/20/19 09:40	07/22/19 10:18	1,6010D	LC
Nickel, Total	ND		mg/kg	1.00	0.097	1	07/20/19 09:40	07/22/19 10:18	1,6010D	LC
Potassium, Total	ND		mg/kg	100	5.76	1	07/20/19 09:40	07/22/19 10:18	1,6010D	LC
Selenium, Total	ND		mg/kg	0.800	0.103	1	07/20/19 09:40	07/22/19 10:18	1,6010D	LC
Silver, Total	ND		mg/kg	0.400	0.113	1	07/20/19 09:40	07/22/19 10:18	1,6010D	LC
Sodium, Total	ND		mg/kg	80.0	1.26	1	07/20/19 09:40	07/22/19 10:18	1,6010D	LC
Thallium, Total	ND		mg/kg	0.800	0.126	1	07/20/19 09:40	07/22/19 10:18	1,6010D	LC
Vanadium, Total	ND		mg/kg	0.400	0.081	1	07/20/19 09:40	07/22/19 10:18	1,6010D	LC
Zinc, Total	ND		mg/kg	2.00	0.117	1	07/20/19 09:40	07/22/19 10:18	1,6010D	LC

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03-06 Batch: WG1262400-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	07/20/19 10:30	07/20/19 18:11	1,7471B	MG

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 7471B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 08 Batch: WG1262423-1										
Aluminum, Dissolved	ND		mg/l	0.0100	0.00327	1	07/20/19 10:03	07/22/19 14:45	1,6020B	AM
Antimony, Dissolved	0.00087	J	mg/l	0.00400	0.00042	1	07/20/19 10:03	07/22/19 14:45	1,6020B	AM
Arsenic, Dissolved	ND		mg/l	0.00050	0.00016	1	07/20/19 10:03	07/22/19 14:45	1,6020B	AM
Barium, Dissolved	ND		mg/l	0.00050	0.00017	1	07/20/19 10:03	07/22/19 14:45	1,6020B	AM
Beryllium, Dissolved	ND		mg/l	0.00050	0.00010	1	07/20/19 10:03	07/22/19 14:45	1,6020B	AM
Cadmium, Dissolved	ND		mg/l	0.00020	0.00005	1	07/20/19 10:03	07/22/19 14:45	1,6020B	AM
Calcium, Dissolved	ND		mg/l	0.100	0.0394	1	07/20/19 10:03	07/22/19 14:45	1,6020B	AM
Chromium, Dissolved	ND		mg/l	0.00100	0.00017	1	07/20/19 10:03	07/22/19 14:45	1,6020B	AM
Cobalt, Dissolved	ND		mg/l	0.00050	0.00016	1	07/20/19 10:03	07/22/19 14:45	1,6020B	AM
Copper, Dissolved	ND		mg/l	0.00100	0.00038	1	07/20/19 10:03	07/22/19 14:45	1,6020B	AM
Iron, Dissolved	ND		mg/l	0.0500	0.0191	1	07/20/19 10:03	07/22/19 14:45	1,6020B	AM
Lead, Dissolved	ND		mg/l	0.00100	0.00034	1	07/20/19 10:03	07/22/19 14:45	1,6020B	AM
Magnesium, Dissolved	ND		mg/l	0.0700	0.0242	1	07/20/19 10:03	07/22/19 14:45	1,6020B	AM
Manganese, Dissolved	ND		mg/l	0.00100	0.00044	1	07/20/19 10:03	07/22/19 14:45	1,6020B	AM
Nickel, Dissolved	ND		mg/l	0.00200	0.00055	1	07/20/19 10:03	07/22/19 14:45	1,6020B	AM
Potassium, Dissolved	ND		mg/l	0.100	0.0309	1	07/20/19 10:03	07/22/19 14:45	1,6020B	AM
Selenium, Dissolved	ND		mg/l	0.00500	0.00173	1	07/20/19 10:03	07/22/19 14:45	1,6020B	AM
Silver, Dissolved	ND		mg/l	0.00040	0.00016	1	07/20/19 10:03	07/22/19 14:45	1,6020B	AM
Sodium, Dissolved	ND		mg/l	0.100	0.0293	1	07/20/19 10:03	07/22/19 14:45	1,6020B	AM
Thallium, Dissolved	0.00031	J	mg/l	0.00050	0.00014	1	07/20/19 10:03	07/22/19 14:45	1,6020B	AM
Vanadium, Dissolved	ND		mg/l	0.00500	0.00157	1	07/20/19 10:03	07/22/19 14:45	1,6020B	AM
Zinc, Dissolved	ND		mg/l	0.01000	0.00341	1	07/20/19 10:03	07/22/19 14:45	1,6020B	AM

Prep Information

Digestion Method: EPA 3005A

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Dissolved Metals - Mansfield Lab for sample(s): 08 Batch: WG1263255-1										
Mercury, Dissolved	ND		mg/l	0.00020	0.00009	1	07/23/19 10:35	07/23/19 13:20	1,7470A	GD

Prep Information

Digestion Method: EPA 7470A

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE

Project Number: 170588001

Lab Number: L1932118

Report Date: 08/06/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03-06 Batch: WG1262372-2 SRM Lot Number: D105-540								
Aluminum, Total	68		-		51-149	-		
Antimony, Total	146		-		19-249	-		
Arsenic, Total	116		-		70-130	-		
Barium, Total	102		-		75-125	-		
Beryllium, Total	100		-		75-125	-		
Cadmium, Total	98		-		75-125	-		
Calcium, Total	93		-		73-127	-		
Chromium, Total	100		-		70-130	-		
Cobalt, Total	106		-		75-125	-		
Copper, Total	107		-		75-125	-		
Iron, Total	88		-		38-162	-		
Lead, Total	106		-		71-128	-		
Magnesium, Total	89		-		63-137	-		
Manganese, Total	103		-		76-124	-		
Nickel, Total	109		-		70-131	-		
Potassium, Total	84		-		60-140	-		
Selenium, Total	112		-		63-137	-		
Silver, Total	105		-		69-131	-		
Sodium, Total	95		-		37-162	-		
Thallium, Total	98		-		68-132	-		
Vanadium, Total	98		-		65-135	-		

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE

Project Number: 170588001

Lab Number: L1932118

Report Date: 08/06/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03-06 Batch: WG1262372-2 SRM Lot Number: D105-540					
Zinc, Total	105	-	70-130	-	
Total Metals - Mansfield Lab Associated sample(s): 01,03-06 Batch: WG1262400-2 SRM Lot Number: D105-540					
Mercury, Total	101	-	60-141	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE

Project Number: 170588001

Lab Number: L1932118

Report Date: 08/06/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 08 Batch: WG1262423-2					
Aluminum, Dissolved	112	-	80-120	-	
Antimony, Dissolved	86	-	80-120	-	
Arsenic, Dissolved	109	-	80-120	-	
Barium, Dissolved	108	-	80-120	-	
Beryllium, Dissolved	104	-	80-120	-	
Cadmium, Dissolved	108	-	80-120	-	
Calcium, Dissolved	115	-	80-120	-	
Chromium, Dissolved	104	-	80-120	-	
Cobalt, Dissolved	105	-	80-120	-	
Copper, Dissolved	101	-	80-120	-	
Iron, Dissolved	113	-	80-120	-	
Lead, Dissolved	112	-	80-120	-	
Magnesium, Dissolved	110	-	80-120	-	
Manganese, Dissolved	104	-	80-120	-	
Nickel, Dissolved	107	-	80-120	-	
Potassium, Dissolved	111	-	80-120	-	
Selenium, Dissolved	111	-	80-120	-	
Silver, Dissolved	104	-	80-120	-	
Sodium, Dissolved	104	-	80-120	-	
Thallium, Dissolved	108	-	80-120	-	
Vanadium, Dissolved	106	-	80-120	-	

Lab Control Sample Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE

Project Number: 170588001

Lab Number: L1932118

Report Date: 08/06/19

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 08 Batch: WG1262423-2					
Zinc, Dissolved	109	-	80-120	-	
Dissolved Metals - Mansfield Lab Associated sample(s): 08 Batch: WG1263255-2					
Mercury, Dissolved	97	-	80-120	-	

Matrix Spike Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03-06 QC Batch ID: WG1262372-3 QC Sample: L1929938-01 Client ID: MS Sample												
Aluminum, Total	22500	671	24000	**224**	Q	-	-		75-125	-		20
Antimony, Total	2.08J	168	178	106		-	-		75-125	-		20
Arsenic, Total	7.93	40.2	54.9	117		-	-		75-125	-		20
Barium, Total	418	671	1120	105		-	-		75-125	-		20
Beryllium, Total	0.314J	16.8	16.3	97		-	-		75-125	-		20
Cadmium, Total	1.88	17.1	18.0	94		-	-		75-125	-		20
Calcium, Total	29700	3350	33900	125		-	-		75-125	-		20
Chromium, Total	39.3	67.1	101	92		-	-		75-125	-		20
Cobalt, Total	4.27	168	154	89		-	-		75-125	-		20
Copper, Total	389	83.8	486	116		-	-		75-125	-		20
Iron, Total	14000	335	14600	**179**	Q	-	-		75-125	-		20
Lead, Total	70.1	171	225	90		-	-		75-125	-		20
Magnesium, Total	11000	3350	13900	86		-	-		75-125	-		20
Manganese, Total	229	168	392	97		-	-		75-125	-		20
Nickel, Total	31.3	168	181	89		-	-		75-125	-		20
Potassium, Total	6170	3350	10000	114		-	-		75-125	-		20
Selenium, Total	6.84	40.2	55.2	120		-	-		75-125	-		20
Silver, Total	1.78	101	109	106		-	-		75-125	-		20
Sodium, Total	1270	3350	5010	112		-	-		75-125	-		20
Thallium, Total	ND	40.2	33.3	83		-	-		75-125	-		20
Vanadium, Total	17.0	168	176	95		-	-		75-125	-		20

Matrix Spike Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03-06 QC Batch ID: WG1262372-3 QC Sample: L1929938-01 Client ID: MS Sample										
Zinc, Total	644	168	817	103		-	-	75-125	-	20
Total Metals - Mansfield Lab Associated sample(s): 01,03-06 QC Batch ID: WG1262400-3 QC Sample: L1929938-01 Client ID: MS Sample										
Mercury, Total	0.586	0.569	0.955	**65**	Q	-	-	80-120	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery		MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 08 QC Batch ID: WG1262423-3 QC Sample: L1932118-08 Client ID: TMW07_071919 (FIELD FILTERED)										
Aluminum, Dissolved	0.0138	4	4.24	106		-	-	75-125	-	20
Antimony, Dissolved	0.00147J	1	1.323	**132**	Q	-	-	75-125	-	20
Arsenic, Dissolved	0.00159	0.24	0.2588	107		-	-	75-125	-	20
Barium, Dissolved	0.09796	4	4.342	106		-	-	75-125	-	20
Beryllium, Dissolved	ND	0.1	0.1044	104		-	-	75-125	-	20
Cadmium, Dissolved	ND	0.102	0.1106	108		-	-	75-125	-	20
Calcium, Dissolved	74.8	20	99.4	123		-	-	75-125	-	20
Chromium, Dissolved	0.00022J	0.4	0.4013	100		-	-	75-125	-	20
Cobalt, Dissolved	0.00871	1	1.020	101		-	-	75-125	-	20
Copper, Dissolved	0.00673	0.5	0.5061	100		-	-	75-125	-	20
Iron, Dissolved	2.78	2	5.08	115		-	-	75-125	-	20
Lead, Dissolved	0.00209	1.02	1.066	104		-	-	75-125	-	20
Magnesium, Dissolved	10.9	20	32.8	110		-	-	75-125	-	20
Manganese, Dissolved	4.586	1	5.547	96		-	-	75-125	-	20
Nickel, Dissolved	0.00650	1	1.023	102		-	-	75-125	-	20
Potassium, Dissolved	13.5	20	36.0	112		-	-	75-125	-	20
Selenium, Dissolved	ND	0.24	0.273	114		-	-	75-125	-	20
Silver, Dissolved	ND	0.1	0.1018	102		-	-	75-125	-	20
Sodium, Dissolved	64.8	20	81.8	85		-	-	75-125	-	20
Thallium, Dissolved	ND	0.24	0.2458	102		-	-	75-125	-	20
Vanadium, Dissolved	ND	1	1.038	104		-	-	75-125	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	MSD Found	MSD %Recovery	Recovery Limits	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 08 QC Batch ID: WG1262423-3 QC Sample: L1932118-08 Client ID: TMW07_071919 (FIELD FILTERED)									
Zinc, Dissolved	0.02134	1	1.067	104	-	-	75-125	-	20
Dissolved Metals - Mansfield Lab Associated sample(s): 08 QC Batch ID: WG1263255-3 QC Sample: L1932118-08 Client ID: TMW07_071919 (FIELD FILTERED)									
Mercury, Dissolved	ND	0.025	0.02445	98	-	-	75-125	-	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03-06 QC Batch ID: WG1262372-4 QC Sample: L1929938-01 Client ID: DUP Sample						
Arsenic, Total	7.93	8.12	mg/kg	2		20
Cadmium, Total	1.88	1.99	mg/kg	6		20
Chromium, Total	39.3	37.8	mg/kg	4		20
Copper, Total	389	371	mg/kg	5		20
Lead, Total	70.1	70.2	mg/kg	0		20
Nickel, Total	31.3	30.3	mg/kg	3		20
Potassium, Total	6170	6020	mg/kg	2		20
Selenium, Total	6.84	7.15	mg/kg	4		20
Zinc, Total	644	642	mg/kg	0		20
Total Metals - Mansfield Lab Associated sample(s): 01,03-06 QC Batch ID: WG1262400-4 QC Sample: L1929938-01 Client ID: DUP Sample						
Mercury, Total	0.586	0.457	mg/kg	**25**	Q	20

Lab Duplicate Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	Native Sample	Duplicate Sample	Units	RPD		RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 08 QC Batch ID: WG1262423-4 QC Sample: L1932118-08 Client ID: TMW07_071919 (FIELD FILTERED)						
Aluminum, Dissolved	0.0138	0.00976J	mg/l	NC		20
Antimony, Dissolved	0.00147J	0.00462	mg/l	NC		20
Arsenic, Dissolved	0.00159	0.00165	mg/l	3		20
Barium, Dissolved	0.09796	0.1021	mg/l	4		20
Beryllium, Dissolved	ND	ND	mg/l	NC		20
Cadmium, Dissolved	ND	ND	mg/l	NC		20
Calcium, Dissolved	74.8	77.4	mg/l	3		20
Chromium, Dissolved	0.00022J	0.00018J	mg/l	NC		20
Cobalt, Dissolved	0.00871	0.00864	mg/l	1		20
Copper, Dissolved	0.00673	0.00491	mg/l	**31**	Q	20
Iron, Dissolved	2.78	2.90	mg/l	4		20
Lead, Dissolved	0.00209	0.00127	mg/l	**49**	Q	20
Magnesium, Dissolved	10.9	11.0	mg/l	1		20
Manganese, Dissolved	4.586	4.745	mg/l	3		20
Nickel, Dissolved	0.00650	0.00477	mg/l	**31**	Q	20
Potassium, Dissolved	13.5	14.0	mg/l	4		20
Selenium, Dissolved	ND	0.00173J	mg/l	NC		20
Silver, Dissolved	ND	ND	mg/l	NC		20
Sodium, Dissolved	64.8	66.0	mg/l	2		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 450 JOHNSON AVE

Project Number: 170588001

Lab Number: L1932118

Report Date: 08/06/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	RPD Limits
Dissolved Metals - Mansfield Lab Associated sample(s): 08 QC Batch ID: WG1262423-4 QC Sample: L1932118-08 Client ID: TMW07_071919 (FIELD FILTERED)					
Thallium, Dissolved	ND	0.00029J	mg/l	NC	20
Vanadium, Dissolved	ND	ND	mg/l	NC	20
Zinc, Dissolved	0.02134	0.00720J	mg/l	NC	20
Dissolved Metals - Mansfield Lab Associated sample(s): 08 QC Batch ID: WG1263255-4 QC Sample: L1932118-08 Client ID: TMW07_071919 (FIELD FILTERED)					
Mercury, Dissolved	ND	ND	mg/l	NC	20

INORGANICS
&
MISCELLANEOUS

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-01
Client ID: SB15_8.0-8.5
Sample Location: BROOKLYN

Date Collected: 07/19/19 11:20
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.3		%	0.100	NA	1	-	07/20/19 13:26	121,2540G	RI

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-03
Client ID: SB10_5.0-5.5
Sample Location: BROOKLYN

Date Collected: 07/19/19 09:40
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.2		%	0.100	NA	1	-	07/20/19 13:26	121,2540G	RI

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-04
Client ID: SB16_3.0-3.5
Sample Location: BROOKLYN

Date Collected: 07/19/19 12:15
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.1		%	0.100	NA	1	-	07/20/19 13:26	121,2540G	RI

Project Name: 450 JOHNSON AVE
Project Number: 170588001
Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-05
Client ID: SB17_13.0-13.5
Sample Location: BROOKLYN
Sample Depth:
Matrix: Soil
Date Collected: 07/19/19 13:20
Date Received: 07/19/19
Field Prep: Not Specified

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	91.3		%	0.100	NA	1	-	07/20/19 13:26	121,2540G	RI

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

SAMPLE RESULTS

Lab ID: L1932118-06
Client ID: SB18_4.0-4.5
Sample Location: BROOKLYN

Date Collected: 07/19/19 14:00
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	85.8		%	0.100	NA	1	-	07/20/19 13:26	121,2540G	RI

Lab Duplicate Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03-06 QC Batch ID: WG1262373-1 QC Sample: L1932023-03 Client ID: DUP Sample						
Solids, Total	89.2	86.2	%	3		20

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1932118-01A	Vial MeOH preserved	A	NA		3.2	Y	Absent		NYTCL-8260HLW(14)
L1932118-01B	Vial water preserved	A	NA		3.2	Y	Absent	20-JUL-19 03:20	NYTCL-8260HLW(14)
L1932118-01C	Vial water preserved	A	NA		3.2	Y	Absent	20-JUL-19 03:20	NYTCL-8260HLW(14)
L1932118-01D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1932118-01E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		NYTCL-8270(14),HOLD-8082(14)
L1932118-01F	Plastic 2oz unpreserved for TS	A	NA		3.2	Y	Absent		TS(7)
L1932118-01G	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		NYTCL-8270(14),HOLD-8082(14)
L1932118-02A	Vial MeOH preserved	A	NA		3.2	Y	Absent		HOLD-8260HLW(14)
L1932118-02B	Vial water preserved	A	NA		3.2	Y	Absent	20-JUL-19 03:20	HOLD-8260HLW(14)
L1932118-02C	Vial water preserved	A	NA		3.2	Y	Absent	20-JUL-19 03:20	HOLD-8260HLW(14)
L1932118-02D	Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		HOLD-METAL(180)
L1932118-02E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		HOLD-8270(14),HOLD-8082(14)
L1932118-02F	Plastic 2oz unpreserved for TS	A	NA		3.2	Y	Absent		HOLD-WETCHEM()
L1932118-02G	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		HOLD-8270(14),HOLD-8082(14)
L1932118-03A	Vial MeOH preserved	A	NA		3.2	Y	Absent		NYTCL-8260HLW(14)
L1932118-03B	Vial water preserved	A	NA		3.2	Y	Absent	20-JUL-19 03:20	NYTCL-8260HLW(14)
L1932118-03C	Vial water preserved	A	NA		3.2	Y	Absent	20-JUL-19 03:20	NYTCL-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1932118-03D	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1932118-03E	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		NYTCL-8270(14),HOLD-8082(14)
L1932118-03F	Metals Only-Glass 60mL/2oz unpreserved	A	NA		3.2	Y	Absent		NYTCL-8270(14),HOLD-8082(14)
L1932118-03G	Plastic 2oz unpreserved for TS	A	NA		3.2	Y	Absent		TS(7)
L1932118-03H	Glass 120ml/4oz unpreserved	A	NA		3.2	Y	Absent		NYTCL-8270(14),HOLD-8082(14)
L1932118-04A	Vial MeOH preserved	B	NA		4.5	Y	Absent		NYTCL-8260HLW(14)
L1932118-04B	Vial water preserved	B	NA		4.5	Y	Absent	20-JUL-19 03:20	NYTCL-8260HLW(14)
L1932118-04C	Vial water preserved	B	NA		4.5	Y	Absent	20-JUL-19 03:20	NYTCL-8260HLW(14)
L1932118-04D	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.5	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1932118-04E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.5	Y	Absent		NYTCL-8270(14)
L1932118-04F	Plastic 2oz unpreserved for TS	B	NA		4.5	Y	Absent		TS(7)
L1932118-04G	Glass 120ml/4oz unpreserved	B	NA		4.5	Y	Absent		NYTCL-8270(14)
L1932118-05A	Vial MeOH preserved	B	NA		4.5	Y	Absent		NYTCL-8260HLW(14)
L1932118-05B	Vial water preserved	B	NA		4.5	Y	Absent	20-JUL-19 03:20	NYTCL-8260HLW(14)
L1932118-05C	Vial water preserved	B	NA		4.5	Y	Absent	20-JUL-19 03:20	NYTCL-8260HLW(14)
L1932118-05D	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.5	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1932118-05E	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.5	Y	Absent		NYTCL-8270(14)
L1932118-05F	Plastic 2oz unpreserved for TS	B	NA		4.5	Y	Absent		TS(7)
L1932118-05G	Glass 120ml/4oz unpreserved	B	NA		4.5	Y	Absent		NYTCL-8270(14)
L1932118-06A	Vial MeOH preserved	B	NA		4.5	Y	Absent		NYTCL-8260HLW(14)
L1932118-06B	Vial water preserved	B	NA		4.5	Y	Absent	20-JUL-19 03:20	NYTCL-8260HLW(14)

*Values in parentheses indicate holding time in days

Project Name: 450 JOHNSON AVE
Project Number: 170588001

Lab Number: L1932118
Report Date: 08/06/19

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1932118-06C	Vial water preserved	B	NA		4.5	Y	Absent	20-JUL-19 03:20	NYTCL-8260HLW(14)
L1932118-06D	Metals Only-Glass 60mL/2oz unpreserved	B	NA		4.5	Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),CA-TI(180),CD-TI(180),K-TI(180),NA-TI(180)
L1932118-06E	Plastic 2oz unpreserved for TS	B	NA		4.5	Y	Absent		TS(7)
L1932118-06F	Glass 120ml/4oz unpreserved	B	NA		4.5	Y	Absent		NYTCL-8270(14),HOLD-8082(14)
L1932118-07A	Vial HCl preserved	B	NA		4.5	Y	Absent		NYTCL-8260(14)
L1932118-07B	Vial HCl preserved	B	NA		4.5	Y	Absent		NYTCL-8260(14)
L1932118-07C	Vial HCl preserved	B	NA		4.5	Y	Absent		NYTCL-8260(14)
L1932118-07D	Amber 250ml unpreserved	B	7	7	4.5	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1932118-07E	Amber 250ml unpreserved	B	7	7	4.5	Y	Absent		NYTCL-8270-SIM-LVI(7),NYTCL-8270-LVI(7)
L1932118-08A	Amber 250ml HNO3 preserved	B	7	<2	4.5	N	Absent		CU-6020S(180),K-6020S(180),SE-6020S(180),V-6020S(180),MN-6020S(180),BE-6020S(180),CO-6020S(180),MG-6020S(180),ZN-6020S(180),CA-6020S(180),CR-6020S(180),FE-6020S(180),BA-6020S(180),NA-6020S(180),NI-6020S(180),PB-6020S(180),TL-6020S(180),AG-6020S(180),AS-6020S(180),SB-6020S(180),AL-6020S(180),CD-6020S(180),HG-S(28)
L1932118-08B	Amber 120ml unpreserved	B	7	7	4.5	Y	Absent		HOLD-8270(7)
L1932118-08C	Amber 120ml unpreserved	B	7	7	4.5	Y	Absent		HOLD-8270(7)
L1932118-08D	Amber 120ml unpreserved	B	7	7	4.5	Y	Absent		HOLD-8270(7)
L1932118-08E	Amber 250ml unpreserved	B	7	7	4.5	Y	Absent		HOLD-8270(7)
L1932118-09A	Vial HCl preserved	B	NA		4.5	Y	Absent		NYTCL-8260(14)
L1932118-09B	Vial HCl preserved	B	NA		4.5	Y	Absent		NYTCL-8260(14)
L1932118-10A	Vial HCl preserved	B	NA		4.5	Y	Absent		ARCHIVE()
L1932118-10B	Vial HCl preserved	B	NA		4.5	Y	Absent		ARCHIVE()
L1932118-10C	Vial HCl preserved	B	NA		4.5	Y	Absent		ARCHIVE()

*Values in parentheses indicate holding time in days

Project Name:	450 JOHNSON AVE	**Lab Number:**	L1932118
Project Number:	170588001	**Report Date:**	08/06/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: DU Report with 'J' Qualifiers

Project Name:	450 JOHNSON AVE	**Lab Number:**	L1932118
Project Number:	170588001	**Report Date:**	08/06/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. The Target analyte concentration is below the quantitation limit (RL), but above the Method Detection Limit (MDL) or Estimated Detection Limit (EDL) for SPME-related analyses. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the method detection limit (MDL) for the sample, or estimated detection limit (EDL) for SPME-related analyses.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: DU Report with 'J' Qualifiers

Project Name:	450 JOHNSON AVE	**Lab Number:**	L1932118
Project Number:	170588001	**Report Date:**	08/06/19

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IV, 2007.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B, SM4500NO2-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 23

Date Rec'd in Lab: 7/19/19

ALPHA Job #: L1932118

Client Information
Client: Langan
Address: 360 West 31st St.
New York, NY 10001
Phone: 212 479 5400
Fax: 212 479 2727
Email: jleung@langan.com

Project Information
Project Name: 450 Johnson Ave
Project Location: Brooklyn
Project #: 170588001
(Use Project name as Project #) ☐
Project Manager: Julia Leung
ALPHAQuote #: —

Turn-Around Time
Standard ☐ Due Date:
Rush (only if pre approved) ☒ 24-48 hours # of Days:

Deliverables
☐ ASP-A ☒ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information
☐ Same as Client Info
PO # CONCUR

Regulatory Requirement
☒ NY TOGS ☒ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Sample Specific Comments

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TCL VOCs	TCLSVOCs	TALMetals	PCBs	PCB HOLD	Hold all parameters			Total Bottle
32118-01	SB15_8.0-8.5	7/19/19	11:20	S	DC	X	X	X		X				
02	SB10_10.5-11.0	7/19/19	9:50	S	DC						X			
03	SB10_5.0-5.5	7/19/19	9:40	S	DC	X	X	X		X				
04	SB16_3.0-3.5	7/19/19	12:15	S	DC	X	X	X	X					
05	SB17_13.0-13.5	7/19/19	13:20	S	DC	X	X	X	X					
06	SB18_4.0-4.5	7/19/19	14:00	S	DC	X	X	X		X				

Container Type	V	A	A	A	A	A			
Preservative	F	A	A	A	A	A			

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Relinquished By:	Date/Time	Received By:	Date/Time
Langan	7/19/19 1530	Kamesh Jackson AAL	7/19 1530
PJS	7/19 1837	PJS	7/19/19 19:30
	7/19/19 23:30		7/19/19 23:30

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

NEW YORK CHAIN OF CUSTODY

ALPHA ANALYTICAL

Westborough, MA 01581
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 2 of 23

Date Rec'd in Lab: 7/19/19

ALPHA Job #: L1932118

Client Information

Client: Langan
Address: 360 West 31st St
New York, NY 10001
Phone: 212 479 5400
Fax: 212 479 7727
Email: jleung@langan.com

Project Information

Project Name: 450 Johnson Ave
Project Location: Brooklyn
Project #: 170 538 001
(Use Project name as Project #) ☐
Project Manager: Julia Leung
ALPHAQuote #: —

Turn-Around Time

Standard ☐ Due Date:
Rush (only if pre approved) ☒ 24-48 hours # of Days:

Deliverables

☐ ASP-A ☒ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Billing Information

☐ Same as Client Info
PO # concur

Regulatory Requirement

☒ NY TOGS ☒ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Disposal Site Information

Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐

Other project specific requirements/comments:

Hold Field filtered SVOCs

Please specify Metals or TAL.

ANALYSIS

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TCL VOCs	TCL SVOCs	TCL SVOCs field filtered HOLD	Dissolved metals field filtered					Total Bottle
32118-07	TMW07-071919	7/19/19	0900	GW	DC	X	X	X	X	DC				
08	TMW07-071919 (field filtered)	7/19/19	0900	GW	DC			X	X					

Sample Filtration
☒ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Sample Specific Comments

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type	V	A	A	B/A					
Preservative	B	A	A	C/A					

Relinquished By:	Date/Time	Received By:	Date/Time
Langan	7/19/19 1530	Kenneth Jackson AAL	7/19 1530
PJ	7/19 1637	PJ	7/19/19 17:20
PJ	7/19 23:30		7/19/19 23:30

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONSTITUTIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

ANALYTICAL REPORT

Lab Number:	L1932180
Client:	Langan Engineering & Environmental 21 Penn Plaza 360 W. 31st Street, 8th Floor New York, NY 10001-2727
ATTN:	Julia Leung
Phone:	(212) 479-5400
Project Name:	450 JOHNSON AVE.
Project Number:	170588001
Report Date:	07/23/19

The original project report/data package is held by Alpha Analytical. This report/data package is paginated and should be reproduced only in its entirety. Alpha Analytical holds no responsibility for results and/or data that are not consistent with the original.

Certifications & Approvals: MA (M-MA086), NH NELAP (2064), CT (PH-0574), IL (200077), ME (MA00086), MD (348), NJ (MA935), NY (11148), NC (25700/666), PA (68-03671), RI (LAO00065), TX (T104704476), VT (VT-0935), VA (460195), USDA (Permit #P330-17-00196).

320 Forbes Boulevard, Mansfield, MA 02048-1806
508-822-9300 (Fax) 508-822-3288 800-624-9220 - www.alphalab.com

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1932180
Report Date: 07/23/19

Alpha Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L1932180-01	SSV02_071919	SOIL_VAPOR	BROOKLYN, NY	07/19/19 15:08	07/19/19
L1932180-02	SSV03_071919	SOIL_VAPOR	BROOKLYN, NY	07/19/19 13:05	07/19/19
L1932180-03	IA02_071919	AIR	BROOKLYN, NY	07/19/19 15:04	07/19/19
L1932180-04	IA03_071919	AIR	BROOKLYN, NY	07/19/19 14:50	07/19/19

Project Name:	450 JOHNSON AVE.	**Lab Number:**	L1932180
Project Number:	170588001	**Report Date:**	07/23/19

Case Narrative

The samples were received in accordance with the Chain of Custody and no significant deviations were encountered during the preparation or analysis unless otherwise noted. Sample Receipt, Container Information, and the Chain of Custody are located at the back of the report.

Results contained within this report relate only to the samples submitted under this Alpha Lab Number and meet NELAP requirements for all NELAP accredited parameters unless otherwise noted in the following narrative. The data presented in this report is organized by parameter (i.e. VOC, SVOC, etc.). Sample specific Quality Control data (i.e. Surrogate Spike Recovery) is reported at the end of the target analyte list for each individual sample, followed by the Laboratory Batch Quality Control at the end of each parameter. Tentatively Identified Compounds (TICs), if requested, are reported for compounds identified to be present and are not part of the method/program Target Compound List, even if only a subset of the TCL are being reported. If a sample was re-analyzed or re-extracted due to a required quality control corrective action and if both sets of data are reported, the Laboratory ID of the re-analysis or re-extraction is designated with an "R" or "RE", respectively.

When multiple Batch Quality Control elements are reported (e.g. more than one LCS), the associated samples for each element are noted in the grey shaded header line of each data table. Any Laboratory Batch, Sample Specific % recovery or RPD value that is outside the listed Acceptance Criteria is bolded in the report. In reference to questions H (CAM) or 4 (RCP) when "NO" is checked, the performance criteria for CAM and RCP methods allow for some quality control failures to occur and still be within method compliance. In these instances, the specific failure is not narrated but noted in the associated QC Outlier Summary Report, located directly after the Case Narrative. QC information is also incorporated in the Data Usability Assessment table (Format 11) of our Data Merger tool, where it can be reviewed in conjunction with the sample result, associated regulatory criteria and any associated data usability implications.

Soil/sediments, solids and tissues are reported on a dry weight basis unless otherwise noted. Definitions of all data qualifiers and acronyms used in this report are provided in the Glossary located at the back of the report.

HOLD POLICY - For samples submitted on hold, Alpha's policy is to hold samples (with the exception of Air canisters) free of charge for 21 calendar days from the date the project is completed. After 21 calendar days, we will dispose of all samples submitted including those put on hold unless you have contacted your Alpha Project Manager and made arrangements for Alpha to continue to hold the samples. Air canisters will be disposed after 3 business days from the date the project is completed.

Please contact Project Management at 800-624-9220 with any questions.

Project Name:	450 JOHNSON AVE.	**Lab Number:**	L1932180
Project Number:	170588001	**Report Date:**	07/23/19

Case Narrative (continued)

Volatile Organics in Air

Canisters were released from the laboratory on July 17, 2019. The canister certification results are provided as an addendum.

L1932180-01 and -02: The samples have elevated detection limits due to the dilution required by the elevated concentrations of target compounds in the samples.

TO15

The WG1262915-3 LCS recovery for methylene chloride (131%) is above the upper 130% acceptance limit. All samples associated with this LCS do not have reportable amounts of this analyte.

I, the undersigned, attest under the pains and penalties of perjury that, to the best of my knowledge and belief and based upon my personal inquiry of those responsible for providing the information contained in this analytical report, such information is accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized Signature: Christopher J. Anderson

Title: Technical Director/Representative Date: 07/23/19

AIR

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1932180
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1932180-01 D
Client ID: SSV02_071919
Sample Location: BROOKLYN, NY

Date Collected: 07/19/19 15:08
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 07/23/19 01:57
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.792	0.769	--	3.92	3.80	--		3.846
Chloromethane	ND	0.769	--	ND	1.59	--		3.846
Freon-114	ND	0.769	--	ND	5.38	--		3.846
Vinyl chloride	ND	0.769	--	ND	1.97	--		3.846
1,3-Butadiene	ND	0.769	--	ND	1.70	--		3.846
Bromomethane	ND	0.769	--	ND	2.99	--		3.846
Chloroethane	ND	0.769	--	ND	2.03	--		3.846
Ethanol	ND	19.2	--	ND	36.2	--		3.846
Vinyl bromide	ND	0.769	--	ND	3.36	--		3.846
Acetone	40.0	3.85	--	95.0	9.15	--		3.846
Trichlorofluoromethane	ND	0.769	--	ND	4.32	--		3.846
Isopropanol	ND	1.92	--	ND	4.72	--		3.846
1,1-Dichloroethene	ND	0.769	--	ND	3.05	--		3.846
Tertiary butyl Alcohol	7.51	1.92	--	22.8	5.82	--		3.846
Methylene chloride	ND	1.92	--	ND	6.67	--		3.846
3-Chloropropene	ND	0.769	--	ND	2.41	--		3.846
Carbon disulfide	4.64	0.769	--	14.4	2.39	--		3.846
Freon-113	ND	0.769	--	ND	5.89	--		3.846
trans-1,2-Dichloroethene	ND	0.769	--	ND	3.05	--		3.846
1,1-Dichloroethane	ND	0.769	--	ND	3.11	--		3.846
Methyl tert butyl ether	ND	0.769	--	ND	2.77	--		3.846
2-Butanone	17.6	1.92	--	51.9	5.66	--		3.846
cis-1,2-Dichloroethene	ND	0.769	--	ND	3.05	--		3.846

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1932180
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1932180-01 D
Client ID: SSV02_071919
Sample Location: BROOKLYN, NY

Date Collected: 07/19/19 15:08
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	1.92	--	ND	6.92	--		3.846
Chloroform	ND	0.769	--	ND	3.76	--		3.846
Tetrahydrofuran	ND	1.92	--	ND	5.66	--		3.846
1,2-Dichloroethane	ND	0.769	--	ND	3.11	--		3.846
n-Hexane	69.2	0.769	--	244	2.71	--		3.846
1,1,1-Trichloroethane	ND	0.769	--	ND	4.20	--		3.846
Benzene	30.8	0.769	--	98.4	2.46	--		3.846
Carbon tetrachloride	ND	0.769	--	ND	4.84	--		3.846
Cyclohexane	37.1	0.769	--	128	2.65	--		3.846
1,2-Dichloropropane	ND	0.769	--	ND	3.55	--		3.846
Bromodichloromethane	ND	0.769	--	ND	5.15	--		3.846
1,4-Dioxane	ND	0.769	--	ND	2.77	--		3.846
Trichloroethene	1.43	0.769	--	7.69	4.13	--		3.846
2,2,4-Trimethylpentane	42.9	0.769	--	200	3.59	--		3.846
Heptane	99.7	0.769	--	409	3.15	--		3.846
cis-1,3-Dichloropropene	ND	0.769	--	ND	3.49	--		3.846
4-Methyl-2-pentanone	ND	1.92	--	ND	7.87	--		3.846
trans-1,3-Dichloropropene	ND	0.769	--	ND	3.49	--		3.846
1,1,2-Trichloroethane	ND	0.769	--	ND	4.20	--		3.846
Toluene	270	0.769	--	1020	2.90	--		3.846
2-Hexanone	ND	0.769	--	ND	3.15	--		3.846
Dibromochloromethane	ND	0.769	--	ND	6.55	--		3.846
1,2-Dibromoethane	ND	0.769	--	ND	5.91	--		3.846
Tetrachloroethene	0.981	0.769	--	6.65	5.21	--		3.846
Chlorobenzene	ND	0.769	--	ND	3.54	--		3.846
Ethylbenzene	57.3	0.769	--	249	3.34	--		3.846

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1932180
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1932180-01 D
Client ID: SSV02_071919
Sample Location: BROOKLYN, NY

Date Collected: 07/19/19 15:08
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
p/m-Xylene	146	1.54	--	634	6.69	--		3.846
Bromoform	ND	0.769	--	ND	7.95	--		3.846
Styrene	ND	0.769	--	ND	3.27	--		3.846
1,1,2,2-Tetrachloroethane	ND	0.769	--	ND	5.28	--		3.846
o-Xylene	66.3	0.769	--	288	3.34	--		3.846
4-Ethyltoluene	6.83	0.769	--	33.6	3.78	--		3.846
1,3,5-Trimethylbenzene	10.8	0.769	--	53.1	3.78	--		3.846
1,2,4-Trimethylbenzene	30.9	0.769	--	152	3.78	--		3.846
Benzyl chloride	ND	0.769	--	ND	3.98	--		3.846
1,3-Dichlorobenzene	ND	0.769	--	ND	4.62	--		3.846
1,4-Dichlorobenzene	ND	0.769	--	ND	4.62	--		3.846
1,2-Dichlorobenzene	ND	0.769	--	ND	4.62	--		3.846
1,2,4-Trichlorobenzene	ND	0.769	--	ND	5.71	--		3.846
Hexachlorobutadiene	ND	0.769	--	ND	8.20	--		3.846

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	106		60-140
Bromochloromethane	96		60-140
chlorobenzene-d5	104		60-140

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1932180
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1932180-02 D
Client ID: SSV03_071919
Sample Location: BROOKLYN, NY

Date Collected: 07/19/19 13:05
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Soil_Vapor
Anaytical Method: 48,TO-15
Analytical Date: 07/23/19 02:34
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.683	0.667	--	3.38	3.30	--		3.333
Chloromethane	ND	0.667	--	ND	1.38	--		3.333
Freon-114	ND	0.667	--	ND	4.66	--		3.333
Vinyl chloride	ND	0.667	--	ND	1.71	--		3.333
1,3-Butadiene	ND	0.667	--	ND	1.48	--		3.333
Bromomethane	ND	0.667	--	ND	2.59	--		3.333
Chloroethane	ND	0.667	--	ND	1.76	--		3.333
Ethanol	ND	16.7	--	ND	31.5	--		3.333
Vinyl bromide	ND	0.667	--	ND	2.92	--		3.333
Acetone	27.4	3.33	--	65.1	7.91	--		3.333
Trichlorofluoromethane	ND	0.667	--	ND	3.75	--		3.333
Isopropanol	ND	1.67	--	ND	4.10	--		3.333
1,1-Dichloroethene	ND	0.667	--	ND	2.64	--		3.333
Tertiary butyl Alcohol	5.54	1.67	--	16.8	5.06	--		3.333
Methylene chloride	ND	1.67	--	ND	5.80	--		3.333
3-Chloropropene	ND	0.667	--	ND	2.09	--		3.333
Carbon disulfide	3.45	0.667	--	10.7	2.08	--		3.333
Freon-113	ND	0.667	--	ND	5.11	--		3.333
trans-1,2-Dichloroethene	ND	0.667	--	ND	2.64	--		3.333
1,1-Dichloroethane	ND	0.667	--	ND	2.70	--		3.333
Methyl tert butyl ether	ND	0.667	--	ND	2.40	--		3.333
2-Butanone	11.0	1.67	--	32.4	4.93	--		3.333
cis-1,2-Dichloroethene	ND	0.667	--	ND	2.64	--		3.333

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1932180
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1932180-02 D
Client ID: SSV03_071919
Sample Location: BROOKLYN, NY

Date Collected: 07/19/19 13:05
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Ethyl Acetate	ND	1.67	--	ND	6.02	--		3.333
Chloroform	ND	0.667	--	ND	3.26	--		3.333
Tetrahydrofuran	ND	1.67	--	ND	4.93	--		3.333
1,2-Dichloroethane	ND	0.667	--	ND	2.70	--		3.333
n-Hexane	35.5	0.667	--	125	2.35	--		3.333
1,1,1-Trichloroethane	ND	0.667	--	ND	3.64	--		3.333
Benzene	17.8	0.667	--	56.9	2.13	--		3.333
Carbon tetrachloride	ND	0.667	--	ND	4.20	--		3.333
Cyclohexane	24.8	0.667	--	85.4	2.30	--		3.333
1,2-Dichloropropane	ND	0.667	--	ND	3.08	--		3.333
Bromodichloromethane	ND	0.667	--	ND	4.47	--		3.333
1,4-Dioxane	ND	0.667	--	ND	2.40	--		3.333
Trichloroethene	ND	0.667	--	ND	3.58	--		3.333
2,2,4-Trimethylpentane	30.7	0.667	--	143	3.12	--		3.333
Heptane	65.3	0.667	--	268	2.73	--		3.333
cis-1,3-Dichloropropene	ND	0.667	--	ND	3.03	--		3.333
4-Methyl-2-pentanone	ND	1.67	--	ND	6.84	--		3.333
trans-1,3-Dichloropropene	ND	0.667	--	ND	3.03	--		3.333
1,1,2-Trichloroethane	ND	0.667	--	ND	3.64	--		3.333
Toluene	190	0.667	--	716	2.51	--		3.333
2-Hexanone	ND	0.667	--	ND	2.73	--		3.333
Dibromochloromethane	ND	0.667	--	ND	5.68	--		3.333
1,2-Dibromoethane	ND	0.667	--	ND	5.13	--		3.333
Tetrachloroethene	5.88	0.667	--	39.9	4.52	--		3.333
Chlorobenzene	ND	0.667	--	ND	3.07	--		3.333
Ethylbenzene	44.9	0.667	--	195	2.90	--		3.333

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1932180
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1932180-02 D
Client ID: SSV03_071919
Sample Location: BROOKLYN, NY

Date Collected: 07/19/19 13:05
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
p/m-Xylene	119	1.33	--	517	5.78	--		3.333
Bromoform	ND	0.667	--	ND	6.90	--		3.333
Styrene	ND	0.667	--	ND	2.84	--		3.333
1,1,2,2-Tetrachloroethane	ND	0.667	--	ND	4.58	--		3.333
o-Xylene	54.8	0.667	--	238	2.90	--		3.333
4-Ethyltoluene	5.57	0.667	--	27.4	3.28	--		3.333
1,3,5-Trimethylbenzene	9.38	0.667	--	46.1	3.28	--		3.333
1,2,4-Trimethylbenzene	26.1	0.667	--	128	3.28	--		3.333
Benzyl chloride	ND	0.667	--	ND	3.45	--		3.333
1,3-Dichlorobenzene	ND	0.667	--	ND	4.01	--		3.333
1,4-Dichlorobenzene	ND	0.667	--	ND	4.01	--		3.333
1,2-Dichlorobenzene	ND	0.667	--	ND	4.01	--		3.333
1,2,4-Trichlorobenzene	ND	0.667	--	ND	4.95	--		3.333
Hexachlorobutadiene	ND	0.667	--	ND	7.11	--		3.333

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	108		60-140
Bromochloromethane	98		60-140
chlorobenzene-d5	107		60-140

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1932180
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1932180-03
Client ID: IA02_071919
Sample Location: BROOKLYN, NY

Date Collected: 07/19/19 15:04
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 07/22/19 18:39
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.556	0.200	--	2.75	0.989	--		1
Chloromethane	0.727	0.200	--	1.50	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	5.56	0.200	--	12.3	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	184	5.00	--	347	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	6.47	1.00	--	15.4	2.38	--		1
Trichlorofluoromethane	0.270	0.200	--	1.52	1.12	--		1
Isopropanol	2.94	0.500	--	7.23	1.23	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	1.24	0.500	--	3.66	1.47	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	0.225	0.200	--	1.10	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1932180
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1932180-03
Client ID: IA02_071919
Sample Location: BROOKLYN, NY

Date Collected: 07/19/19 15:04
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
n-Hexane	18.4	0.200	--	64.8	0.705	--		1
Benzene	16.7	0.200	--	53.4	0.639	--		1
Cyclohexane	6.69	0.200	--	23.0	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	5.90	0.200	--	27.6	0.934	--		1
Heptane	10.7	0.200	--	43.9	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	39.6	0.200	--	149	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	6.16	0.200	--	26.8	0.869	--		1
p/m-Xylene	18.9	0.400	--	82.1	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	0.989	0.200	--	4.21	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	7.17	0.200	--	31.1	0.869	--		1
4-Ethyltoluene	1.38	0.200	--	6.78	0.983	--		1
1,3,5-Trimethylbenzene	1.79	0.200	--	8.80	0.983	--		1
1,2,4-Trimethylbenzene	6.51	0.200	--	32.0	0.983	--		1

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1932180
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1932180-03
Client ID: IA02_071919
Sample Location: BROOKLYN, NY

Date Collected: 07/19/19 15:04
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	80		60-140
Bromochloromethane	86		60-140
chlorobenzene-d5	86		60-140

Project Name: 450 JOHNSON AVE.
Project Number: 170588001
Lab Number: L1932180
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1932180-03
Client ID: IA02_071919
Sample Location: BROOKLYN, NY

Date Collected: 07/19/19 15:04
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 07/22/19 18:39
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	0.756	0.500	--	2.63	1.74	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	0.046	0.020	--	0.251	0.109	--		1
Carbon tetrachloride	0.093	0.020	--	0.585	0.126	--		1
Trichloroethene	0.049	0.020	--	0.263	0.107	--		1
Tetrachloroethene	0.082	0.020	--	0.556	0.136	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-difluorobenzene	78		60-140
bromochloromethane	82		60-140
chlorobenzene-d5	86		60-140

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1932180
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1932180-04
Client ID: IA03_071919
Sample Location: BROOKLYN, NY

Date Collected: 07/19/19 14:50
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 07/22/19 19:20
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Dichlorodifluoromethane	0.543	0.200	--	2.69	0.989	--		1
Chloromethane	0.752	0.200	--	1.55	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
1,3-Butadiene	1.57	0.200	--	3.47	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	70.5	5.00	--	133	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	9.07	1.00	--	21.5	2.38	--		1
Trichlorofluoromethane	0.275	0.200	--	1.55	1.12	--		1
Isopropanol	3.61	0.500	--	8.87	1.23	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	1.50	0.500	--	4.42	1.47	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	1.26	0.500	--	3.72	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1932180
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1932180-04
Client ID: IA03_071919
Sample Location: BROOKLYN, NY

Date Collected: 07/19/19 14:50
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
n-Hexane	3.83	0.200	--	13.5	0.705	--		1
Benzene	5.21	0.200	--	16.6	0.639	--		1
Cyclohexane	1.39	0.200	--	4.78	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
2,2,4-Trimethylpentane	1.52	0.200	--	7.10	0.934	--		1
Heptane	2.49	0.200	--	10.2	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	10.9	0.200	--	41.1	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	1.57	0.200	--	6.82	0.869	--		1
p/m-Xylene	4.85	0.400	--	21.1	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	0.526	0.200	--	2.24	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	1.83	0.200	--	7.95	0.869	--		1
4-Ethyltoluene	0.279	0.200	--	1.37	0.983	--		1
1,3,5-Trimethylbenzene	0.429	0.200	--	2.11	0.983	--		1
1,2,4-Trimethylbenzene	1.81	0.200	--	8.90	0.983	--		1

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1932180
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1932180-04
Client ID: IA03_071919
Sample Location: BROOKLYN, NY

Date Collected: 07/19/19 14:50
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	81		60-140
Bromochloromethane	87		60-140
chlorobenzene-d5	87		60-140

Project Name: 450 JOHNSON AVE.
Project Number: 170588001
Lab Number: L1932180
Report Date: 07/23/19

SAMPLE RESULTS

Lab ID: L1932180-04
Client ID: IA03_071919
Sample Location: BROOKLYN, NY

Date Collected: 07/19/19 14:50
Date Received: 07/19/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 07/22/19 19:20
Analyst: RY

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	7.05	0.500	--	24.5	1.74	--		1
cis-1,2-Dichloroethene	0.036	0.020	--	0.143	0.079	--		1
1,1,1-Trichloroethane	1.55	0.020	--	8.46	0.109	--		1
Carbon tetrachloride	0.089	0.020	--	0.560	0.126	--		1
Trichloroethene	0.172	0.020	--	0.924	0.107	--		1
Tetrachloroethene	0.208	0.020	--	1.41	0.136	--		1

Internal Standard	**% Recovery**	**Qualifier**	**Acceptance Criteria**
1,4-difluorobenzene	79		60-140
bromochloromethane	84		60-140
chlorobenzene-d5	85		60-140

Project Name: 450 JOHNSON AVE. **Lab Number:** L1932180

Project Number: 170588001 **Report Date:** 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 07/22/19 14:43

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-04 Batch: WG1262915-4								
Propylene	ND	0.500	--	ND	0.861	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: 450 JOHNSON AVE. **Lab Number:** L1932180

Project Number: 170588001 **Report Date:** 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 07/22/19 14:43

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-04 Batch: WG1262915-4								
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1

Project Name: 450 JOHNSON AVE.
Project Number: 170588001
Lab Number: L1932180
Report Date: 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15
Analytical Date: 07/22/19 14:43

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab for sample(s): 01-04 Batch: WG1262915-4								
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
o-Xylene	ND	0.200	--	ND	0.869	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: 450 JOHNSON AVE.
Project Number: 170588001
Lab Number: L1932180
Report Date: 07/23/19

Method Blank Analysis
Batch Quality Control

Analytical Method: 48,TO-15-SIM
Analytical Date: 07/22/19 15:24

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab for sample(s): 03-04 Batch: WG1262918-4								
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1932180
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-04 Batch: WG1262915-3								
Propylene	116		-		70-130	-		
Dichlorodifluoromethane	107		-		70-130	-		
Chloromethane	113		-		70-130	-		
Freon-114	107		-		70-130	-		
Vinyl chloride	106		-		70-130	-		
1,3-Butadiene	125		-		70-130	-		
Bromomethane	101		-		70-130	-		
Chloroethane	100		-		70-130	-		
Ethanol	126		-		40-160	-		
Vinyl bromide	99		-		70-130	-		
Acetone	87		-		40-160	-		
Trichlorofluoromethane	106		-		70-130	-		
Isopropanol	90		-		40-160	-		
1,1-Dichloroethene	110		-		70-130	-		
Tertiary butyl Alcohol	110		-		70-130	-		
Methylene chloride	**131**	Q	-		70-130	-		
3-Chloropropene	110		-		70-130	-		
Carbon disulfide	105		-		70-130	-		
Freon-113	106		-		70-130	-		
trans-1,2-Dichloroethene	100		-		70-130	-		
1,1-Dichloroethane	95		-		70-130	-		
Methyl tert butyl ether	93		-		70-130	-		
Vinyl acetate	97		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1932180
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-04 Batch: WG1262915-3								
2-Butanone	89		-		70-130	-		
cis-1,2-Dichloroethene	91		-		70-130	-		
Ethyl Acetate	98		-		70-130	-		
Chloroform	95		-		70-130	-		
Tetrahydrofuran	104		-		70-130	-		
1,2-Dichloroethane	106		-		70-130	-		
n-Hexane	86		-		70-130	-		
1,1,1-Trichloroethane	102		-		70-130	-		
Benzene	97		-		70-130	-		
Carbon tetrachloride	110		-		70-130	-		
Cyclohexane	101		-		70-130	-		
1,2-Dichloropropane	103		-		70-130	-		
Bromodichloromethane	103		-		70-130	-		
1,4-Dioxane	99		-		70-130	-		
Trichloroethene	98		-		70-130	-		
2,2,4-Trimethylpentane	103		-		70-130	-		
Heptane	106		-		70-130	-		
cis-1,3-Dichloropropene	109		-		70-130	-		
4-Methyl-2-pentanone	109		-		70-130	-		
trans-1,3-Dichloropropene	98		-		70-130	-		
1,1,2-Trichloroethane	107		-		70-130	-		
Toluene	86		-		70-130	-		
2-Hexanone	98		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1932180
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air - Mansfield Lab Associated sample(s): 01-04 Batch: WG1262915-3								
Dibromochloromethane	96		-		70-130	-		
1,2-Dibromoethane	87		-		70-130	-		
Tetrachloroethene	86		-		70-130	-		
Chlorobenzene	91		-		70-130	-		
Ethylbenzene	94		-		70-130	-		
p/m-Xylene	94		-		70-130	-		
Bromoform	108		-		70-130	-		
Styrene	92		-		70-130	-		
1,1,2,2-Tetrachloroethane	97		-		70-130	-		
o-Xylene	96		-		70-130	-		
4-Ethyltoluene	92		-		70-130	-		
1,3,5-Trimethylbenzene	96		-		70-130	-		
1,2,4-Trimethylbenzene	95		-		70-130	-		
Benzyl chloride	95		-		70-130	-		
1,3-Dichlorobenzene	86		-		70-130	-		
1,4-Dichlorobenzene	105		-		70-130	-		
1,2-Dichlorobenzene	93		-		70-130	-		
1,2,4-Trichlorobenzene	98		-		70-130	-		
Hexachlorobutadiene	89		-		70-130	-		

Lab Control Sample Analysis
Batch Quality Control

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1932180
Report Date: 07/23/19

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics in Air by SIM - Mansfield Lab Associated sample(s): 03-04 Batch: WG1262918-3								
Vinyl chloride	96		-		70-130	-		25
1,1-Dichloroethene	101		-		70-130	-		25
Methylene chloride	127		-		70-130	-		25
cis-1,2-Dichloroethene	79		-		70-130	-		25
1,1,1-Trichloroethane	96		-		70-130	-		25
Carbon tetrachloride	99		-		70-130	-		25
Trichloroethene	89		-		70-130	-		25
Tetrachloroethene	83		-		70-130	-		25

Project Name: 450 JOHNSON AVE.

Lab Number: L1932180

Project Number: 170588001

Report Date: 07/23/19

Canister and Flow Controller Information

Samplenum	Client ID	Media ID	Media Type	Date Prepared	Bottle Order	Cleaning Batch ID	Can Leak Check	Initial Pressure (in. Hg)	Pressure on Receipt (in. Hg)	Flow Controler Leak Chk	Flow Out mL/min	Flow In mL/min	% RPD
L1932180-01	SSV02_071919	0492	Flow 5	07/17/19	297202		-	-	-	Pass	4.5	4.7	4
L1932180-01	SSV02_071919	2824	2.7L Can	07/17/19	297202	L1930221-06	Pass	-29.5	-9.6	-	-	-	-
L1932180-02	SSV03_071919	01248	FLOW 5	07/17/19	297202		-	-	-	Pass	4.5	4.5	0
L1932180-02	SSV03_071919	230	2.7L Can	07/17/19	297202	L1930221-06	Pass	-29.7	-4.5	-	-	-	-
L1932180-03	IA02_071919	0813	Flow 5	07/17/19	297202		-	-	-	Pass	4.5	4.6	2
L1932180-03	IA02_071919	2872	2.7L Can	07/17/19	297202	L1930221-06	Pass	-29.5	-7.8	-	-	-	-
L1932180-04	IA03_071919	0435	Flow 5	07/17/19	297202		-	-	-	Pass	4.5	7.3	47
L1932180-04	IA03_071919	2825	2.7L Can	07/17/19	297202	L1930221-06	Pass	-29.6	-8.8	-	-	-	-

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1930221
Report Date: 07/23/19

Air Canister Certification Results

Lab ID: L1930221-06
Client ID: CAN 453 SHELF 10
Sample Location:

Date Collected: 06/11/19 09:00
Date Received: 07/11/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15
Analytical Date: 07/11/19 21:44
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air - Mansfield Lab								
Chlorodifluoromethane	ND	0.200	--	ND	0.707	--		1
Propylene	ND	0.500	--	ND	0.861	--		1
Propane	ND	0.500	--	ND	0.902	--		1
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.200	--	ND	1.40	--		1
Methanol	ND	5.00	--	ND	6.55	--		1
Vinyl chloride	ND	0.200	--	ND	0.511	--		1
1,3-Butadiene	ND	0.200	--	ND	0.442	--		1
Butane	ND	0.200	--	ND	0.475	--		1
Bromomethane	ND	0.200	--	ND	0.777	--		1
Chloroethane	ND	0.200	--	ND	0.528	--		1
Ethanol	ND	5.00	--	ND	9.42	--		1
Dichlorofluoromethane	ND	0.200	--	ND	0.842	--		1
Vinyl bromide	ND	0.200	--	ND	0.874	--		1
Acrolein	ND	0.500	--	ND	1.15	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Acetonitrile	ND	0.200	--	ND	0.336	--		1
Trichlorofluoromethane	ND	0.200	--	ND	1.12	--		1
Isopropanol	ND	0.500	--	ND	1.23	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
Pentane	ND	0.200	--	ND	0.590	--		1
Ethyl ether	ND	0.200	--	ND	0.606	--		1
1,1-Dichloroethene	ND	0.200	--	ND	0.793	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1930221
Report Date: 07/23/19

Air Canister Certification Results

Lab ID: L1930221-06
Client ID: CAN 453 SHELF 10
Sample Location:

Date Collected: 06/11/19 09:00
Date Received: 07/11/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Tertiary butyl Alcohol	ND	0.500	--	ND	1.52	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
3-Chloropropene	ND	0.200	--	ND	0.626	--		1
Carbon disulfide	ND	0.200	--	ND	0.623	--		1
Freon-113	ND	0.200	--	ND	1.53	--		1
trans-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
1,1-Dichloroethane	ND	0.200	--	ND	0.809	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
Vinyl acetate	ND	1.00	--	ND	3.52	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
Xylenes, total	ND	0.600	--	ND	0.869	--		1
cis-1,2-Dichloroethene	ND	0.200	--	ND	0.793	--		1
Ethyl Acetate	ND	0.500	--	ND	1.80	--		1
Chloroform	ND	0.200	--	ND	0.977	--		1
Tetrahydrofuran	ND	0.500	--	ND	1.47	--		1
2,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
1,2-Dichloroethane	ND	0.200	--	ND	0.809	--		1
n-Hexane	ND	0.200	--	ND	0.705	--		1
Diisopropyl ether	ND	0.200	--	ND	0.836	--		1
tert-Butyl Ethyl Ether	ND	0.200	--	ND	0.836	--		1
1,2-Dichloroethene (total)	ND	1.00	--	ND	1.00	--		1
1,1,1-Trichloroethane	ND	0.200	--	ND	1.09	--		1
1,1-Dichloropropene	ND	0.200	--	ND	0.908	--		1
Benzene	ND	0.200	--	ND	0.639	--		1
Carbon tetrachloride	ND	0.200	--	ND	1.26	--		1
Cyclohexane	ND	0.200	--	ND	0.688	--		1
tert-Amyl Methyl Ether	ND	0.200	--	ND	0.836	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1930221
Report Date: 07/23/19

Air Canister Certification Results

Lab ID: L1930221-06
Client ID: CAN 453 SHELF 10
Sample Location:

Date Collected: 06/11/19 09:00
Date Received: 07/11/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
Dibromomethane	ND	0.200	--	ND	1.42	--		1
1,2-Dichloropropane	ND	0.200	--	ND	0.924	--		1
Bromodichloromethane	ND	0.200	--	ND	1.34	--		1
1,4-Dioxane	ND	0.200	--	ND	0.721	--		1
Trichloroethene	ND	0.200	--	ND	1.07	--		1
2,2,4-Trimethylpentane	ND	0.200	--	ND	0.934	--		1
Methyl Methacrylate	ND	0.500	--	ND	2.05	--		1
Heptane	ND	0.200	--	ND	0.820	--		1
cis-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.200	--	ND	0.908	--		1
1,1,2-Trichloroethane	ND	0.200	--	ND	1.09	--		1
Toluene	ND	0.200	--	ND	0.754	--		1
1,3-Dichloropropane	ND	0.200	--	ND	0.924	--		1
2-Hexanone	ND	0.200	--	ND	0.820	--		1
Dibromochloromethane	ND	0.200	--	ND	1.70	--		1
1,2-Dibromoethane	ND	0.200	--	ND	1.54	--		1
Butyl acetate	ND	0.500	--	ND	2.38	--		1
Octane	ND	0.200	--	ND	0.934	--		1
Tetrachloroethene	ND	0.200	--	ND	1.36	--		1
1,1,1,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1
Chlorobenzene	ND	0.200	--	ND	0.921	--		1
Ethylbenzene	ND	0.200	--	ND	0.869	--		1
p/m-Xylene	ND	0.400	--	ND	1.74	--		1
Bromoform	ND	0.200	--	ND	2.07	--		1
Styrene	ND	0.200	--	ND	0.852	--		1
1,1,2,2-Tetrachloroethane	ND	0.200	--	ND	1.37	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1930221
Report Date: 07/23/19

Air Canister Certification Results

Lab ID: L1930221-06
Client ID: CAN 453 SHELF 10
Sample Location:

Date Collected: 06/11/19 09:00
Date Received: 07/11/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								
o-Xylene	ND	0.200	--	ND	0.869	--		1
1,2,3-Trichloropropane	ND	0.200	--	ND	1.21	--		1
Nonane	ND	0.200	--	ND	1.05	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
Bromobenzene	ND	0.200	--	ND	0.793	--		1
2-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
n-Propylbenzene	ND	0.200	--	ND	0.983	--		1
4-Chlorotoluene	ND	0.200	--	ND	1.04	--		1
4-Ethyltoluene	ND	0.200	--	ND	0.983	--		1
1,3,5-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
tert-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trimethylbenzene	ND	0.200	--	ND	0.983	--		1
Decane	ND	0.200	--	ND	1.16	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
1,4-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.200	--	ND	1.20	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2-Dibromo-3-chloropropane	ND	0.200	--	ND	1.93	--		1
Undecane	ND	0.200	--	ND	1.28	--		1
Dodecane	ND	0.200	--	ND	1.39	--		1
1,2,4-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Naphthalene	ND	0.200	--	ND	1.05	--		1
1,2,3-Trichlorobenzene	ND	0.200	--	ND	1.48	--		1
Hexachlorobutadiene	ND	0.200	--	ND	2.13	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1930221
Report Date: 07/23/19

Air Canister Certification Results

Lab ID: L1930221-06
Client ID: CAN 453 SHELF 10
Sample Location:

Date Collected: 06/11/19 09:00
Date Received: 07/11/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air - Mansfield Lab								

	Results	Qualifier	Units	RDL	Dilution Factor
Tentatively Identified Compounds					

No Tentatively Identified Compounds

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-Difluorobenzene	99		60-140
Bromochloromethane	99		60-140
chlorobenzene-d5	101		60-140

Project Name: BATCH CANISTER CERTIFICATION **Lab Number:** L1930221

Project Number: CANISTER QC BAT **Report Date:** 07/23/19

Air Canister Certification Results

Lab ID: L1930221-06
Client ID: CAN 453 SHELF 10
Sample Location:

Date Collected: 06/11/19 09:00
Date Received: 07/11/19
Field Prep: Not Specified

Sample Depth:
Matrix: Air
Anaytical Method: 48,TO-15-SIM
Analytical Date: 07/11/19 21:44
Analyst: TS

	ppbV			ug/m3				
Parameter	**Results**	**RL**	**MDL**	**Results**	**RL**	**MDL**	**Qualifier**	**Dilution Factor**
Volatile Organics in Air by SIM - Mansfield Lab								
Dichlorodifluoromethane	ND	0.200	--	ND	0.989	--		1
Chloromethane	ND	0.200	--	ND	0.413	--		1
Freon-114	ND	0.050	--	ND	0.349	--		1
Vinyl chloride	ND	0.020	--	ND	0.051	--		1
1,3-Butadiene	ND	0.020	--	ND	0.044	--		1
Bromomethane	ND	0.020	--	ND	0.078	--		1
Chloroethane	ND	0.100	--	ND	0.264	--		1
Acetone	ND	1.00	--	ND	2.38	--		1
Trichlorofluoromethane	ND	0.050	--	ND	0.281	--		1
Acrylonitrile	ND	0.500	--	ND	1.09	--		1
1,1-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Methylene chloride	ND	0.500	--	ND	1.74	--		1
Freon-113	ND	0.050	--	ND	0.383	--		1
trans-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
1,1-Dichloroethane	ND	0.020	--	ND	0.081	--		1
Methyl tert butyl ether	ND	0.200	--	ND	0.721	--		1
2-Butanone	ND	0.500	--	ND	1.47	--		1
cis-1,2-Dichloroethene	ND	0.020	--	ND	0.079	--		1
Chloroform	ND	0.020	--	ND	0.098	--		1
1,2-Dichloroethane	ND	0.020	--	ND	0.081	--		1
1,1,1-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Benzene	ND	0.100	--	ND	0.319	--		1
Carbon tetrachloride	ND	0.020	--	ND	0.126	--		1
1,2-Dichloropropane	ND	0.020	--	ND	0.092	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1930221
Report Date: 07/23/19

Air Canister Certification Results

Lab ID: L1930221-06
Client ID: CAN 453 SHELF 10
Sample Location:

Date Collected: 06/11/19 09:00
Date Received: 07/11/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
Bromodichloromethane	ND	0.020	--	ND	0.134	--		1
1,4-Dioxane	ND	0.100	--	ND	0.360	--		1
Trichloroethene	ND	0.020	--	ND	0.107	--		1
cis-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
4-Methyl-2-pentanone	ND	0.500	--	ND	2.05	--		1
trans-1,3-Dichloropropene	ND	0.020	--	ND	0.091	--		1
1,1,2-Trichloroethane	ND	0.020	--	ND	0.109	--		1
Toluene	ND	0.050	--	ND	0.188	--		1
Dibromochloromethane	ND	0.020	--	ND	0.170	--		1
1,2-Dibromoethane	ND	0.020	--	ND	0.154	--		1
Tetrachloroethene	ND	0.020	--	ND	0.136	--		1
1,1,1,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
Chlorobenzene	ND	0.100	--	ND	0.461	--		1
Ethylbenzene	ND	0.020	--	ND	0.087	--		1
p/m-Xylene	ND	0.040	--	ND	0.174	--		1
Bromoform	ND	0.020	--	ND	0.207	--		1
Styrene	ND	0.020	--	ND	0.085	--		1
1,1,2,2-Tetrachloroethane	ND	0.020	--	ND	0.137	--		1
o-Xylene	ND	0.020	--	ND	0.087	--		1
Isopropylbenzene	ND	0.200	--	ND	0.983	--		1
4-Ethyltoluene	ND	0.020	--	ND	0.098	--		1
1,3,5-Trimethybenzene	ND	0.020	--	ND	0.098	--		1
1,2,4-Trimethylbenzene	ND	0.020	--	ND	0.098	--		1
Benzyl chloride	ND	0.200	--	ND	1.04	--		1
1,3-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
1,4-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
sec-Butylbenzene	ND	0.200	--	ND	1.10	--		1

Project Name: BATCH CANISTER CERTIFICATION
Project Number: CANISTER QC BAT
Lab Number: L1930221
Report Date: 07/23/19

Air Canister Certification Results

Lab ID: L1930221-06
Client ID: CAN 453 SHELF 10
Sample Location:

Date Collected: 06/11/19 09:00
Date Received: 07/11/19
Field Prep: Not Specified

Sample Depth:

Parameter	ppbV Results	ppbV RL	ppbV MDL	ug/m3 Results	ug/m3 RL	ug/m3 MDL	Qualifier	Dilution Factor
Volatile Organics in Air by SIM - Mansfield Lab								
p-Isopropyltoluene	ND	0.200	--	ND	1.10	--		1
1,2-Dichlorobenzene	ND	0.020	--	ND	0.120	--		1
n-Butylbenzene	ND	0.200	--	ND	1.10	--		1
1,2,4-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Naphthalene	ND	0.050	--	ND	0.262	--		1
1,2,3-Trichlorobenzene	ND	0.050	--	ND	0.371	--		1
Hexachlorobutadiene	ND	0.050	--	ND	0.533	--		1

Internal Standard	% Recovery	Qualifier	Acceptance Criteria
1,4-difluorobenzene	98		60-140
bromochloromethane	99		60-140
chlorobenzene-d5	102		60-140

Project Name: 450 JOHNSON AVE.
Project Number: 170588001

Lab Number: L1932180
Report Date: 07/23/19

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
NA	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L1932180-01A	Canister - 6 Liter	NA	NA			Y	Absent		TO15-LL(30)
L1932180-02A	Canister - 6 Liter	NA	NA			Y	Absent		TO15-LL(30)
L1932180-03A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30),TO15-SIM(30)
L1932180-04A	Canister - 2.7 Liter	NA	NA			Y	Absent		TO15-LL(30),TO15-SIM(30)

*Values in parentheses indicate holding time in days

Project Name:	450 JOHNSON AVE.	**Lab Number:**	L1932180
Project Number:	170588001	**Report Date:**	07/23/19

GLOSSARY

Acronyms

DL - Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the limit of quantitation (LOQ). The DL includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

EDL - Estimated Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The EDL includes any adjustments from dilutions, concentrations or moisture content, where applicable. The use of EDLs is specific to the analysis of PAHs using Solid-Phase Microextraction (SPME).

EMPC - Estimated Maximum Possible Concentration: The concentration that results from the signal present at the retention time of an analyte when the ions meet all of the identification criteria except the ion abundance ratio criteria. An EMPC is a worst-case estimate of the concentration.

EPA - Environmental Protection Agency.

LCS - Laboratory Control Sample: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LCSD - Laboratory Control Sample Duplicate: Refer to LCS.

LFB - Laboratory Fortified Blank: A sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes or a material containing known and verified amounts of analytes.

LOD - Limit of Detection: This value represents the level to which a target analyte can reliably be detected for a specific analyte in a specific matrix by a specific method. The LOD includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

LOQ - Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

Limit of Quantitation: The value at which an instrument can accurately measure an analyte at a specific concentration. The LOQ includes any adjustments from dilutions, concentrations or moisture content, where applicable. (DoD report formats only.)

MDL - Method Detection Limit: This value represents the level to which target analyte concentrations are reported as estimated values, when those target analyte concentrations are quantified below the reporting limit (RL). The MDL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

MS - Matrix Spike Sample: A sample prepared by adding a known mass of target analyte to a specified amount of matrix sample for which an independent estimate of target analyte concentration is available. For Method 332.0, the spike recovery is calculated using the native concentration, including estimated values.

MSD - Matrix Spike Sample Duplicate: Refer to MS.

NA - Not Applicable.

NC - Not Calculated: Term is utilized when one or more of the results utilized in the calculation are non-detect at the parameter's reporting unit.

NDPA/DPA - N-Nitrosodiphenylamine/Diphenylamine.

NI - Not Ignitable.

NP - Non-Plastic: Term is utilized for the analysis of Atterberg Limits in soil.

RL - Reporting Limit: The value at which an instrument can accurately measure an analyte at a specific concentration. The RL includes any adjustments from dilutions, concentrations or moisture content, where applicable.

RPD - Relative Percent Difference: The results from matrix and/or matrix spike duplicates are primarily designed to assess the precision of analytical results in a given matrix and are expressed as relative percent difference (RPD). Values which are less than five times the reporting limit for any individual parameter are evaluated by utilizing the absolute difference between the values; although the RPD value will be provided in the report.

SRM - Standard Reference Material: A reference sample of a known or certified value that is of the same or similar matrix as the associated field samples.

STLP - Semi-dynamic Tank Leaching Procedure per EPA Method 1315.

TEF - Toxic Equivalency Factors: The values assigned to each dioxin and furan to evaluate their toxicity relative to 2,3,7,8-TCDD.

TEQ - Toxic Equivalent: The measure of a sample's toxicity derived by multiplying each dioxin and furan by its corresponding TEF and then summing the resulting values.

TIC - Tentatively Identified Compound: A compound that has been identified to be present and is not part of the target compound list (TCL) for the method and/or program. All TICs are qualitatively identified and reported as estimated concentrations.

Footnotes

Report Format: Data Usability Report

Project Name:	450 JOHNSON AVE.	**Lab Number:**	L1932180
Project Number:	170588001	**Report Date:**	07/23/19

1 - The reference for this analyte should be considered modified since this analyte is absent from the target analyte list of the original method.

Terms

Analytical Method: Both the document from which the method originates and the analytical reference method. (Example: EPA 8260B is shown as 1,8260B.) The codes for the reference method documents are provided in the References section of the Addendum.

Difference: With respect to Total Oxidizable Precursor (TOP) Assay analysis, the difference is defined as the Post-Treatment value minus the Pre-Treatment value.

Final pH: As it pertains to Sample Receipt & Container Information section of the report, Final pH reflects pH of container determined after adjustment at the laboratory, if applicable. If no adjustment required, value reflects Initial pH.

Frozen Date/Time: With respect to Volatile Organics in soil, Frozen Date/Time reflects the date/time at which associated Reagent Water-preserved vials were initially frozen. Note: If frozen date/time is beyond 48 hours from sample collection, value will be reflected in 'bold'.

Initial pH: As it pertains to Sample Receipt & Container Information section of the report, Initial pH reflects pH of container determined upon receipt, if applicable.

PFAS Total: With respect to PFAS analyses, the 'PFAS, Total (5)' result is defined as the summation of results for: PFHpA, PFHxS, PFOA, PFNA and PFOS. If a 'Total' result is requested, the results of its individual components will also be reported.

Total: With respect to Organic analyses, a 'Total' result is defined as the summation of results for individual isomers or Aroclors. If a 'Total' result is requested, the results of its individual components will also be reported. This is applicable to 'Total' results for methods 8260, 8081 and 8082.

Data Qualifiers

A - Spectra identified as "Aldol Condensation Product".

B - The analyte was detected above the reporting limit in the associated method blank. Flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For MCP-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank. For DOD-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte at less than ten times (10x) the concentration found in the blank AND the analyte was detected above one-half the reporting limit (or above the reporting limit for common lab contaminants) in the associated method blank. For NJ-Air-related projects, flag only applies to associated field samples that have detectable concentrations of the analyte above the reporting limit. For NJ-related projects (excluding Air), flag only applies to associated field samples that have detectable concentrations of the analyte, which was detected above the reporting limit in the associated method blank or above five times the reporting limit for common lab contaminants (Phthalates, Acetone, Methylene Chloride, 2-Butanone).

C - Co-elution: The target analyte co-elutes with a known lab standard (i.e. surrogate, internal standards, etc.) for co-extracted analyses.

D - Concentration of analyte was quantified from diluted analysis. Flag only applies to field samples that have detectable concentrations of the analyte.

E - Concentration of analyte exceeds the range of the calibration curve and/or linear range of the instrument.

G - The concentration may be biased high due to matrix interferences (i.e, co-elution) with non-target compound(s). The result should be considered estimated.

H - The analysis of pH was performed beyond the regulatory-required holding time of 15 minutes from the time of sample collection.

I - The lower value for the two columns has been reported due to obvious interference.

J - Estimated value. This represents an estimated concentration for Tentatively Identified Compounds (TICs).

M - Reporting Limit (RL) exceeds the MCP CAM Reporting Limit for this analyte.

ND - Not detected at the reporting limit (RL) for the sample.

NJ - Presumptive evidence of compound. This represents an estimated concentration for Tentatively Identified Compounds (TICs), where the identification is based on a mass spectral library search.

P - The RPD between the results for the two columns exceeds the method-specified criteria.

Q - The quality control sample exceeds the associated acceptance criteria. For DOD-related projects, LCS and/or Continuing Calibration Standard exceedences are also qualified on all associated sample results. Note: This flag is not applicable for matrix spike recoveries when the sample concentration is greater than 4x the spike added or for batch duplicate RPD when the sample concentrations are less than 5x the RL. (Metals only.)

R - Analytical results are from sample re-analysis.

RE - Analytical results are from sample re-extraction.

S - Analytical results are from modified screening analysis.

Report Format: Data Usability Report

REFERENCES

48 Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air. Second Edition. EPA/625/R-96/010b, January 1999.

LIMITATION OF LIABILITIES

Alpha Analytical performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical be held liable for any incidental, consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding time and splitting of samples in the field.

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

Westborough Facility
EPA 624/624.1: m/p-xylene, o-xylene
EPA 8260C: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene, Azobenzene; SCM: Iodomethane (methyl iodide), Methyl methacrylate, 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270D: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.

EPA 6860: SCM: Perchlorate

SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

Mansfield Facility
SM 2540D: TSS
EPA 8082A: NPW: PCB: 1, 5, 31, 87,101, 110, 141, 151, 153, 180, 183, 187.
EPA TO-15: Halothane, 2,4,4-Trimethyl-2-pentene, 2,4,4-Trimethyl-1-pentene, Thiophene, 2-Methylthiophene, 3-Methylthiophene, 2-Ethylthiophene, 1,2,3-Trimethylbenzene, Indan, Indene, 1,2,4,5-Tetramethylbenzene, Benzothiophene, 1-Methylnaphthalene.
Biological Tissue Matrix: EPA 3050B

The following analytes are included in our Massachusetts DEP Scope of Accreditation

Westborough Facility:

Drinking Water
EPA 300.0: Chloride, Nitrate-N, Fluoride, Sulfate; **EPA 353.2**: Nitrate-N, Nitrite-N; **SM4500NO3-F**: Nitrate-N, Nitrite-N; **SM4500F-C, SM4500CN-CE, EPA 180.1, SM2130B, SM4500Cl-D, SM2320B, SM2540C, SM4500H-B**
EPA 332: Perchlorate; **EPA 524.2:** THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,SM9222D**.

Non-Potable Water
SM4500H,B, EPA 120.1, SM2510B, SM2540C, SM2320B, SM4500CL-E, SM4500F-BC, SM4500NH3-BH: Ammonia-N and Kjeldahl-N, **EPA 350.1**: Ammonia-N, **LACHAT 10-107-06-1-B**: Ammonia-N, **EPA 351.1, SM4500NO3-F, EPA 353.2**: Nitrate-N**, SM4500P-E, SM4500P-B, E, SM4500SO4-E, SM5220D, EPA 410.4, SM5210B, SM5310C, SM4500CL-D, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
EPA 624.1: Volatile Halocarbons & Aromatics,
EPA 608.3: Chlordane, Toxaphene, Aldrin, alpha-BHC, beta-BHC, gamma-BHC, delta-BHC, Dieldrin, DDD, DDE, DDT, Endosulfan I, Endosulfan II, Endosulfan sulfate, Endrin, Endrin Aldehyde, Heptachlor, Heptachlor Epoxide, PCBs
EPA 625.1: SVOC (Acid/Base/Neutral Extractables), **EPA 600/4-81-045**: PCB-Oil.
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT, SM9221E, EPA 1600, EPA 1603.**

Mansfield Facility:

Drinking Water
EPA 200.7: Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Na, Ag, Ca, Zn. **EPA 200.8:** Al, Sb, As, Ba, Be, Cd, Cr, Cu, Pb, Mn, Ni, Se, Ag, TL, Zn. **EPA 245.1** Hg.
EPA 522.

Non-Potable Water
EPA 200.7: Al, Sb, As, Be, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Ni, K, Se, Ag, Na, Sr, TL, Ti, V, Zn.
EPA 200.8: Al, Sb, As, Be, Cd, Cr, Cu, Fe, Pb, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1 Hg.
SM2340B

For a complete listing of analytes and methods, please contact your Alpha Project Manager.

AIR ANALYSIS

PAGE 3 OF 3

CHAIN OF CUSTODY

ALPHA ANALYTICAL
320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab: 7-20-19

ALPHA Job #: L1932180

Client Information

Client: Langan
Address: 360 W 31st Street
New York, New York
Phone: 212 479 5400
Fax: 212 479 2727
Email: jleung@langan.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: 450 Johnson Ave
Project Location: Brooklyn NY
Project #: 170588081
Project Manager: Julia Leung
ALPHA Quote #:

Turn-Around Time

☐ Standard ☒ RUSH (only confirmed if pre-approved)
Date Due: 24-48 hrs Time:

Report Information - Data Deliverables

☐ FAX
☐ ADEx
Criteria Checker:
(Default based on Regulatory Criteria Indicated)
Other Formats:
☒ EMAIL (standard pdf report)
☐ Additional Deliverables:
Report to: (if different than Project Manager)

Billing Information

☐ Same as Client info PO #:

concur

Regulatory Requirements/Report Limits

State/Fed	Program	Res / Comm

Other Project Specific Requirements/Comments:

Project-Specific Target Compound List: ☐

ANALYSIS

All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	COLLECTION End Date	Start Time	End Time	Initial Vacuum	Final Vacuum	Sample Matrix*	Sampler's Initials	Can Size	I D Can	I D - Flow Controller	TO-15	TO-15 SIM	APH (Solvent Non-petroleum HCs)	Fixed Gases	Sulfides & Mercaptans by TO-15	☐	Sample Comments (i.e. PID)
32180-01	SSV02_071919	7/19/19	0756	1508	-29.93	-9.49	SSSV	DL	2.7	230	0492	X						
02	SSV03_071919	7/19/19	0743	1305	-29.91	-3.85	SSSV	PL	27	2824	1248	X						
03	IA02_071919	7/19/19	0757	1504	-30.03	-7.68	IA	DL	27	2872	0813	X						
04	IA03_071919	7/19/19	0744	1450	-30.46	-8.75	IA	DL	27	2825	0432	X						

*SAMPLE MATRIX CODES

AA = Ambient Air (Indoor/Outdoor)
SV = Soil Vapor/Landfill Gas/SVE
Other = Please Specify

Container Type

Relinquished By:	Date/Time	Received By:	Date/Time:
Langan	7/19/19 1530	Ronnell Jackson AAL	7/19 1530
	7/19 1937		7/19/19 2300
	7/20/19 0530	AAL	7-20-19 0530

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions. See reverse side.

September 28, 2022

Brett Richer
Prologis, Inc.
Director, Global Environmental and Engineering
Pier 1, Bay 1
San Francisco, CA 94111

Re: Supplemental Site Investigation Report
450 Johnson Avenue
Brooklyn, New York
Langan Project No. 170588003

Dear Mr. Richer:

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C. (Langan) conducted a supplemental site investigation on behalf of Prologis, Inc. for the property located at 450 Johnson Avenue in Brooklyn, New York (the site). The purpose of the investigation was to evaluate soil, groundwater, and soil vapor quality at the site, fill data gaps from previous site investigations, and generate data that may be used to apply the site to the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP). This letter report describes the site background, investigation methodologies, investigation results, and conclusions.

SITE BACKGROUND

Site Location

The site is about 35,000 square feet (about 0.8 acres) in area, located in the East Williamsburg neighborhood of Brooklyn, New York and identified as Block 2992, Lots 17, 21, and 55 on the Brooklyn Borough Tax Map. The site is developed with three inter-connected buildings and a parking lot:

Lot 17: A two-story, 2,500-square-foot warehouse and office building and one-story, 7,500-square-foot warehouse

Lot 21: A one-story, 20,000-square-foot warehouse

Lot 55: A 5,000-square-foot asphalt-paved parking lot

The site was vacant at the time of the investigation.

The site is bound to the north by Johnson Avenue followed by industrial properties and the southernmost branch of Newton Creek; to the east by commercial and industrial buildings; to the south by Ingraham Street followed by commercial and industrial buildings; and to the west by commercial and industrial buildings. According to the USGS Topographic Quadrangle, Brooklyn, New York, the site elevation is about elevation 10±. A site location map is included as Figure 1.

Site History

The August 23, 2019 Phase I Environmental Site Assessment, prepared by Langan, identified the following Recognized Environmental Conditions (REC) and Business Environmental Risks (BER):

- REC 1 – Current and Historical Site Use
    - Historical records indicate the Site has been utilized for a variety of industrial operations between 1907 and the present, including as a lumber yard (1907-1951), an auto garage (1928-1934), a metal working facility (1933), a paper box manufacturing facility (1951), and an envelope manufacturing facility (1992-2022).
- REC 2 – Current and Historical Operations of Surrounding Properties
    - The area surrounding the Site has been used for industrial purposes since at least 1888 through the present. One off-site and adjoining (upgradient) property, Ingraham Street Sidewalk GW (New York State Hazardous Waste Site [SHWS] ID No. 224142) is listed in the New York State VCP database.
- BER 1 – Historic Fill
- BER 2 – Asbestos Containing Material (ACM) and Lead Based Paint (LBP)

The September 24, 2019 Phase II Environmental Site Assessment, prepared by Langan, identified the following:

- Semivolatile organic compound (SVOC) and metals impacts in soil above the New York State Department of Environmental Conservation (NYSDEC) Part 375 Restricted Use (RU) Industrial Soil Cleanup Objectives (SCO)
- Volatile organic compounds (VOC), SVOCs, and metals above the NYSDEC Technical Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values for Class GA Water (herein collectively referred to as "NYSDEC SGVs"), and
- VOCs in sub-slab soil vapor and soil vapor.

CVOCs have also been documented to be present (as part of separate investigations performed by others) in groundwater in the Ingraham Street Sidewalk project, which adjoins the site to the south. Ingraham Street Sidewalk GW (case ID No. 224142) is listed in the New York State Voluntary Cleanup Program (VCP) database.

FIELD INVESTIGATION

The supplemental site investigation was conducted on July 28, 29, and August 1, 2022 and consisted of the advancement of 9 soil borings to depths of 8 to 30 feet below grade surface (bgs); installation of 2 monitoring wells to 19 feet bgs, one soil vapor sampling points 13 feet bgs and one sub-slab soil vapor sampling point; and collection of 19 soil samples, 2 groundwater samples, 2 soil vapor samples, and quality assurance/quality control (QA/QC) samples. A sample summary table is included as Table 1. Boring, monitoring well and soil vapor locations are shown on Figure 2.

Soil Investigation and Sampling

AARCO Environmental Services Corp. of Lindenhurst, New York (AARCO) advanced nine soil borings using a Geoprobe 54LT direct-push drill rig. AARCO advanced 1 soil boring (SB22) to 8 feet bgs (refusal), 2 soil borings (SB18 and SB19) to 16 feet bgs, 4 soil borings (SB23-SB26) to 20 feet bgs, 1 soil boring (SB21) to 25 feet bgs, and 1 soil boring (SB20) to 30 feet bgs. Langan field personnel documented drilling activities, recorded physical soil characteristics, and collected soil samples. Soil samples were inspected for visual and olfactory evidence of impacts and screened for organic vapors with a photoionization detector (PID). One to three grab soil samples were collected from each boring, from the fill interval and/or the interval exhibiting the highest PID readings and visual and olfactory indications of impacts. Soil boring logs are provided as Attachment 1.

Twenty (20) soil samples, including one duplicate sample, were collected into laboratory-supplied glassware, labeled, placed in a laboratory-supplied cooler, packed on ice (to attempt to maintain a temperature of 4±2°C) and delivered in-person (July 27 and 28) or via courier service (August 1) to Alpha Analytical, Inc. (Alpha) under standard chain-of-custody protocol. Alpha is an NYSDOH Environmental Laboratory Approval Program (ELAP)-certified laboratory located in Westborough, Massachusetts (ELAP No. 11148). Soil samples were analyzed for NYSDEC Title 6 of the Official Compilation of New York Codes, Rules, and Regulations (NYCRR) Part 375 List and Target Compound List (TCL) VOCs, SVOCs, and metals. Additionally, one soil sample was analyzed for Toxicity Characteristic Leaching Procedure (TCLP) lead after initial metals results showed high concentrations of lead in soil.

Groundwater Investigation and Sampling

Groundwater was observed between 9.9 to 15.2 feet bgs. Soil borings SB20 and SB21 were converted into temporary monitoring wells TMW09 (which corresponds to SB21) and TMW10 (which corresponds to SB20) on July 28 and July 29, 2022, respectively, by inserting 10 feet of 0.02-inch slotted, 1-inch diameter, Schedule 40 polyvinyl chloride (PVC) screen to about 19 feet bgs. The annulus of both boreholes were backfilled with clean No. 2 filter sand to 8 feet bgs and sealed from 6 to 8 feet bgs with hydrated bentonite chips, then backfilled to grade with No. 2 sand.

On August 1, 2022, prior to sampling, the headspace of each well was monitored with a PID and the wells were gauged with an interface probe to determine depth to groundwater and the

potential presence of free product. In general accordance with United States Environmental Protection Agency (USEPA) Low-Flow procedures, at least 3 well volumes were purged from the wells using a peristaltic pump and dedicated polyethylene tubing. During purging, a multi-parameter water quality instrument was used to record groundwater quality parameters (i.e., pH, temperature, oxidation-reduction potential [ORP], conductivity, turbidity, and dissolved oxygen) at 5-minute intervals. TMW10 was purged dry prior to water quality indicators stabilizing. The well was allowed to recharge before sampling. Groundwater samples were collected into laboratory-supplied containers, placed in ice-chilled coolers, and delivered via courier to Alpha under standard chain-of-custody protocol for analysis. Two groundwater samples were analyzed for VOCs.

Groundwater monitoring construction logs are provided as Attachment 2 and groundwater sampling logs are provided as Attachment 3.

Soil Vapor Sampling

One sub-slab soil vapor point (SSV04) and one soil vapor point (SV01) were installed. The sub-slab soil vapor point was installed approximately 4 inches below the slab (at about 1 foot bgs) and the soil vapor point was installed at least two feet above the observed groundwater interface, corresponding to a depth of about 13 feet bgs. A two-inch-long polyethylene probe was inserted into each borehole and attached to dedicated polyethylene tubing that extended to the surface. For the soil vapor point, the annulus around the probe and tubing was filled with clean sand to about two feet above the soil vapor point, sealed with about 1 foot of hydrated bentonite, backfilled with No. 2 sand to 1 foot bgs, and a hydrated bentonite seal was placed on top of the sand up to the surface. For the sub-slab soil vapor point, the annulus around the probe and tubing was filled with clean sand to about six inches above the soil vapor point and a hydrated bentonite seal was placed on top of the sand up to the surface.

Each soil vapor point was purged using a MiniRAE 3000 PID to evacuate a minimum of three sample volumes (tubing plus vapor point) prior to sample collection. Soil vapor samples were collected into laboratory-supplied, batch-certified, 6-liter Summa® canisters. The sub-slab soil vapor point used a flow controller that was calibrated for an 8-hour sampling period, and the soil vapor point used a flow controller that was calibrated for a 2-hour sampling period. Soil vapor point construction and sampling logs are provided as Attachment 4.

After the 8-hour sampling period for SSV04 and 2-hour sampling period for SV01 had elapsed, the canisters were labeled and transported via courier to Alpha under a chain-of-custody to be analyzed for VOCs via USEPA Method TO-15.

OBSERVATIONS AND RESULTS

Subsurface Observations

The site is underlain by fill, predominantly consisting of brown to dark brown silty fine to medium sand with varying amounts of coal, fine red gravel, glass, metal, and wood. The fill was observed

from surface grade to about 15 to 17 feet bgs (fill was present at the terminus of certain soil borings). Light brown fine to medium-grained sand with varying amounts of clay and gravel was observed below the fill to the boring terminus. Bedrock was not encountered during the investigation; however, based on Langan's experience in the surrounding area, bedrock is expected to be present over 200 feet bgs.

Groundwater was observed at about 9.9 to 15.2 feet bgs. Evidence of impacts (e.g., odors and/or PID readings up to 36.7 parts per million [ppm]) were observed at about 13 to 17 feet bgs in soil boring SB26. The inferred regional groundwater flow direction for the site is to the north, towards Newton Creek.

Soil Analytical Results

VOCs, SVOCs, and metals were detected in soil samples at concentrations above NYSDEC Part 375 Protection of Groundwater (PGW) SCOs and SVOCs and metals were also detected at concentrations exceeding NYSDEC Part 375 RU commercial and/or industrial use SCOs. TCLP lead was detected in SB23 at a concentration exceeding the RCRA Characteristic of Hazardous Waste limit. Soil sample analytical results exceeding applicable regulatory criteria are shown on Figure 3. Soil sample analytical results are provided in Table 2.

Groundwater Analytical Results

Three VOCs, specifically chlorinated VOCs (CVOCs), were detected at concentrations exceeding NYSDEC SGVs. Groundwater sample analytical results exceeding applicable regulatory criteria are shown on Figure 4. Groundwater sample analytical results are provided in Table 3.

Soil Vapor Analytical Results

Petroleum VOCs and CVOCs were detected in both soil vapor samples. Although not a standard for direct comparison, tetrachloroethene (PCE) and trichloroethene (TCE) were detected at SSV04 above the minimum soil vapor concentration at which soil vapor mitigation is recommended in the Decision Matrices A, B and C (updated May 2017) as referenced in the October 2006 New York State Department of Health (NYSDOH) Guidance for Evaluating Soil Vapor Intrusion in the State of New York, with updates. Total VOCs ranged from 357.2 micrograms per cubic meter ($\mu g/m^3$) in SV01 to 6,975 $\mu g/m^3$ in SSV04. Soil vapor analytical results are provided on Table 4 and shown on Figure 5.

The laboratory analytical reports for soil, groundwater, and soil vapor are provided as Attachment 5.

CONCLUSIONS

Based on review of the supplemental site investigation results, we conclude the following:

- Stratigraphy: The site is underlain by fill predominantly consisting of brown to dark brown silty fine to medium sand with varying amounts of coal, fine red gravel, glass, metal, and wood. The fill was observed from surface grade to a depth of about 15 to 17 feet bgs (fill was present at the terminus of certain soil borings). Light brown fine to medium-grained

sand with varying amounts of clay and gravel was observed below the fill to the boring terminus. Bedrock was not encountered; however, based on Langan's experience in the surrounding area, bedrock is expected to be present over 200 feet bgs.

- Hydrogeology: Groundwater was observed at 9.9 to 15.2 feet bgs. Regional groundwater flow is estimated to the north toward Newton Creek.
- Petroleum Impacts:
    - Petroleum-like impacts (odors, staining, and/or PID readings above background) were observed in soil boring SB26. Petroleum-related compounds were not detected in soil at levels exceeding the PGW or the RU commercial and/or industrial SCOs at this location.
- Soil Analytical Results:
    - VOCs, SVOCs, and metals were detected at concentrations exceeding PGW SCOs, and SVOCs and metals were detected at concentrations exceeding RU commercial and/or industrial SCOs.
    - TCLP lead was detected in SB23 at a concentration exceeding the RCRA Characteristic of Hazardous Waste limit.
    - PCE was detected at a concentration exceeding the PGW SCO in shallow soil at SB23.
- Groundwater Analytical Results:
    - Three CVOCs, PCE, cis 1,2 DCE, and vinyl chloride, were detected at concentrations exceeding the NYSDEC SGVs.
- Sub-Slab Vapor Analytical Results:
    - Two VOCs, PCE and TCE, were detected in the soil vapor sample SSV04 at concentrations above the NYSDOH Decision Matrix A thresholds that trigger a recommendation of "mitigate".
    - Total VOC concentrations were detected in soil vapor at a maximum of 6,975 µg/m^3 in SSV04.

These data demonstrate contamination at the site at concentrations above applicable regulatory criteria for the anticipated future use of the site (i.e., restricted commercial or industrial use).

Sincerely,

Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.

DRAFT

Paul McMahon, P.E.
Senior Project Manager

DRAFT

Mimi S. Raygorodetsky
Principal/Vice President

Enclosure(s):
Figure 1 – Site Location Map
Figure 2 – Sample Location Map
Figure 3 – Soil Sample Location and Analytical Results Map
Figure 4 – Groundwater Sample Location and Analytical Results Map
Figure 5 – Soil Vapor Sample Location and Analytical Results Map

Table 1 – Sample Summary Table
Table 2 – Soil Sample Analytical Results
Table 3 – Groundwater Sample Analytical Results
Table 4 – Soil Vapor and Sub-Slab Vapor Sample Analytical Results

Attachment 1 – Soil Boring Logs
Attachment 2 – Monitoring Well Construction Logs
Attachment 3 – Groundwater Sampling Logs
Attachment 4 – Soil Vapor Sampling Logs
Attachment 5 – Laboratory Analytical Data Reports

NYC Environmental Protection

Rohit T. Aggarwala
Commissioner

Anastasios Georgelis, P.E.
Deputy Commissioner
Bureau of Water &
Sewer Operations
TasosG@dep.nyc.gov

59-17 Junction Boulevard
Flushing, NY 11373
T: (718) 595-55330
F: (718)595-5342

March 18, 2023

Daniel LoFrisco, P.E.
Kimley-Horn of New York, P.C.
60 East 42 Street, Suite 1215
New York, NY 10165

Re: Johnson Avenue
Block # 2992 Lots # 21, 17 & 55
Borough of Brooklyn
DFO: 23-104
FIK – 23-044

Dear Mr. LoFrisco,

This office is in receipt of your correspondence requesting an engineering field investigation to confirm the existence, location and determine the condition of the combined sewer traversing the above referenced location.

The Survey Investigation Unit conducted an investigation pertaining to this location. It was confirmed that there is an existing 90" diameter active combined sewer traversing the above subject location as indicated in the enclosed sketch. This sewer was found to be in good running condition at the time of this investigation.

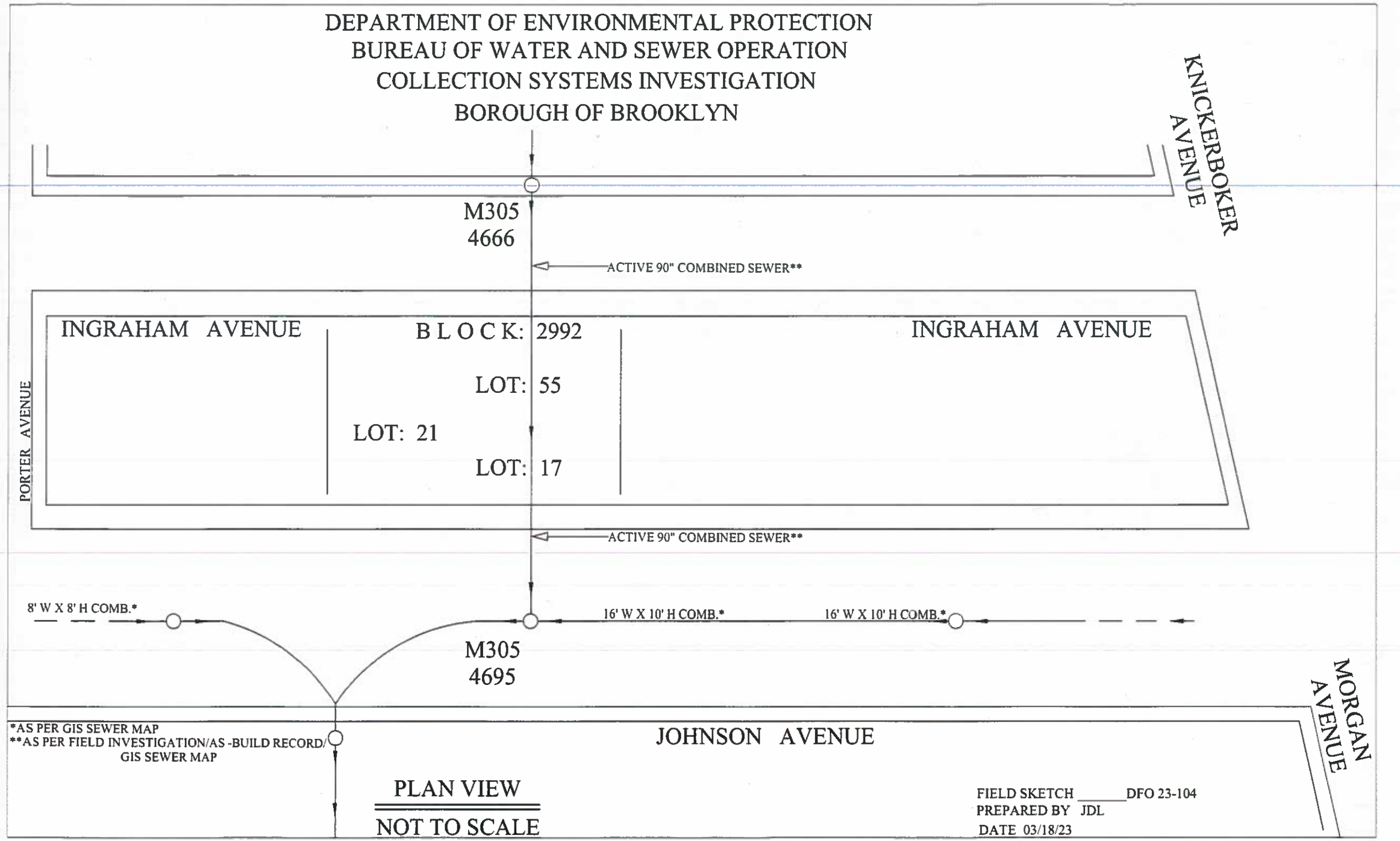
Enclosed is a sketch showing the existing sewers in the surrounding area.

Very truly yours,

Terrance Brock, P.E. Unit Chief
Collection Systems Investigation

c: Brock/Barraza/Lucien/Brooklyn Local Office

DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATER AND SEWER OPERATION
COLLECTION SYSTEMS INVESTIGATION
BOROUGH OF BROOKLYN



*AS PER GIS SEWER MAP
**AS PER FIELD INVESTIGATION/AS -BUILD RECORD/ GIS SEWER MAP

PLAN VIEW

NOT TO SCALE

FIELD SKETCH _____DFO 23-104
PREPARED BY JDL
DATE 03/18/23

APPENDIX B

HEALTH AND SAFETY PLAN

HEALTH AND SAFETY PLAN

for

450 JOHNSON AVENUE
BROOKLYN, NEW YORK
Kings County, Brooklyn Borough Tax Map
Block 2992, Lot 17

Prepared For:

450 Johnson Ave Brooklyn, LLC
1800 Wazee Street, Suite 500
Denver, Colorado

Prepared By:

Langan Engineering, Environmental, Surveying,
Landscape Architecture and Geology, D.P.C.
21 Penn Plaza
360 West 31st Street, 8th Floor
New York, New York 10001

LANGAN

June 2024
Langan Project Number: 170588003

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1.0 INTRODUCTION

1.1 General

This HEALTH AND SAFETY PLAN (HASP) was developed to address disturbance of known and reasonably anticipated subsurface contaminants and comply with Occupational Safety and Health Administration (OSHA) Standard 29 CFR 1910.120(b)(4), *Hazardous Waste Operations and Emergency Response* during anticipated site work for the property located at 450 Johnson Avenue in the East Williamsburg neighborhood of Brooklyn, New York (the "Site"). The Site is identified on the Brooklyn Borough Tax Map as Block 2992, Lot 17.

This HASP provides the minimum requirements for implementing site operations during future remedial measure activities. All contractors performing work on this site shall implement their own HASP that, at a minimum, adheres to this HASP. The contractor is responsible for their own health and safety and that of their subcontractors. Langan personnel will implement this HASP while onsite.

The management of the day-to-day site activities and implementation of this HASP in the field is the responsibility of the site Langan Field Team Leader (FTL). Assistance in the implementation of this HASP can also be obtained from the Langan Health and Safety Officer (HSO) and the Langan Health and Safety Manager (HSM). Contractors operating on the site shall designate their own FTL, HSO and HSM. The content of this HASP may change or undergo revision based upon additional information made available to health and safety personnel, monitoring results, or changes in the work plan.

1.2 Site Location and Background

The Site is located at 450 Johnson Avenue (Block 2992, Lot 17) in Brooklyn, New York. The Site covers an approximate 0.80-acre area and is located on the southern side of Johnson Avenue. The Site is located in an industrial and commercial section of the East Williamsburg neighborhood of Brooklyn.

The Site is developed with three buildings and a parking lot: A one-story industrial building that is approximately 7,500 square feet (ft^2) to the east and a two story office and industrial building that is approximately 2,500 $ft^2$to the west; a one-story industrial building with a partial basement that is approximately 20,000 ft^2; and an asphalt-paved parking lot that is approximately 5,000 ft^2.

The Site has been occupied by Envelope Manufactures Corp. since 1992 for the manufacturing of envelopes and is owned by JBC Land LLC. The land on which the Site is located was originally

undeveloped, forested land that was utilized for agricultural purposes around the 1600's. The Site has been developed since at least 1907 as lumber yard (1907-1951), auto garage (1928-1934), metal working (1933), paper box manufacturing (1951), repair shop (1951), and envelope manufacturing (1992-Present). The existing buildings were constructed in 1931. A site location map is included as Figure 1.

1.3 Summary of Work Tasks

1.3.1 Geophysical Investigation

Prior to the commencement of intrusive field activities (i.e., soil borings); a geophysical consultant may conduct a geophysical survey using ground penetrating radar (GPR) and electromagnetic detection equipment. Langan personnel will coordinate the geophysical survey. The objective of the survey will be to identify any underground storage tank (UST) structures, drains, underground utilities, and other subsurface anomalies that may be encountered during the investigation. During this time Langan personnel will inspect the site and confirm sample locations.

1.3.2 Hand Clearing of Borehole Locations

If there is no geophysical survey for utility clearance or the results of the geophysical survey are inconclusive at specific locations subject to intrusive work, the contractor may hand clear each location to confirm utilities or other known or suspected subsurface structures. Hand clearing of a soil boring location should extend to a depth of 5-feet and be about 1.5 times the anticipated diameter of the borehole when drilled. Langan personnel will confirm that hand clearing activities are completed to these specifications.

1.3.3 Soil Investigation and Sampling

Langan will retain a drilling contractor to advance soil borings to a depth below grade surface (bgs) specified in the work plan. Borings will be installed at the approximate locations indicated in Langan's work plan, but may be moved in the field based on utility clearance and accessibility. The drilling contractor will contact the appropriate utility mark-out authority and make available to their drilling staff the verification number and effective dates. Langan will record the verification number and effective dates from the drillers. Langan will also note the location of marked out utilities on the site plan and scan the data into the project folder.

Langan personnel will screen soil for visual, olfactory, and instrumental indicators suggestive of a potential petroleum release. Instrument screening for the presence of volatile organic compounds (VOCs) may be performed with a duly field-calibrated photoionization detector (PID)

(or equivalent). Langan personnel will collect soil samples from the proposed soil boring locations following the sampling plan outlined in the work plan. The borings will be filled with clean soil cuttings, clean sand or bentonite grout and capped at grade to match the surrounding surface after samples are collected.

Soil samples will be submitted to a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified laboratory and analyzed in accordance with work plan specifications.

1.3.4 Groundwater Investigation and Sampling

Selected soil borings will be converted into groundwater monitoring wells and sampled to evaluate groundwater quality. Groundwater samples will be collected from one or more of the new and if available, pre-existing monitoring wells in accordance with the Langan Low Flow Groundwater Sampling SOP (SOP #12). Groundwater samples will be submitted to an approved laboratory and analyzed for constituents as specified in the work plan. Temporary monitoring wells will be plugged and abandoned during the investigation in the manner defined in Section 1.3.2 for soil boring. Permanent monitoring wells will be completed with a road box set in concrete, Permanent monitoring wells will be eventually backfilled and abandoned in accordance with State and Local regulations.

Groundwater samples will be submitted to a NYSDOH ELAP-certified laboratory and analyzed in accordance with work plan specifications.

1.3.5 Groundwater/Product Gauging

Langan may gauge one or more of the observation/monitoring wells to collect synoptic head data or determine the presence of product. When gauging, Langan may also survey head space VOCs within the well using a duly calibrated PID. When collected, gauging data will be based on the northernmost point at top of casing (TOC) using an interface probe (IP) capable of determining the presence of free product in the monitoring well as light non-aqueous phase liquid (LNAPL) at the top of the water column. If gauging for dense non-aqueous phase liquid (DNAPL) at the base of the monitoring well, the IP may not be appropriate. The field engineer will coordinate with the project team to devise an alternative method to gauge the thickness of DNAPL at base of the well. Langan will decontaminate gauging equipment between wells as required by the work plan.

1.3.6 Product Bailing

Langan may remove free product from on-site monitoring wells as part of this HASP or

subsequent SMP activities. Langan will may use a bailer, peristaltic pump or submersible as determined by the work plan. Langan will record the volume of product and groundwater recovered. Recovered product and groundwater will be drummed in accordance with procedures outlined in the work plan.

1.3.7 Sub Slab or Soil Vapor Point Installation and Sampling

Langan (or its contractor) will install one or more sub-slab or soil vapor points at selected locations. If installed, the sub-slab points will be set at or just below the bottom of the slab in accordance with the work plan. The sub-slab points may be installed using an electric hammer drill to advance small diameter borings through the concrete (or equivalent) slab as defined in the work plan. The borings will terminate in and sample from the gravel substrate below the slab. Conditions in the field may require adjustment of sampling locations.

Langan personnel (or contractor) may install VaporPin® vapor points (or equivalent) in accordance with the manufacturer's instructions. If no point is used, Langan (or contractor) will set a sampling tube defined as an open ended Teflon™-lined polyethylene tubing (or equivalent tubing as approved by the project manager [PM]). The sampling tube will be set either within the base of the concrete slab or within the support gravel underlying the slab.

When using the VaporPin® or equivalent, the installation sleeve will provide the necessary annulus seal required for subsequent sampling. However, if a sampling tube as defined above is use, the annulus at the top of the concrete slab will be filled with bentonite or food grade clay to seal the slab. A sand pack is not required for sub-slab vapor sampling. Unless specified by the work plan, the sub slab points are temporary and will be pulled after the sampling event and the hole will be patched at grade with material similar to the surrounding surface.

Langan personnel will confirm that the soil vapor points (implants) are approximately 2-inches in length constructed of polyethylene material and are connected to the surface by Teflon™-line polyethylene material (equivalent materials for the point and tubing are acceptable as approved by the PM). The annulus around the implant will be filled with clean sand to 6-inches above the implant. A 1-foot bentonite slurry will be applied to the top of the sand up to seal the sampling points. The remaining soil vapor point annulus may be backfilled with clean cuttings are sand to grade. Unless specified by the work plan, the vapor points are temporary and will be pulled after the sampling event and the hole will be patched at grade with material similar to the surrounding surface.

Vapor samples will be collected in accordance with following guidance including: Final Guidance for Evaluating Soil Vapor Intrusion published by the New York State Department of Health (NYSDOH) in October 2006, Langan's Sub-Slab Vapor Sampling SOP (SOP #14) and as specified

in the work plan. In addition, ambient air and indoor air samples may be collected for use as a comparison sample. As part of the indoor air sampling program, Langan personnel may complete a building inventory inspection. The inspection may take place prior to the commencement of actual field sampling. Vapor samples may be submitted to a NYSDOH ELAP-certified laboratory and analyzed in accordance with work plan specifications or to another laboratory as specified by the client.

1.3.7 Observation/Monitoring Well Plugging and Abandonment

At an unspecified future date, the observation/monitoring wells will be abandoned. Plugging and abandonment will be in accordance with federal and state requirements. Langan may retain a drilling contractor to complete the plugging and abandonment activities. The contractor will contact the appropriate utility mark-out authority and make available to their field staff the verification number and effective dates. Langan may observe the plugging and abandonment of one or more observation/monitoring wells to document that the plugging and abandonment activities were completed in accordance with the work plan and regulations.

1.3.9 QA/QC Sampling

Samples for quality assurance/quality control [QA/QC] samples may also be collected and submitted to an approved laboratory and analyzed in accordance with work plan specifications. Information regarding the QA/QC samples including required method of analysis may be included in the same COC as the soil samples unless otherwise instructed by the work plan.

1.3.10 Equipment Decontamination

Before the start of the day's sampling and after sampling each run, sampling equipment will be decontaminated by the decontamination process outlined Attachment B - Decontamination Procedures. Decontamination wastes and purge water will be temporarily stored on site pending analytical results.

1.3.11 Management of Investigative-Derived Waste

The investigative-derived waste (IDW) generated during this investigation will be contained in DOT-approved 55-gallon drums. The drums will be temporarily stored on the site or as directed by the client representative. All drums will be filled between to two-thirds full to allow easy maneuvering during drum pickup and disposal. Drum labels are to be provided by Langan (Environmental Closet). All drums will be labeled as "IDW Pending Analysis" until sample data are reported from the laboratory. Drum labels will include date filled and locations where waste was generated along with the standard information required by the labels in accordance with the

Langan SOP09, Drum Labeling..

Closed top drums are to be used to store liquids. Debris, including plastic sheeting, polyethylene tubing, personal protection equipment (PPE), decontamination debris, etc. will be segregated from and disposed in large heavy duty garbage bags and disposed of at the site. Excess unused glassware should be returned to the lab along with the last day of collection samples.

1.3.12 Drum Sampling

Langan personnel may collect drum samples, as required, prior to off-site drum disposal. Samples will be placed into laboratory-supplied batch-certified clean glassware and submitted to an approved laboratory and analyzed in accordance with work plan specifications, if required.

1.3.13 Surveying

Surveying activities may be completed by Langan. Surveying will be conducted by licensed surveyors.

2.0 IDENTIFICATION OF KEY PERSONNEL/HEALTH AND SAFETY PERSONNEL

The following briefly describes the health and safety (H&S) designations and general responsibilities that may be employed for this site. The titles have been established to accommodate the project needs and requirements and ensure the safe conduct of site activities. The H&S personnel requirements for a given work location are based upon the proposed site activities.

2.1 Langan Project Manager

The Langan Environmental Project Manager (PM) is Paul McMahon, his responsibilities include:

- Ensuring that this HASP is developed, current, and approved prior to on-site activities.
- Ensuring that all the tasks in the project are performed in a manner consistent with Langan's comprehensive *Health and Safety Program for Hazardous Waste Operations* and this HASP.

2.2 Langan Corporate Health and Safety Manager

The Langan Corporate Health and Safety Manager (HSM) is Tony Moffa. His responsibilities include:

- Updating the *Construction Health and Safety Program for Hazardous Waste Operations*.

- Assisting the site Health and Safety Officer (HSO) with development of the HASP, updating HASP as dictated by changing conditions, jobsite inspection results, etc. and approving changes to this HASP.
- Assisting the HSO in the implementation of this HASP and conducting Jobsite Safety Inspections and assisting with communication of results and correction of shortcomings found.
- Maintaining records on personnel (medical evaluation results, training and certifications, accident investigation results, etc.).

2.3 Langan Site Health & Safety Officer

The Langan HSO is William Bohrer. His responsibilities include:

- Participating in the development and implementation of this HASP.
- When on-site, assisting the Langan Field Team Leader in conducting Tailgate Safety Meetings and Jobsite Safety Inspections and correcting any shortcomings in a timely manner.
- Ensuring that proper PPE is available, worn by employees, and properly stored and maintained.
- Controlling entry into and exit from the site contaminated areas or zones.
- Monitoring employees for signs of stress, such as heat stress, fatigue, and cold exposure.
- Monitoring site hazards and conditions.
- Knowing (and ensuring that all site personnel also know) emergency procedures, evacuation routes, and the telephone numbers of the ambulance, local hospital, poison control center, fire department, and police department.
- Resolving conflicts that may arise concerning safety requirements and working conditions.
- Reporting all incidents, injuries and near misses to the Langan Incident/Injury Hotline immediately and the client representative.

2.4 Langan Field Team Leader Responsibilities

The Langan Field Team Leader (FTL) will be determined prior to the start of the start of field activities. The Field Team Leader's responsibilities include:

- The management of the day-to-day site activities and implementation of this HASP in the field.
- Participating in and/or conducting Tailgate Safety Meetings and Jobsite Safety Inspections and correcting any shortcomings in a timely manner.
- When a Community Air Monitoring Operating Program (CAMP) is part of the scope, the

FTL will set up and maintaining community air monitoring activities and instructing the responsible contractor to implement organic vapor or dust mitigation when necessary.
- Overseeing the implementation of activities specified in the work plan.

2.5 Contractor Responsibilities

The contractor shall develop and implement their own HASP for their employees, lower-tier subcontractors, and consultants. The contractor is responsible for their own health and safety and that of their subcontractors. Contractors operating on the site shall designate their own FTL, HSO and HSM. The contractor's HASP will be at least as stringent as this Langan HASP. The contractor must be familiar with and abide by the requirements outlined in their own HASP. A contractor may elect to adopt Langan's HASP as its own provided that it has given written notification to Langan, but where Langan's HASP excludes provisions pertinent to the contractor's work (i.e., confined space entry); the contractor must provide written addendums to this HASP. Additionally, the contractor must:

- Ensure their employees are trained in the use of all appropriate PPE for the tasks involved;
- Notify Langan of any hazardous material brought onto the job site or site related area, the hazards associated with the material, and must provide a material safety data sheet (MSDS) or safety data sheet (SDS) for the material;
- Have knowledge of, understand, and abide by all current federal, state, and local health and safety regulations pertinent to the work;
- Ensure their employees handling hazardous materials, if identified at the site, have received current training in the appropriate levels of 29 CFR 1910.120, *Hazardous Waste Operations and Emergency Response* (HAZWOPER) if hazardous waste is identified at the Site;
- Ensure their employees handling hazardous materials, if identified at the Site, have been fit-tested within the year on the type respirator they will wear; and
- Ensure all air monitoring is in place pertaining to the health and safety of their employees as required by OSHA 1910.120; and
- All contractors must adherer to all federal, state, and local regulatory requirements.

3.0 TASK/OPERATION SAFETY AND HEALTH RISK ANALYSES

A Task-Hazard Analysis (Table 1) was completed for general construction hazards that may be encountered at the Site. The potential contaminants that might be encountered during the field activities and the exposure limits are listed in Table 2 complete inventory of MSDS/SDS for chemical products used on site is included as Attachment E.

3.1 Specific Task Safety Analysis

3.1.1 Geophysical Survey

Langan personnel are not permitted to operate or otherwise handle the geophysical equipment including any downhole geophysical equipment subsequently used to survey boreholes. When boring locations are surveyed with surface geophysical equipment, the locations of the borings as well as possible utilities and other artifacts that may interfere with the subsurface investigation are to be marked with indelible paint, flags, or color tape (when marking indoor locations that the client has specifically requested not be marked with indelible paint). This information must also be added to the site map. When applying paint, proper PPE including at a minimum hand protections should be used.

3.1.2 Hand Clearing of Borehole Locations

Hand clearing will be completed by the contractor. Langan personnel are not permitted to operate or otherwise handle the contractor equipment. Langan will update the site map to include the locations of the cleared borehole locations as well as possible utilities and other artifacts that may interfere with the subsurface investigation.

3.1.3 Soil Investigation and Sampling

Sampling the soil requires the donning of chemical resistant gloves in addition to the standard PPE. Langan personnel are not to operate drilling or excavation equipment nor open sampling devices (acetate liners, sonic sample bags, etc.). These tasks are to be completed by the driller or excavation contractor.

3.1.4 Indoor Drilling and Excavation

The work scope may require indoor drilling or drilling in locations where there may not be adequate ventilation sufficient to safely operate any rig or excavation equipment powered by an internal combustion engine. Where possible, all such work should be done by equipment powered by electricity. If such equipment is used and must be directly wired to the buildings electrical system or to an independent system, this work must be completed by a licensed electrician in accordance with all electrical codes applicable to the work.

Indoor work which is to be completed with equipment powered by an internal combustion engine must incorporate air monitoring of carbon monoxide (CO) using calibrated air monitoring equipment (MultiRAE or equivalent). In addition, the work plan should incorporate mitigation for venting engine exhaust fumes directly to the outdoors and for circulating fresh air into the work

area.

The OSHA Time Weighted Average (TWA) Permissible Exposure Limit (PEL) for CO from 50 to 35 parts per million (ppm). Langan will monitor CO with a suitable monitoring device. If CO levels exceed 5 ppm, Langan will instruct contractors to begin mitigation measures. These measures are at a minimum:

- Increase air circulation using industrial size fans to bring additional fresh air into the building or vent exhaust to the outside;
- Modify the passive exhaust method being used to increase venting circulation by using wider diameter tubing or sealing tubing connections; or
- Modify the work schedule where the rig is turned off to allow time for CO levels to fall back to background

All work must cease if CO levels reach 35 ppm. The Langan engineer is to report to the PM and H&S officer when an action level is reached.

3.1.5 Groundwater Investigation and Sampling

Sampling groundwater requires the donning of chemical resistant gloves in addition to the standard PPE and cut resistant gloves when cutting sampling-tubing to length. Langan personnel are not to operate drilling equipment nor assemble or install monitoring well equipment. These tasks are to be completed by the driller contractor.

1.3.6 Groundwater/Product Gauging

Gauging product requires additional safety considerations including the presence of VOCs and protection of both field cloths and property. Langan will monitor air for VOCs using a duly calibrated PID. Langan will don protective clothing including Tyvek® over-cloths as necessary. To protect property, Langan will work set a plastic barrier to protect floors or protect landscaping and use absorbent pads as necessary to collect pooled product. If sampling for PFAS from the same well, Langan will completed the product check first, if the well can be sampled without including product, Langan will remove the Tyvek® material from the well head vicinity.

3.1.7 Product Recovery Well Bailing

Langan may bail free product from monitoring wells. Free product bailing requires the donning of Tyvek™ suits, Tyvek™ boots and chemical resistant gloves in addition to the standard PPE and cut resistant gloves when cutting sampling-tubing to length. In addition, Langan will place plastic sheeting around the recovery well head to control spillage during product recovery.

Langan will also keep on hand and readily available product absorbing pads to use as needed.

3.1.8 Electrical Pumps

Langan may use an electric pump to collect product from the recovery wells or to sample groundwater. Langan will inspect the electric pump and control box prior to use and specifically note the condition of the electrical connectors, pump, control box and the electrical cord. The electrical connection must be a grounded and connect to the power source using a functional three prong grounded plug. The power source must be a Ground Fault Circuit Interrupter (GFI or GFCI) receptacle.

3.1.9 Plugging and Abandonment of Observation/Monitoring Wells

Langan personnel are not to operate equipment nor assist in the plugging and abandonment of the observation/monitoring wells. These tasks are to be completed by the contractor.

3.1.10 Electric Hammer Drill

Langan or the contractor may use an electric hammer drills to install the sub slab vapor points, Langan will confirm that hammer drill and all extension cords are inspect prior to us3e. The electrical cords must be a grounded and connect to the power source using a functional three prong grounded plug. The power source must be a Ground Fault Circuit Interrupter (GFI or GFCI) receptacle. Langan will confirm that there is a portable GFCI circuit from the outlet to the extension cord and that the GFCI is tested before commencing drilling activities.

3.1.11 Vapor Investigation and Sampling

Sampling vapor requires the donning of work gloves in addition to the standard PPE when assembling the Summa™ canister with the regulator and cut resistant gloves when cutting sampling- or silicone-tubing to length. Langan personnel are not to operate contractor equipment nor assemble or install the contractor vapor point sampling equipment unless instructed by the work plan. When not instructed by the work plan, these tasks are to be completed by the contractor.

3.1.12 Additional Vapor Screening

Langan personnel may prescreen vapor samples for volatile organic compounds (VOCs), methane, hydrogen sulfide and lower explosion limit (LEL) conditions using duly calibrated devices design to screen vapor for these parameters. Langan personnel may also perform atmospheric screening for LEL. Results of the screening may be used in determining which soil vapor samples will be submitted for analysis.

Work activities will immediately cease and the work area is to be evacuated if the MultiRAE returns a reading of 10% of the LEL (an alarm will sound). Langan personnel will contact the Langan PM. Instrument action levels for monitored gases are provided in Table 4.

3.1.13 Drum Sampling

Drilling fluid, rinse water, grossly-contaminated soil samples and cuttings will be containerized in 55-gallon drums for disposed off-site. Each drum must be labeled in accordance with the Langan Drum Labeling Standard Operating Procedure (SOP-#9). Sampling drums requires the donning of work gloves when opening the drums and chemical resistant gloves when sampling in addition to standard PPE.

Langan personnel and contractors are not to move or opened any orphaned (unlabeled) drum found on the site without approval of the project manager.

3.2 Radiation Hazards

No radiation hazards are known or expected at the site.

3.3 Physical Hazards

Physical hazards, which may be encountered during site operations for this project, are detailed in Table 1.

3.3.1 Explosion

No explosion hazards are expected for the scope of work at this site.

3.3.2 Heat Stress

The use of Level C protective equipment, or greater, may create heat stress. Monitoring of personnel wearing personal protective clothing should commence when the ambient temperature is 72°F or above. Table 6 presents the suggested frequency for such monitoring. Monitoring frequency should increase as ambient temperature increases or as slow recovery rates are observed. Refer to the Table 7 to assist in assessing when the risk for heat related illness is likely. To use this table, the ambient temperature and relative humidity must be obtained (a regional weather report should suffice). Heat stress monitoring should be performed by the HSO or the FTL, who shall be able to recognize symptoms related to heat stress.

To monitor the workers, be familiar with the following heat-related disorders and their symptoms:

- **Heat Cramps:** Painful spasm of arm, leg or abdominal muscles, during or after work
- **Heat Exhaustion:** Headache, nausea, dizziness; cool, clammy, moist skin; heavy sweating; weak, fast pulse; shallow respiration, normal temperature
- **Heat Stroke**: Headache, nausea, weakness, hot dry skin, fever, rapid strong pulse, rapid deep respirations, loss of consciousness, convulsions, coma. *This is a life threatening condition***.**

Do not permit a worker to wear a semi-permeable or impermeable garment when they are showing signs or symptoms of heat-related illness.

To monitor the worker, measure:

- **Heart rate:** Count the radial pulse during a 30-second period as early as possible in the rest period. If the heart rate exceeds 100 beats per minute at the beginning of the rest period, shorten the next work cycle by one-third and keep the rest period the same. If the heart rate still exceeds 100 beats per minute at the next rest period, shorten the following work cycle by one-third. A worker cannot return to work after a rest period until their heart rate is below 100 beats per minute.
- **Oral temperature:** Use a clinical thermometer (3 minutes under the tongue) or similar device to measure the oral temperature at the end of the work period (before drinking). If oral temperature exceeds 99.6°F (37.6°C), shorten the next work cycle by one-third without changing the rest period. A worker cannot return to work after a rest period until their oral temperature is below 99.6°F. If oral temperature still exceeds 99.6°F (37.6°C) at the beginning of the next rest period, shorten the following cycle by one-third. Do not permit a worker to wear a semi-permeable or impermeable garment when oral temperature exceeds 100.6°F (38.1°C).

Prevention of Heat Stress - Proper training and preventative measures will aid in averting loss of worker productivity and serious illness. Heat stress prevention is particularly important because once a person suffers from heat stroke or heat exhaustion, that person may be predisposed to additional heat related illness. To avoid heat stress the following steps should be taken:

- Adjust work schedules.
- Mandate work slowdowns as needed.
- Perform work during cooler hours of the day if possible or at night if adequate lighting can be provided.
- Provide shelter (air-conditioned, if possible) or shaded areas to protect personnel during rest periods.
- Maintain worker's body fluids at normal levels. This is necessary to ensure that the cardiovascular system functions adequately. Daily fluid intake must approximately equal the amount of water lost in sweat, id., eight fluid ounces (0.23 liters) of water must be

ingested for approximately every eight ounces (0.23 kg) of weight lost. The normal thirst mechanism is not sensitive enough to ensure that enough water will be drunk to replace lost sweat. When heavy sweating occurs, encourage the worker to drink more. The following strategies may be useful:

- Maintain water temperature 50° to 60°F (10° to 16.6°C).
- Provide small disposal cups that hold about four ounces (0.1 liter).
- Have workers drink 16 ounces (0.5 liters) of fluid (preferably water or dilute drinks) before beginning work.
- Urge workers to drink a cup or two every 15 to 20 minutes, or at each monitoring break. A total of 1 to 1.6 gallons (4 to 6 liters) of fluid per day are recommended, but more may be necessary to maintain body weight.
- Train workers to recognize the symptoms of heat related illness.

3.3.3 Cold-Related Illness

If work on this project begins in the winter months, thermal injury due to cold exposure can become a problem for field personnel. Systemic cold exposure is referred to as hypothermia. Local cold exposure is generally called frostbite.

- **Hypothermia -** Hypothermia is defined as a decrease in the patient core temperature below 96^{O}F. The body temperature is normally maintained by a combination of central (brain and spinal cord) and peripheral (skin and muscle) activity. Interference with any of these mechanisms can result in hypothermia, even in the absence of what normally is considered a "cold" ambient temperature. Symptoms of hypothermia include: shivering, apathy, listlessness, sleepiness, and unconsciousness.
- **Frostbite -** Frostbite is both a general and medical term given to areas of local cold injury. Unlike systemic hypothermia, frostbite rarely occurs unless the ambient temperatures are less than freezing and usually less than 20°F. Symptoms of frostbite are: a sudden blanching or whitening of the skin; the skin has a waxy or white appearance and is firm to the touch; tissues are cold, pale, and solid.

Prevention of Cold-Related Illness - To prevent cold-related illness:

- Educate workers to recognize the symptoms of frostbite and hypothermia
- Identify and limit known risk factors:
- Assure the availability of enclosed, heated environment on or adjacent to the site.
- Assure the availability of dry changes of clothing.
- Assure the availability of warm drinks.
- Start (oral) temperature recording at the job site:
- At the FSO or Field Team Leader's discretion when suspicion is based on changes in a worker's performance or mental status.

- At a worker's request.
- As a screening measure, two times per shift, under unusually hazardous conditions (e.g., wind-chill less than 20°F, or wind-chill less than 30°F with precipitation).
- As a screening measure whenever anyone worker on the site develops hypothermia.

Any person developing moderate hypothermia (a core temperature of 92°F) cannot return to work for 48 hours.

3.3.4 Noise

Work activities during the proposed activities may be conducted at locations with high noise levels from the operation of equipment. Hearing protection will be used as necessary.

3.3.5 Hand and Power Tools

The use of hand and power tools can present a variety of hazards, including physical harm from being struck by flying objects, being cut or struck by the tool, fire, and electrocution. All hand and power tools should be inspected for health and safety hazards prior to use. If deemed unserviceable/un-operable, notify supervisor and tag equipment out of service. Ground Fault Circuit Interrupters (GFCI) are required for all power tools requiring direct electrical service.

3.3.6 Slips, Trips and Fall Hazards

Care should be exercised when walking at the site, especially when carrying equipment. The presence of surface debris, uneven surfaces, pits, facility equipment, and soil piles contribute to tripping hazards and fall hazards. To the extent possible, all hazards should be identified and marked on the site, with hazards communicated to all workers in the area.

3.3.7 Utilities (Electrocution and Fire Hazards)

3.3.7.1 Utility Clearance

The possibility of encountering underground utilities poses fire, explosion, and electrocution hazards. All excavation work will be preceded by review of available utility drawings and by notification of the subsurface work to the N.Y. One –Call--Center.

3.3.7.2 Lockout-Tagout

The potential adverse effects of electrical hazards include burns, arc flashes and electrocution, which could result in serious injury to include death. Therefore, there is a procedure that establishes the requirements for the lockout/tagout (LOTO) of energy isolating devices in accordance with the OSHA electrical lockout and tagging requirements as specified in

29CFR1910.147 and 29 CFR 1926.417. This procedure will be used to ensure that all machines and equipment are isolated from potentially hazardous energy. If possible, equipment that could cause injury due to unexpected energizing, start-up, or release of stored energy will be locked/tagged, before field personnel perform work activities.

The facility owner/operator/representative is to be the authorized person that will initiate and perform the LOTO in accordance with applicable rules and practices. Inerting of electrical power sources is to be completed by an authorized and licensed electrician. Langan personnel will follow LOTO protocols and practices including adding a separate lock/signature to the LOTO chain in accordance with said protocols and practices.

SPECIAL NOTE: Project personnel will assume that all electrical equipment at surface, subsurface and overhead locations is energized, until equipment has been designated and confirmed as de-energized by a utility company representative. Langan will notify the designated utility representative prior to working adjacent to this equipment and will verify that the equipment is energized or de-energized in the vicinity of the work location. No project work shall be performed by Langan personnel or subcontractors near energized electrical lines or equipment.

The FTL shall accompany the designated facility owner/operator/representative or authorized/licensed electrician in conducting a survey to locate and identify all energy isolating devices. Langan will note which switches, valves or other isolating devices are used for inerting the equipment and how they are set assuring LOTO. The lockout/tagout procedure involves, but is not limited to, electricity, motors, steam, natural gas, compressed air, hydraulic systems, digesters, sewers, etc.

3.3.8 Physical Hazard Considerations for Material Handling

There are moderate to severe risks associated with moving heavy objects at the Site. The following physical hazards should be considered when handling materials at the Site:

- Heavy objects will be lifted and moved by mechanical devices rather than manual effort whenever possible.
- The mechanical devices will be appropriate for the lifting of moving task and will be operated only by trained and authorized personnel.
- Objects that require special handling or rigging will only be moved under the guidance of a person who has been specifically trained to move such objects.
- Lifting devices will be inspected, certified, and labeled to confirm their weight capacities. Defective equipment will be taken out of service immediately and repaired or destroyed.
- The wheels of any trucks being loaded or unloaded will be chocked to prevent movement. Outriggers will be fully extended on a flat, firm surface during operation.

- Personnel will not pass under a raised load, nor will a suspended load be left unattended.
- Personnel will not be carried on lifting equipment, unless it is specifically designed to carry passengers.
- All reciprocating, rotating, or other moving parts will be guarded at all times.
- Accessible fire extinguishers, currently (monthly) inspected, will be available in all mechanical lifting devices.
- Verify all loads/materials are secure before transportation.

Material handling tasks that are unusual or require specific guidance will need a written addendum to this HASP. The addendum must identify the lifting protocols before the tasks are performed. Upon approval, the plan must be reviewed with all affected employees and documented. Any deviation from a written plan will require approval by the Langan HSM.

3.3.9 Hearing Conservation

Under the construction industry standard, the maximum permissible occupational noise exposure is 90 dbA (8-hour TWA), and noise levels in excess of 90 dbA must be reduced through feasible administrative and engineering controls (20 CFR 1926.52). Hearing protection is required when working within 15 feet of vacuum extraction equipment and drill rigs.

3.3.9 Open Water

Employees working over or near water, where the danger of drowning exists, shall be provided with U.S. Coast Guard-approved life jackets or buoyant work vests. Prior to and after each use, the buoyant work vests or life preservers shall be inspected for defects which would alter their strength or buoyancy. Defective units shall not be used.

And should a worker fall into the water, OSHA requires (29 CFR 1926.106(c)) that ring buoys with at least 90 feet of line shall be provided and readily available for emergency rescue operations. The distance between ring buoys shall not exceed 200 feet. Another remedial action required by OSHA (29 CFR 1926.106(d)) is the use of lifesaving skiffs.

OSHA requires that at least one lifesaving skiff shall be immediately available at locations where employees are working over or adjacent to water and must include the following provisions.

- The skiff must be in the water or capable of being quickly launched by one person.
- At least one person must be present and specifically designated to respond to water emergencies and operate the skiff at all times when there are employees above water.
- When the operator is on break another operator must be designated to provide requisite coverage when there are employees above water.

- The designated operator must either have the skiff staffed at all times or have someone remain in the immediate area such that the operator can quickly reach the skiff and perform rescue services.
- The skiff operator maybe assigned other tasks provided the tasks do not interfere with the operator's ability to quickly reach the skiff.
- A communication system, such as a walkie-talkie, must be used to inform the skiff operator of an emergency and to inform the skiff operator where the skiff is needed.
- The skiff must be equipped with both a motor and oars.

With regard to the number of skiffs required and the appropriate maximum response time, the following factors must be evaluated:

- The number of work locations where there is a danger of falling into water;
- The distance to each of those locations;
- Water temperature and currents;
- Other hazards such as, but not limited to, rapids, dams, and water intakes;

Other regulations that present S&H practices and PPE for work on or near water include: 29 CFR 1910, Subpart T (401 – 440)

3.4 Biological Hazards

3.4.1 Animals

There is a possibility of encountering wildlife including reptiles, rodents and other small and medium size mammals. The Langan personnel is to avoid interacting with any wildlife.

3.4.2 Insects

Ticks and other biting or stinging insects may to be encountered during site operations. Langan personnel should take necessary precautions including donning long sleeve shirts and insecticide to prevent bites and stings. After field work, Langan personnel should perform a complete visual inspection of their clothing to insure they are not inadvertently harboring ticks. If they do observe a tick bite, they are to contact the HSM or HSO and report the event.

3.4.3 Plants

Poisonous plants may to be encountered during site operations. Langan personnel should take necessary precautions including donning long sleeve shirts and applying preventative poison Ivy/Sumac lotion to prevent or limit effects of exposure. If after field work, Langan employees do observe a reaction to poisonous plant exposure, they are to contact the HSM or HSO and report the event.

3.4.4 Coronavirus

3.4.4.1 General Preventative Measures

Field personnel must follow general proper hygiene measures while in the field including:

- Avoid touching eyes, nose and mouth.
- Cover cough or sneeze with tissue, and throw in trash.
- Wash hands often with soap and water for 20 seconds after going to bathroom, before eating, after blowing nose, coughing or sneezing.
- Use hand sanitizer with at least 60% alcohol if soap and water are not available.
- Avoid physical contact with other people (e.g., no handshakes).
- Maintain a safe distance of at least 6 feet from other people (social distancing).
- Wear face coverings when around other worker to minimize spread of COVID-19. (May be required in certain states or locations.)

3.4.4.2 Construction Trailers

Employees should avoid use of shared construction trailers or where employees cannot maintain a safe distance (minimum 6 feet) from other workers. If trailer use is needed, areas such as desks, phones, chairs and other common areas, should be cleaned and disinfected before and after use. Protocols should be developed to minimize trailer use to essential personal, restrict use from any workers who are ill or showing symptoms of being ill, and ensure a safe distance of 6 feet can be established between workers.

3.4.4.3 Communication

Include Coronavirus topics and prevention topics in daily tailgate meetings to ensure Coronavirus awareness is communicated daily. Discussions can focus on general topics including: social distancing, prevention measures for field personnel, signs and symptoms and recent news on the Coronavirus. Site-specific topics should include minimizing face-to-face contact, disinfecting/sterilizing field equipment, use of PPE to reduce exposure, site security and other potential exposure issues/concerns.

3.4.4.4 Sick/Ill Workers

No Langan employee is permitted to be onsite when ill and/or showing potential symptoms of the Coronavirus. Symptoms of the Coronavirus may appear 2-14 days after exposure and can range from mild to severe. The most common symptoms include: fever, fatigue, dry cough and shortness of breath. If an employee or subcontractor is observed being ill or exhibiting symptoms of Coronavirus, employees must immediately utilize their Stop Work Authority and contact their

project manager to address the situation. If an employee observes another worker onsite exhibiting symptoms of Coronavirus, immediately utilize Stop Work Authority and notify their project manager and site construction manager or safety officer. Work should resume when the safety and health of Langan and subcontractors is adequately addressed.

3.5 Additional Safety Analysis

3.5.1 Presence of Non-Aqueous Phase Liquids (NAPL)

There is potential for exposure to NAPL at this site. Special care and PPE should be considered when NAPL is observed as NAPL is a typically flammable fluid and releases VOCs known to be toxic and/or carcinogenic. If NAPL is present in a monitoring well, vapors from the well casing may contaminate the work area breathing zone with concentrations of VOCs potentially exceeding health and safety action levels. In addition, all equipment used to monitor or sample NAPL (or ground water from wells containing NAPL) must be intrinsically safe. Equipment that directly contacts NAPL must also be resistant to organic solvents.

At a minimum, a PID should be used to monitor for VOCs when NAPL is observed. If NAPL is expected to be observed in an excavation or enclosed area, air monitoring must be started using calibrated air monitoring equipment designed to sound an audio alarm when atmospheric concentrations of VOC are within 10% of the LEL. In normal atmospheric oxygen concentrations, the LEL monitoring may be done with a Wheatstone bridge/catalytic bead type sensor (i.e. MultiRAE). However in oxygen depleted atmospheres (confined space), only an LEL designed to work in low oxygen environments may be used. Best practices require that the LEL monitoring unit be equipped with a long sniffer tube to allow the LEL unit to remain outside the UST excavation.

When NAPL is present, Langan personnel are required to use disposable nitrile gloves at all times to prevent skin contact with contaminated materials. They should also consider having available a respirator and protective clothing (Tyvek® overalls), especially if NAPL is in abundance and there are high concentrations of VOCs.

All contaminated disposables including PPE and sampling equipment must be properly disposed of in labeled 55-gallon drums

3.6 Job Safety Analysis

A Job Safety Analysis (JSA) is a process to identify existing and potential hazards associated with each job or task so these hazards can be eliminated, controlled or minimized. A JSA will be performed at the beginning of each work day, and additionally whenever an employee begins a

new task or moves to a new location. All JSAs must be developed and reviewed by all parties involved. A blank JSA form and documentation of completed JSAs are in Attachment G.

4.0 PERSONNEL TRAINING

4.1 Basic Training

Completion of an initial 40-hour HAZWOPER training program as detailed in OSHA's 29 CFR 1910.120(e) is required for all employees working on a site engaged in hazardous substance removal or other activities which expose or potentially expose workers to hazardous substances, health hazards, or safety hazards as defined by 29 CFR 1910.120(a). Annual 8-hour refresher training is also required to maintain competencies to ensure a safe work environment. In addition to these training requirements, all employees must complete the OSHA 10 hour Construction Safety and Health training and supervisory personnel must also receive eight additional hours of specialized management training. Training records are maintained by the HSM.

4.2 Initial Site-Specific Training

Training will be provided to specifically address the activities, procedures, monitoring, and equipment for site operations at the beginning of each field mobilization and the beginning of each discrete phase of work. The training will include the site and facility layout, hazards, and emergency services at the site, and will detail all the provisions contained within this HASP. For a HAZWOPER operation, training on the site must be for a minimum of 3 days. Specific issues that will be addressed include the hazards described in Section 3.0.

4.3 Tailgate Safety Briefings

Before starting work each day or as needed, the Langan HSO will conduct a brief tailgate safety meeting to assist site personnel in conducting their activities safely. Tailgate meetings will be documented in Attachment H. Briefings will include the following:

- Work plan for the day;
- Review of safety information relevant to planned tasks and environmental conditions;
- New activities/task being conducted;
- Results of Jobsite Safety Inspection Checklist;
- Changes in work practices;
- Safe work practices; and
- Discussion and remedies for noted or observed deficiencies.

5.0 MEDICAL SURVEILLANCE

All personnel who will be performing field work involving potential exposure to toxic and hazardous substances (defined by 29 CFR 1910.120(a)) will be required to have passed an initial baseline medical examination, with follow-up medical exams thereafter, consistent with 29 CFR 1910.120(f). Medical evaluations will be performed by, or under the direction of, a physician board-certified in occupational medicine.

Additionally, personnel who may be required to perform work while wearing a respirator must receive medical clearance as required under CFR 1910.134(e), *Respiratory Protection*. Medical evaluations will be performed by, or under the direction of, a physician board-certified in occupational medicine. Results of medical evaluations are maintained by the HSM.

6.0 PERSONAL PROTECTIVE EQUIPMENT

6.1 Levels of Protection

Langan will provide PPE to Langan employees to protect them from the specific hazards they are likely to encounter on-site. Direct hired contractors will provide their employees with equivalent PPE to protect them from the specific hazards likely to be encountered on-site. Selection of the appropriate PPE must take into consideration: (1) identification of the hazards or suspected hazards; (2) potential exposure routes; and, (3) the performance of the PPE construction (materials and seams) in providing a barrier to these hazards.

Based on anticipated site conditions and the proposed work activities to be performed at the site, Level D protection will be used. The upgrading/downgrading of the level of protection will be based on continuous air monitoring results as described in Section 6.0 (when applicable). The decision to modify standard PPE will be made by the site HSO or FTL after conferring with the PM. The levels of protection are described below.

Level D Protection (as needed)

- Safety glasses with side shields or chemical splash goggles
- Safety boots/shoes
- Coveralls (Tyvek® or equivalent)
- Hard hat
- Long sleeve work shirt and work pants
- Nitrile gloves
- Hearing protection
- Reflective safety vest

Level D Protection (Modified, as needed)

- Safety glasses with sideshields or chemical splash goggles
- Safety boots/shoes (toe-protected)
- Disposable chemical-resistant boot covers
- Coveralls (polycoated Tyvek or equivalent to be worn when contact with wet contaminated soil, groundwater, or non-aqueous phase liquids is anticipated)
- Hard hat
- Long sleeve work shirt and work pants
- Nitrile gloves
- Hearing protection (as needed)
- Personal floatation device (for work within 5 feet of the water)
- Reflective traffic vest

Level C Protection (as needed)

- Full or Half face, air-purifying respirator, with NIOSH approved HEPA filter
- Inner (latex) and outer (nitrile) chemical-resistant gloves
- Safety glasses with side shields or chemical splash goggles
- Chemical-resistant safety boots/shoes
- Hard hat
- Long sleeve work shirt and work pants
- Coveralls (Tyvek® or equivalent)
- Hearing protection (as needed)
- Reflective safety vest

The action levels used in determining the necessary levels of respiratory protection and upgrading to Level C are summarized in Table 4. The written Respiratory Protection Program is maintained by the HSM and is available if needed. The monitoring procedures and equipment are outlined in Section 6.0 (when applicable).

6.2 Respirator Fit-Test

All Langan employees who may be exposed to hazardous substances at the work site are in possession of a full- or half-face, air-purifying respirator and have been successfully fit-tested within the past year. Fit-test records are maintained by the HSM.

6.3 Respirator Cartridge Change-Out Schedule

Respiratory protection is required to be worn when certain action levels (table 2) are reached. A

respirator cartridge change-out schedule has been developed in order to comply with 29 CFR 1910.134. The respirator cartridge change-out schedule for this project is as follows:

- Cartridges shall be removed and disposed of at the end of each shift, when cartridges become wet or wearer experiences breakthrough, whichever occurs first.
- If the humidity exceeds 85%, then cartridges shall be removed and disposed of after 4 hours of use.

Respirators shall not be stored at the end of the shift with contaminated cartridges left on. Cartridges shall not be worn on the second day, no matter how short the time period was the previous day they were used.

7.0 AIR QUALITY MONITORING AND ACTION LEVELS

7.1 Monitoring During Site Operations

Atmospheric air monitoring results may be collected and used to provide data to determine when exclusion zones need to be established and when certain levels of personal protective equipment are required. For all instruments there are Site-specific action level criteria which are used in making field health and safety determinations. Other data, such as the visible presence of contamination or the steady state nature of air contaminant concentration, are also used in making field health and safety decisions. Therefore, the HSO may establish an exclusion zone or require a person to wear a respirator even though atmospheric air contaminant concentrations are below established HASP action levels.

During site work involving disturbance of petroleum-impacted or fill material, real time air monitoring may be conducted for volatile organic compounds (VOCs). A photoionization detector (PID) and/or flame ionization detector (FID) will be used to monitor concentrations of VOCs at personnel breathing-zone height. Air monitoring will be the responsibility of the HSO or designee. Air monitoring may be conducted during intrusive activities associated with the completion of excavation, debris removal, and soil grading. All manufacturers' instructions for instrumentation and calibration will be available onsite.

Subcontractors' air monitoring plans must be equal or more stringent as the Langan plan.

An air monitoring calibration log is provided in Attachment D of this HASP.

7.1.1 Volatile Organic Compounds

Monitoring with a PID, such as a MiniRAE 2000 (10.6v) or equivalent may occur during intrusive work in the AOCs. Colormetric Indicator Tubes for benzene may be used as backup for the PID,

if measurements remain above background monitor every 2 hours. The HSO will monitor the employee breathing zone at least every 30 minutes, or whenever there is any indication that concentrations may have changed (odors, visible gases, etc.) since the last measurement. If VOC levels are observed above 5 ppm for longer than 5 minutes or if the site PPE is upgraded to Level C, the HSO will begin monitoring the site perimeter at a location downwind of the AOC every 30 minutes in addition to the employee breathing zone. Instrument action levels for monitored gases are provided in Table 4.

7.1.2 Metals

Based upon the site historical fill, there is a potential for the soils to contain PAHs and metals. During invasive procedures which have the potential for creating airborne dust, such as excavation of dry soils, a real time airborne dust monitor such as a Mini-Ram may be used to monitor for air particulates. The HSO will monitor the employee breathing zone at least every 30 minutes, or whenever there is any indication that concentrations may have changed (appearance of visible dust) since the last measurement. If dust levels are observed to be greater than 0.100 mg/m^3 or visible dust is observed for longer than 15 minutes or if the site PPE is upgraded to Level C, the HSO will begin monitoring the site perimeter at a location downwind of the AOC every 30 minutes in addition to the employee breathing zone. Instrument action levels for dust monitoring are provided in Table 4.

7.2 Monitoring Equipment Calibration and Maintenance

Instrument calibration shall be documented and included in a dedicated safety and health logbook or on separate calibration pages of the field book. All instruments shall be calibrated before and after each shift. Calibration checks may be used during the day to confirm instrument accuracy. Duplicate readings may be taken to confirm individual instrument response.

All instruments shall be operated in accordance with the manufacturers' specifications. Manufacturers' literature, including an operations manual for each piece of monitoring equipment will be maintained on site by the HSO for reference.

7.3 Determination of Background Levels

Background (BKD) levels for VOCs and dust will be established prior to intrusive activities within the AOC at an upwind location. A notation of BKD levels will be referenced in the daily monitoring log. BKD levels are a function of prevailing conditions. BKD levels will be taken in an appropriate upwind location as determined by the HSO.

Table 4 lists the instrument action levels.

8.0 COMMUNITY AIR MONITORING PROGRAM

Community air monitoring may be conducted in compliance with local standards or the generic CAMP outlined below:

Monitoring for dust and odors will be conducted during all ground intrusive activities by the FTL. Continuous monitoring on the perimeter of the work zones for odor, VOCs, and dust may be required for all ground intrusive activities such as soil excavation and handling activities. The work zone is defined as the general area in which machinery is operating in support of remediation activities. A portable PID will be used to monitor the work zone and for periodic monitoring for VOCs during activities such as soil and groundwater sampling and .soil excavation. The site perimeter will be monitored for fugitive dust emissions by visual observations as well as instrumentation measurements (if required). When required, particulate or dust will be monitored continuously with real-time field instrumentation that will meet, at a minimum, the local standards or, default to the performance standards below:

If VOC monitoring is required, the following actions will be taken based on VOC levels measured:

- If total VOC levels exceed 5 ppm above background for the 15-minute average at the perimeter, work activities will be temporarily halted and monitoring continued. If levels readily decrease (per instantaneous readings) below 5 ppm above background, work activities will resume with continued monitoring.
- If total VOC levels at the downwind perimeter of the hot zone persist at levels in excess of 5 ppm above background but less than 25 ppm, work activities will be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps work activities will resume provided that the total organic vapor level 200 feet downwind of the hot zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less – but in no case less than 20 feet, is below 5 ppm above background for the 15-minute average.
- If the total VOC level is above 25 ppm at the perimeter of the hot zone, activities will be shut down.

If dust monitoring with field instrumentation is required, the following actions will be taken based on instrumentation measurements:

- If the downwind particulate level is 100 micrograms per cubic meter (µg/m^3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression must be employed. Work may continue with dust suppression techniques provided that downwind PM10 levels do not exceed 150 µg/m^3 above the background level and provided that no visible dust is migrating from

the work area.

- If, after implementation of dust suppression techniques, downwind PM10 levels are greater than 150 µg/m³ above the background level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM10 concentration to within 150 µg/m³ of the upwind level and in preventing visible dust migration.

8.1 Dust Suppression Techniques

Preventative measures for dust generation may include wetting site fill and soil, construction of an engineered construction entrance with gravel pad, a truck wash area, covering soils with tarps, and limiting vehicle speeds to five miles per hour.

Work practices to minimize odors and vapors include limiting the time that the excavations remain open, minimizing stockpiling of contaminated-source soil, and minimizing the handling of contaminated material. Offending odor and organic vapor controls may include the application of foam suppressants or tarps over the odor or VOC source areas. Foam suppressants may include biodegradable foams applied over the source material for short-term control of the odor and VOCs.

If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: direct load-out of soils to trucks for off-site disposal; use of chemical odorants in spray or misting systems; and, use of staff to monitor odors in surrounding neighborhoods.

Where odor nuisances have developed during remedial work and cannot be corrected, or where the release of nuisance odors cannot otherwise be avoided due to on-site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering excavation and handling areas under tented containment structures equipped with appropriate air venting/filtering systems.

9.0 WORK ZONES AND DECONTAMINATION

9.1 Site Control

Work zones are intended to control the potential spread of contamination throughout the site and to assure that only authorized individuals are permitted into potentially hazardous areas.

Any person working in an area where the potential for exposure to site contaminants exists will

only be allowed access after providing the HSO with proper training and medical documentation.

Exclusion Zone (EZ) - All activities which may involve exposure to site contaminants, hazardous materials and/or conditions should be considered an EZ. Decontamination of field equipment will also be conducted in the Contaminant Reduction Zone (CRZ) which will be located on the perimeter of the EZ. The EZ and the CRZ will be clearly delineated by cones, tapes or other means. The HSO may establish more than one EZ where different levels of protection may be employed or different hazards exist. The size of the EZ shall be determined by the HSO allowing adequate space for the activity to be completed, field members and emergency equipment.

9.2 Contamination Zone

9.2.1 Personnel Decontamination Station

Personal hygiene, coupled with diligent decontamination, will significantly reduce the potential for exposure.

9.2.2 Minimization of Contact with Contaminants

During completion of all site activities, personnel should attempt to minimize the chance of contact with contaminated materials. This involves a conscientious effort to keep "clean" during site activities. All personnel should minimize kneeling, splash generation, and other physical contact with contamination as PPE is intended to minimize accidental contact. This may ultimately minimize the degree of decontamination required and the generation of waste materials from site operations.

Field procedures will be developed to control over spray and runoff and to ensure that unprotected personnel working nearby are not affected.

9.2.3 Personnel Decontamination Sequence

Decontamination may be performed by removing all PPE used in EZ and placing it in drums/trash cans at the CRZ. Baby wipes should be available for wiping hands and face. Drums/trash cans will be labeled by the field crews in accordance with all local, state, and federal requirements. Management plans for contaminated PPE, and tools are provided below.

9.2.4 Emergency Decontamination

If circumstances dictate that contaminated clothing cannot be readily removed, then remove gross contamination and wrap injured personnel with clean garments/blankets to avoid contaminating other personnel or transporting equipment. If the injured person can be moved,

he/she will be decontaminated by site personnel as described above before emergency responders handle the victim. If the person cannot be moved because of the extent of the injury (a back or neck injury), provisions shall be made to ensure that emergency response personnel will be able to respond to the victim without being exposed to potentially hazardous atmospheric conditions. If the potential for inhalation hazards exist, such as with open excavation, this area will be covered with polyethylene sheeting to eliminate any potential inhalation hazards. All emergency personnel are to be immediately informed of the injured person's condition, potential contaminants, and provided with all pertinent data.

9.2.5 Hand-Held Equipment Decontamination

Hand-held equipment includes all monitoring instruments as stated earlier, samples, hand tools, and notebooks. The hand-held equipment is dropped at the first decontamination station to be decontaminated by one of the decontamination team members. These items must be decontaminated or discarded as waste prior to removal from the CRZ.

To aid in decontamination, monitoring instruments can be sealed in plastic bags or wrapped in polyethylene. This will also protect the instruments against contaminants. The instruments will be wiped clean using wipes or paper towels if contamination is visually evident. Sampling equipment, hand tools, etc. will be cleaned with non-phosphorous soap to remove any potentially contaminated soil, and rinsed with deionized water. All decontamination fluids will be containerized and stored on-site pending waste characterization sampling and appropriate off-site disposal.

9.2.6 Heavy Equipment Decontamination

All heavy equipment and vehicles arriving at the work site will be free from contamination from offsite sources. Any vehicles arriving to work that are suspected of being impacted will not be permitted on the work site. Potentially contaminated heavy equipment will not be permitted to leave the EZ unless it has been thoroughly decontaminated and visually inspected by the HSO or his designee.

9.3 Support Zone

The support zone or cold zone will include the remaining areas of the job site. Break areas and support facilities (include equipment storage and maintenance areas) will be located in this zone. No equipment or personnel will be permitted to enter the cold zone from the hot zone without passing through the decontamination station in the warm zone (if necessitated). Eating, smoking, and drinking will be allowed only in this area.

9.4 Communications

The following communications equipment will be utilized as appropriate.

- Telephones - A cellular telephone will be located with the HSO for communication with the HSM and emergency support services/facilities.
- Hand Signals - Hand signals shall be used by field teams, along with the buddy system. The entire field team shall know them before operations commence and their use covered during site-specific training. Typical hand signals are the following:

Hand Signal	Meaning
Hand gripping throat	Out of air; cannot breathe
Grip partners wrists or place both hands around waist	Leave immediately without debate
Hands on top of head	Need assistance
Thumbs up	OK; I'm alright; I understand
Thumbs down	No; negative
Simulated "stick" break with fists	Take a break; stop work

9.5 The Buddy System

When working in teams of two or more, workers will use the "buddy system" for all work activities to ensure that rapid assistance can be provided in the event of an emergency. This requires work groups to be organized such that workers can remain close together and maintain visual contact with one another. Workers using the "buddy system" have the following responsibilities:

- Provide his/her partner with assistance.
- Observe his/her partner for signs of chemical or heat exposure.
- Periodically check the integrity of his/her partner's PPE.
- Notify the HSO or other site personnel if emergency service is needed.

10.0 NEAREST MEDICAL ASSISTANCE

The address and telephone number of the nearest hospital:

Wyckoff Heights Medical Center
374 Stockholm Street
Brooklyn, New York
718-963-7272

Map with directions to the hospital are shown in Figure 2. This information will either be posted prominently at the site or will be available to all personnel all of the time. Further, all field

personnel, including the HSO & FTL, will know the directions to the hospital.

11.0 STANDING ORDERS/SAFE WORK PRACTICES

The standing orders, which consist of a description of safe work practices that must always be followed while on-site by Langan employees and contractors, are shown in Attachment A. The site HSO and FTL each have the responsibility for enforcing these practices. The standing orders will be posted prominently at the site, or are made available to all personnel at all times. Those who do not abide by these safe work practices will be removed from the site.

12.0 SITE SECURITY

No unauthorized personnel shall be permitted access to the work areas.

13.0 UNDERGROUND UTILITIES

As provided in Langan's Underground Utility Clearance Guidelines, the following safe work practices should be followed by Langan personnel and the contractor before and during subsurface work in accordance with federal, state and local regulations:

- Obtain available utility drawings from the property owner/client or operator.
- Provide utility drawings to the project team.
- In the field, mark the proposed area of subsurface disturbance (when possible).
- Ensure that the utility clearance system has been notified.
- Ensure that utilities are marked before beginning subsurface work.
- Discuss subsurface work locations with the owner/client and contractors.
- Obtain approval from the owner/client and operators for proposed subsurface work locations.
- Use safe digging procedures when applicable.
- Stay at least 10 feet from all equipment performing subsurface work.

14.0 SITE SAFETY INSPECTION

The Langan HSO or alternate will check the work area daily, at the beginning and end of each work shift or more frequently to ensure safe work conditions. The HSO or alternate must complete the Jobsite Safety Inspection Checklist, found in Attachment F. Any deficiencies shall be shared with the FTL, HSM and PM and will be discussed at the daily tailgate meeting.

15.0 HAND AND POWER TOOLS

All hand- and electric-power tools and similar equipment shall be maintained in a safe operating

condition. All electric-power tools must be inspected before initial use. Damaged tools shall be removed immediately from service or repaired. Tools shall be used only for the purpose for which they were designed. All users must be properly trained in their safe operation.

16.0 EMERGENCY RESPONSE

16.1 General

This section establishes procedures and provides information for use during a project emergency. Emergencies happen unexpectedly and quickly, and require an immediate response; therefore, contingency planning and advanced training of staff is essential. Specific elements of emergency support procedures that are addressed in the following subsections include communications, local emergency support units, and preparation for medical emergencies, first aid for injuries incurred on site, record keeping, and emergency site evacuation procedures. In case of emergency, in addition to 911, call *Work Care - Incident Intervention®* at 1-888-479-7787 to report their injuries. For all other communications, contact the Langan Incident Hotline at **973-560-4699** as soon as possible.

Should outside assistance be needed for accidents, fire, or release of hazardous substances, the emergency numbers will be available and posted at the site (Table 5) where a readily accessible telephone is made available for emergency use.

Also, in the event of an incident where a team member becomes exposed or suffers from an acute symptom from contact with site materials and has to be taken to a hospital, a short medical data sheet (Attachment T) for that individual will be made available to the attending physician. The medical data sheet will include the following:

- Name, address, home phone
- Age, height, weight
- Name of person to be notified in case of an accident
- Allergies
- Particular sensitivities
- Does he/she wear contact lenses
- Short checklist of previous illness
- Name of personal physician and phone
- Name of company physician and phone
- Prescription and non-prescription medications currently used.

A sample medical data sheet is included in Attachment T.

16.2 Responsibilities

16.2.1 Health and Safety Officer (HSO)

The HSO is responsible for ensuring that all personnel are evacuated safely and that machinery and processes are shut down or stabilized in the event of a stop work order or evacuation. The HSO is responsible for ensuring the HSM are notified of all incidents, all injuries, near misses, fires, spills, releases or equipment damage. The HSO is required to immediately notify the HSM of any fatalities or catastrophes (three or more workers injured and hospitalized) so that the HSM can notify OSHA within the required time frame.

16.2.2 Emergency Coordinator

The HSO or their designated alternate will serve as the Emergency Coordinator. The Emergency Coordinator is responsible for ensuring that all personnel are evacuated safely and that machinery and processes are shut down or stabilized in the event of a stop work order or evacuation. They are also responsible for ensuring the HSM are notified of all incidents, all injuries, near misses, fires, spills, releases or equipment damage. The Emergency Coordinator is required to immediately notify the HSM of any fatalities or catastrophes (three or more workers injured and hospitalized.

The Emergency Coordinator shall locate emergency phone numbers and identify hospital routes prior to beginning work on the sites. The Emergency Coordinator shall make necessary arrangements to be prepared for any emergencies that could occur.

The Emergency Coordinator is responsible for implementing the Emergency Response Plan.

16.2.3 Site Personnel

Project site personnel are responsible for knowing the Emergency Response Plan and the procedures contained herein. Personnel are expected to notify the Emergency Coordinator of situations that could constitute a site emergency. Project site personnel, including all subcontractors will be trained in the Emergency Response Plan.

16.3 Communications

Once an emergency situation has been stabilized, or as soon as practically, the injured Langan personnel should contact *Work Care - Incident Intervention®* at 1-888-479-7787 to report their injuries. For all other communications, contact the Langan Incident Hotline at **973-560-4699** as soon as possible.

16.4 Local Emergency Support Units

In order to be able to deal with any emergency that might occur during investigative activities at the site, the Emergency Notification Numbers (Table 5) will be posted and provided to all personnel conducting work within the EZ.

Figure 2 shows the hospital route map. Outside emergency number 911 and local ambulance should be relied on for response to medical emergencies and transport to emergency rooms. Always contact first responders when there are serious or life threatening emergencies on the site. Project personnel are instructed not to drive injured personnel to the Hospital. In the event of an injury, provide first aid and keep the injured party calm and protected from the elements and treat for shock when necessary.

16.5 Pre-Emergency Planning

Langan will communicate directly with administrative personnel from the emergency room at the hospital in order to determine whether the hospital has the facilities and personnel needed to treat cases of trauma resulting from any of the contaminants expected to be found on the site. Instructions for finding the hospital will be posted conspicuously in the site office and in each site vehicle.

16.6 Emergency Medical Treatment

The procedures and rules in this HASP are designed to prevent employee injury. Should an injury occur, no matter how slight, it will be reported to the HSO, immediately. First-aid equipment will be available on site at the following locations:

- First Aid Kit: Contractor Vehicles
- Emergency Eye Wash: Contractor Vehicles

During the site safety briefing, project personnel will be informed of the location of the first aid station(s) that has been set up. Some injuries, such as severe cuts and lacerations or burns, may require immediate treatment. Any first aid instructions that can be obtained from doctors or paramedics, before an emergency-response squad arrives at the site or before the injured person can be transported to the hospital, will be followed closely.

16.7 Personnel with current first aid and CPR certification will be identified.

Only in non-emergency situations may an injured person be transported to an urgent care facility. Due to hazards that may be present at the site and the conditions under which operations are conducted, it is possible that an emergency situation may develop. Emergency situations can be

characterized as injury or acute chemical exposure to personnel, fire or explosion, environmental release, or hazardous weather conditions.

16.8 Emergency Site Evacuation Routes and Procedures

All project personnel will be instructed on proper emergency response procedures and locations of emergency telephone numbers during the initial site safety meeting. If an emergency occurs as a result of the site investigation activities, including but not limited to fire, explosion or significant release of toxic gas into the atmosphere, the Langan Project Manager will be verbally notified immediately. All heavy equipment will be shut down and all personnel will evacuate the work areas and assemble at the nearest intersection to be accounted for and to receive further instructions.

In the event that an emergency situation arises, the FTL will implement an immediate evacuation of all project personnel due to immediate or impending danger. The FTL will also immediately communicate with the contractor to coordinate any needed evacuation of the property.

The FTL or Site Supervisor will give necessary instructions until the Designated Incident Commander (IC) assumes control. After the emergency has been resolved, the FTL or Site Supervisor will coordinate with the IC and indicate when staff should resume their normal duties. If dangers are present for those at the designated assembly point, another designated location of assembly will be established.

It will be the responsibility of the FTL or Site Supervisor to report a fire or emergency, assess the seriousness of the situation, and initiate emergency measures until the arrival of the local fire fighters or other first responders, should they be necessary. The FTL, working with emergency responders, may also order the closure of the Site for an indefinite period as long as it is deemed necessary.

Under no circumstances will incoming visitors be allowed to proceed to the area of concern, once an emergency evacuation has been implemented. Visitors or other persons present in the area of the emergency shall be instructed to evacuate the area. The FTL will ensure that access roads are not obstructed and will remain on-site to provide stand-by assistance upon arrival of emergency personnel.

If it is necessary to temporarily control traffic in the event of an emergency, those persons controlling traffic will wear proper reflection warning vests until the arrival of police or fire personnel.

16.8.1 Designated Assembly Locations

All personnel will evacuate the site and assemble at a designated assembly location. The assembly location will be designated by Langan personnel and discussed during each shift's pre-job safety briefing.

16.8.2 Accounting for Personnel

All contractor and subcontractor supervisors are responsible for the accounting of all personnel assembled at the designed assembly area. The Designated Incident Commander shall be notified if personnel are not found.

16.9 Fire Prevention and Protection

In the event of a fire or explosion, procedures will include immediately evacuating the site and notification of the Langan Project Manager of the investigation activities. Portable fire extinguishers will be provided at the work zone. The extinguishers located in the various locations should also be identified prior to the start of work. No personnel will fight a fire beyond the stage where it can be put out with a portable extinguisher (incipient stage).

16.9.1 Fire Prevention

Fires will be prevented by adhering to the following precautions:

Good housekeeping and storage of materials.

- Storage of flammable liquids and gases away from oxidizers.
- Shutting off engines to refuel.
- Grounding and bonding metal containers during transfer of flammable liquids.
- Use of UL approved flammable storage cans.
- Fire extinguishers rated at least 10 pounds ABC located on all heavy equipment, in all trailers and near all hot work activities.

The person responsible for the control of fuel source hazards and the maintenance of fire prevention and/or control equipment is the HSO.

16.10 Significant Vapor Release

Based on the proposed tasks, the potential for a significant vapor release is low. However, if a release occurs, the following steps will be taken:

- Move all personnel to an upwind location. All non-essential personnel shall evacuate.
- Upgrade to Level C Respiratory Protection.

- Downwind perimeter locations shall be monitored for volatile organics.
- If the release poses a potential threat to human health or the environment in the community, the Emergency Coordinator shall notify the Langan Project Manager.
- Local emergency response coordinators will be notified.

16.11 Overt Chemical Exposure

The following are standard procedures to treat chemical exposures. Other, specific procedures detailed on the Material Safety Data Sheet (MSDS) will be followed, when necessary.

SKIN AND EYE: Use copious amounts of soap and water from eye-wash kits and portable hand wash stations.

CONTACT: Wash/rinse affected areas thoroughly, then provide appropriate medical attention. Skin shall also be rinsed for 15 minutes if contact with caustics, acids or hydrogen peroxide occurs. Affected items of clothing shall also be removed from contact with skin.

Providing wash water and soap will be the responsibility of each individual contractor or subcontractor on-site.

16.12 Decontamination during Medical Emergencies

If emergency life-saving first aid and/or medical treatment is required, normal decontamination procedures may need to be abbreviated or omitted. The HSO or designee will accompany contaminated victims to the medical facility to advice on matters involving decontamination when necessary. The outer garments can be removed if they do not cause delays, interfere with treatment or aggravate the problem. Respiratory equipment must always be removed. Protective clothing can be cut away. If the outer contaminated garments cannot be safely removed on site, a plastic barrier placed between the injured individual and clean surfaces should be used to help prevent contamination of the inside of ambulances and/or medical personnel. Outer garments may then be removed at the medical facility. No attempt will be made to wash or rinse the victim if his/her injuries are life threatening, unless it is known that the individual has been contaminated with an extremely toxic or corrosive material which could also cause severe injury or loss of life to emergency response personnel. For minor medical problems or injuries, the normal decontamination procedures will be followed.

16.13 Adverse Weather Conditions

In the event of adverse weather conditions, the HSO will determine if work will continue without potentially risking the safety of all field workers. Some of the items to be considered prior to

determining if work should continue are:

- Potential for heat stress and heat-related injuries.
- Potential for cold stress and cold-related injuries.
- Treacherous weather-related working conditions (hail, rain, snow, ice, high winds).
- Limited visibility (fog).
- Potential for electrical storms.
- Earthquakes.
- Other major incidents.

Site activities will be limited to daylight hours, or when suitable artificial light is provided, and acceptable weather conditions prevail. The HSO will determine the need to cease field operations or observe daily weather reports and evacuate, if necessary, in case of severe inclement weather conditions.

16.14 Spill Control and Response

All small spills/environmental releases shall be contained as close to the source as possible. Whenever possible, the MSDS will be consulted to assist in determining proper waste characterization and the best means of containment and cleanup. For small spills, sorbent materials such as sand, sawdust or commercial sorbents should be placed directly on the substance to contain the spill and aid recovery. Any acid spills should be diluted or neutralized carefully prior to attempting recovery. Berms of earthen or sorbent materials can be used to contain the leading edge of the spills. All spill containment materials will be properly disposed. An exclusion zone of 50 to 100 feet around the spill area should be established depending on the size of the spill.

All contractor vehicles shall have spill kits on them with enough material to contain and absorb the worst-case spill from that vehicle. All vehicles and equipment shall be inspected prior to be admitted on site. Any vehicle or piece of equipment that develops a leak will be taken out of service and removed from the job site.

The following seven steps shall be taken by the Emergency Coordinator:

1. Determine the nature, identity and amounts of major spills.
2. Make sure all unnecessary persons are removed from the spill area.
3. Notify the HSO immediately.
4. Use proper PPE in consultation with the HSO.
5. If a flammable liquid, gas or vapor is involved, remove all ignition sources and use non-sparking and/or explosion-proof equipment to contain or clean up the spill (diesel-only vehicles, air-operated pumps, etc.)

6. If possible, try to stop the leak with appropriate material.
7. Remove all surrounding materials that can react or compound with the spill.

In addition to the spill control and response procedures described in this HASP, Langan personnel will coordinate with the designated project manager relative to spill response and control actions. Notification to the Project Manager must be immediate and, to the extent possible, include the following information:

- Time and location of the spill.
- Type and nature of the material spilled.
- Amount spilled.
- Whether the spill has affected or has a potential to affect a waterway or sewer.
- A brief description of affected areas/equipment.
- Whether the spill has been contained.
- Expected time of cleanup completion. If spill cleanup cannot be handled by Langan's on-site personnel alone, such fact must be conveyed to the Project Manager immediately.

Langan shall not make any notification of spills to outside agencies. The client will notify regulatory agencies as per their reporting procedures.

16.15 Emergency Equipment

The following minimum emergency equipment shall be kept and maintained on site:

- Industrial first aid kit.
- Fire extinguishers (one per site).

16.16 Restoration and Salvage

After an emergency, prompt restoration of utilities, fire protection equipment, medical supplies and other equipment will reduce the possibility of further losses. Some of the items that may need to be addressed are:

- Refilling fire extinguishers.
- Refilling medical supplies.
- Recharging eyewashes and/or showers.
- Replenishing spill control supplies.

16.17 Documentation

Immediately following an incident or near miss, unless emergency medical treatment is required, either the employee or a coworker must contact the Langan Incident/Injury Hotline at 1-(800)-9-

LANGAN (ext. #4699) and the client representative to report the incident or near miss. For emergencies involving personnel injury and/or exposure, the HSO and affected employee will complete and submit an Employee Exposure/Injury Incident Report (Attachment C) to the Langan Corporate Health and Safety Manager as soon as possible following the incident.

17.0 SPECIAL CONDITIONS

This guideline contains information and requirements for special conditions that may not be routinely encountered.

17.1 Scope

The guideline applies to the specific projects identified within this document. Additional provisions will be addressed in each Site-Specific HASP, as needed.

17.2 Responsibilities

Site Personnel - All site personnel must be alert to safety hazards on work sites and take action to minimize such hazards. Personnel must utilize the buddy system, watch for inappropriate behavior, and be alert to changes in site conditions.

Health and Safety Officer (HSO) - The HSO is responsible for considering these procedures in the development of site specific HASPs. The HSO shall schedule frequent "tail gate" safety briefings to enhance safety awareness and discuss potential problems.

17.3 Procedures

The procedures outlined below shall be followed when such conditions are encountered.

17.3.1 Ladders

Langan safety procedures shall be used to ensure employee safety when using ladders in the office or work sites. All ladders shall be coated or repaired to prevent injury to the employee from punctures or lacerations and to prevent snagging or clothing. Any wood ladders used must have an opaque covering except for identification or warning labels, which may be placed on one face only of a side rail.

17.3.1.1 Ladder Use

Employees shall only use ladders for the purposes, which they were designed and shall not be used as scaffolding. Ladders will be maintained and inspected prior to use for slip hazards

including oil and grease. Employees shall use ladders only on stable and level surfaces unless the ladder is secured to prevent possible displacement. Ladders should not be used on slippery surfaces unless secured or provided with slip resistant feet to prevent accidental displacement. Ladders should not be used in locations where they could be displaced by workplace activities or traffic. Ladder rungs, cleats and steps shall be parallel, level and uniformly spaced when the ladder is in the use position.

Employees should not be carrying anything including equipment that could cause injury if there was a fall while utilizing the ladder. The top and bottom of the ladder area must remain clear while in use. When ascending and descending the ladder, employees must face the ladder.

Ladders shall not be loaded beyond the maximum intended load for which they were built or the manufacturer's rated capacity.

17.3.1.2 Portable Ladders

Rungs, cleats and steps for portable ladders and fixed ladders shall be spaced not less than 10 inches apart, nor more than 14 inches apart, as measured between center lines of the rungs, cleats and steps. When used to access an upper landing surface, the ladder side rails must extend at least three feet above the upper landing surface to which the ladder is used to gain access. If this is not possible, due to the ladders length, then the top of the ladder shall be secured at its top to a rigid support.

17.3.1.3 Step Stools

Rungs, cleats and steps of step stools shall not be less than 8 inches apart, nor more than 12 inches apart, as measured between center lines of the rungs, cleats and steps.

17.3.1.4 Extension Ladders

Rungs, cleats and steps of the base section of extension trestle ladders shall be spaced not less than 8 inches apart, nor more than 18 inches apart, as measured between center lines of the rungs, cleats and steps. The rung spacing on the extension section of the extension trestle ladder shall not be less than 6 inches nor more than 12 inches, as measured between center lines of the rungs, cleats and steps. Ladders shall be used at an angle such that the horizontal distance from the top support to the foot of the ladder is approximately one-quarter of the working length of the ladder (the distance along the ladder between the foot and the top support).

17.3.1.5 Inspection

Ladders will be inspected for visible detects periodically, prior to utilization or after any occurrence that could have negatively affected the ladder. Portable ladders with defects including broken or missing rungs, cleats, or steps, broken or split rails, corroded components or other faulty or defective components shall not be used. The ladder will be immediately marked as defective, tagged as "Do Not Use" or blocked from being used and removed from service until repaired.

17.3.2 First Aid/Cardiopulmonary Resuscitation (CPR)

Langan field and office personnel will be encouraged to be trained in First Aid and Cardiopulmonary Resuscitation (CPR). Training will be provided free of charge by Langan to all employees. Employees will receive a training certificate that will be kept on file with the Health & Safety Coordinator (HSC). Training and certification will be provided by a credited provider such as American Red Cross or equivalent.

17.3.2.1 Emergency Procedures

Prior to work at sites the Langan employees certified in first aid and CPR will be identified in the site specific HASP. Langan will endear to have at least one employee at a job site trained and able to render first aid and CPR. The site specific HASP will contain first aid information on both potential chemical and physical hazards. Emergency procedures to be followed are in case of injury or illnesses are provided in the HASP. The HASP will include emergency contact information including local police and fire departments, hospital emergency rooms, ambulance services, on-site medical personnel and physicians. The HASP will also include directions and contact information to the nearest emergency facility in case immediate medical attention is required. The emergency contact information will be conspicuously posted at the worksite. Employees that are injured and require immediate medical attention shall call either 911 or the local posted emergency contacts. Employees should use ambulatory services to transport injured workers to the nearest facility for emergency medical care. In areas where 911 is not available, the telephone numbers of the physicians, hospitals, or ambulances shall be conspicuously posted.

17.3.2.2 First Aid Supplies

First aid supplies are readily available to all Langan employees when required. First aid kits are located in each Langan office. Portable first aid kits are available for employees to use at work sites. First aid kits should consist of items needed to treat employees for potential chemical and physical injuries. At a minimum, first aid kits should contain items to allow basic first aid to be rendered. Where the eyes or body of an employee may be exposed to corrosive materials,

suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use including eye wash.

First aid kits will be weatherproof with individual sealed packages of each item. All portable first aid kits shall be inspected by Langan employees before and after use to ensure all used items are replaced. When out in the field, employees shall check first aid kits weekly to ensure used items are replaced.

17.3.3 Hydrogen Sulfide

Langan employees with the potential to be exposed to hydrogen sulfide while at work sites shall have training in hydrogen sulfide awareness. The training will include identification of areas where employees could be exposed to hydrogen sulfide, health effects, permissible exposure limits, and first aid procedures and personnel protective equipment. Langan employees could be exposed to hydrogen sulfide while at job sites including petroleum refineries, hazardous waste treatment, storage and disposal facilities, uncontrolled hazardous waste sites and remediation projects.

17.3.3.1 Characteristics

Hydrogen sulfide is a colorless gas with a strong odor of rotten eggs that is soluble in water. Hydrogen sulfide is used to test and make other chemicals. It is also found as a by-product of chemical reactions, such as in sewer treatment. It is a highly flammable gas and a dangerous fire hazard. Poisonous gases are produced in fires including sulfur oxides. Hydrogen sulfide is not listed as a carcinogen.

17.3.3.2 Health Effects

Hydrogen Sulfide can affect employees if inhaled or through contact with skin or eyes. Acute (or short term) health effects of hydrogen sulfide exposure include irritation of the nose and throat, dizziness, confusion, headache and trouble sleeping. Inhalation of hydrogen sulfide can irritate the lungs causing coughing and/or shortness of breath. Higher levels of exposure can cause build-up of fluid in the lungs (pulmonary edema), a medical emergency, with severe shortness of breath.

Chronic (or long term) health effects of low levels of exposure to hydrogen sulfide can cause pain and redness of the eyes with blurred vision. Repeated exposure may cause bronchitis with cough, phlegm and shortness of breath.

17.3.3.3 Protective Clothing and Equipment

Respirators are required for those operations in which employees will be exposed to hydrogen sulfide above OSHA permissible exposure level. The maximum OSHA permissible exposure limit (PEL) for hydrogen sulfide is 20 parts of hydrogen sulfide vapor per million parts of air (20 ppm) for an 8-hour workday and the maximum short-term exposure limit (STEL) is 10 ppm for any 10-minute period.

Where employees are exposed to levels up to 100 parts of hydrogen sulfide vapor per million parts of air (100 ppm), the following types of respiratory protection are allowed:

- Any powered, air purifying respirator with cartridge(s);
- Any air purifying, full-facepiece respirator (gas mask) with a chin style, front- or back-mounted canister;
- Any supplied air system with escape self-contained breathing apparatus, if applicable; and,
- Any self-contained breathing apparatus with a full facepiece.

Respirators used by employees must have joint Mine Safety and Health Administration and the National Institute for Occupational Safety and Health (NIOSH) seal of approval. Cartridges or canisters must be replaced before the end of their service life, or the end of the shift, whichever occurs first. Langan employees that have the potential to be exposed to hydrogen sulfide will be trained in the proper use of respirators. Respirator training is discussed under– Langan's Respiratory Protection Program.

Employees with potential exposure to hydrogen sulfide, or when required by the client, will wear a portable hydrogen sulfide gas detector. The detector should have an audible, visual and vibrating alarm. The detector may also provide detection for carbon monoxide, sulfur dioxide and oxygen deficient atmospheres. The hydrogen sulfide monitor will, at a minimum, be calibrated to detect hydrogen sulfide at a level of 20 parts of hydrogen sulfide vapor per million parts of air (20 ppm). Many portable gas detectors will have factory defaults with a low level alarm at 10 ppm and a high level alarm at 15 ppm. Langan employees shall consult clients to determine if any site specific threshold levels exist.

If the hydrogen sulfide gas detector sounds and employees are not wearing appropriate respiratory protection, employees must immediately vacate the area and meet at the assigned emergency location. Langan employees may not re- enter the site without proper respiratory protection and approval from the client or property owner, if needed.

Employees shall wear PPE to prevent eye and skin contact with hydrogen sulfide. Employees

must wear appropriate protective clothing including boots, gloves, sleeves and aprons, over any parts of their body that could be exposed to hydrogen sulfide. Non-vented, impact resistant goggles should be worn when working with or exposed to hydrogen sulfide.

17.3.3.4 Emergency and First Aid Procedures

Eye and Face Exposure

If hydrogen sulfide comes in contact with eyes, it should be washed out immediately with large amounts of water for 30 minutes, occasionally lifting the lower and upper eye lids. Seek medical attention immediately.

Skin Exposure

If hydrogen sulfide contaminates clothing or skin, remove the contaminated clothing immediately and wash the exposed skin with large amounts of water and soap. Seek medical attention immediately. Contaminated clothing should either be disposed of or washed before wearing again.

Breathing

If a Langan employee or other personnel breathe in hydrogen sulfide, immediately get the exposed person to fresh air. If breathing has stopped, artificial respiration should be started. Call for medical assistance or a doctor as soon as possible.

Safety Precautions

Hydrogen sulfide is a highly flammable gas and a dangerous fire hazard. Containers of hydrogen sulfide may explode in a fire situation. Poisonous gases are produced during fires.

Langan employees should contact property owners and operators prior to conducting work onsite to be aware of any site specific contingency plans, identify where hydrogen sulfide is used at the facility and be informed about additional safety rules or procedures.

19.3.4 Fire Protection/Extinguishers

Langan field personnel that have been provided with portable fire extinguishers for use at worksites will be trained to familiarize employees with general principles of fire extinguisher use and hazards associated with the incipient stage of firefighting. Training will be provided prior to initial assignment for field work and annually thereafter.

Portable fire extinguishers shall be visually inspected monthly and subjected to an annual maintenance check. Langan shall retain records of the annual maintenance date.

17.3.5 Overhead lines

When field work is performed near overhead lines, the lines shall be deenergized and grounded, or other protective measures shall be provided before the work shall commence. If overhead lines are to be deenergized, arrangements shall be made with the client, property owner or organization that operates or controls the electric circuits involved to deenergize and ground them. If protective measures, such as guarding, isolating, or insulating, are provided, these precautions shall prevent employees from contacting such lines directly with any part of their body or indirectly through conductive materials, tools, or equipment.

When unqualified Langan personnel are working in an elevated position near overhead lines, the location shall be such that the person and the longest conductive object they may contact cannot come closer to any unguarded, energized overhead line than the following distances:

1. For voltages to ground 50kV or below - 10 feet; and
2. For voltages to ground over 50kV - 10 feet, plus 4 inches for every 10kV over 50kV.

As previously indicated, Langan does not retain qualified employees to perform work on energized equipment.

17.3.5.1 Vehicle and Equipment Clearance

Any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines shall be operated so that a clearance of 10 feet is maintained. If the voltage of the overhead lines is higher than 50kV, the clearance shall be increased 4 inches for every 10kV over that voltage.

If any of the following discussed conditions occur, the clearance may be reduced.

- If the vehicle is in transit with its structure lowered, the clearance may be reduced to 4 ft. If the voltage is higher than 50kV, the clearance shall be increased 4 in. for every 10 kV over that voltage.
- If insulating barriers are installed to prevent contact with the lines, and if the barriers are rated for the voltage of the line being guarded and are not a part of or an attachment to the vehicle or its raised structure, the clearance may be reduced to a distance within the designed working dimensions of the insulating barrier.

Employees standing on the ground may not contact the vehicle or mechanical equipment or any

of its attachments, unless the employee is using protective equipment rated for the voltage; or the equipment is located so that no uninsulated part of its structure (that portion of the structure that provides a conductive path to employees on the ground) can come closer to the overhead line than permitted.

If any vehicle or mechanical equipment capable of having parts of its structure elevated near energized overhead lines is intentionally grounded, employees working on the ground near the point of grounding may not stand at the grounding location whenever there is a possibility of overhead line contact. Additional precautions, such as the use of barricades or insulation, shall be taken to protect employees from hazardous ground potentials, depending on earth resistivity and fault currents, which can develop within the first few feet or more outward from the grounding point.

17.3.6 Trade Secret

Langan employees could potentially be provided trade secret information by the client or property owner when site specific information is provided about highly hazardous chemicals. Trade secret means any confidential formula, pattern, process, device, information or compilation of information that is used in an employer's business, and that gives the employer an opportunity to obtain an advantage over competitors who do not know or use it. Langan employees understand that this information should be kept confident and if required, may enter into a confidentially agreement with the client.

17.3.7 Bloodborne Pathogens

Langan employees that can reasonably anticipate exposure to blood or other potentially infectious material while at work sites shall have training in bloodborne pathogens. Applicable employees would include those trained in first aid and serving a designated role as an emergency medical care provider. Bloodborne pathogens are pathogenic microorganisms that are present in human blood and can cause disease in humans. These pathogens include, but are not limited to, hepatitis B virus and human immunodeficiency virus.

17.3.7.1 Training

Langan employees with potential occupational exposure to blood or other potentially infectious material must participate in a training program. Training must be conducted prior to initial assignment where there would be potential for exposure and annually thereafter within one year of previous training. The training program will be provided to Langan employees at no cost to them and during working hours.

Langan will ensure the training program shall consist of the following:

- An accessible copy of the regulatory text of 29 CFR 1910.1030 and an explanation of its contents;
- A general explanation of the epidemiology and symptoms of bloodborne diseases;
- An explanation of the modes of transmission of bloodborne pathogens;
- An explanation of Langan's exposure control plan and the means by which the employee can obtain a copy of the written plan;
- An explanation of the appropriate methods for recognizing tasks and other activities that may involve exposure to blood and other potentially infectious materials;
- An explanation of the use and limitations of personal protective
    - equipment (PPE) to prevent and reduce exposure;
    - Information on the types, proper use, location, removal, handling and disposal of PPE;
    - An explanation of the basis for selection of PPE;
    - Information on the hepatitis B vaccine, including information on its efficacy, safety, method of administration, the benefits of being vaccinated, and that the vaccine and vaccination will be offered free of charge;
    - Information on the appropriate actions to take and persons to contact in an emergency involving blood or other potentially infectious materials;
    - An explanation of the procedure to follow if an exposure incident occurs, including the method of reporting the incident and the medical follow-up that will be made available;
    - Information on the post-exposure evaluation and follow-up that the
    - employer is required to provide for the employee following an exposure incident;
    - An explanation of the signs and labels and/or color coding required by paragraph 29 CFR 1910.1030(g)(1); and
    - An opportunity for interactive questions and answers with the person conducting the training session.

Langan will develop and implement a written Exposure Control Plan, which will be designed to eliminate or minimize employee exposure to bloodborne pathogens. The Exposure Control Plan will contain the following elements:

- An exposure determination for employees;
- The schedule and method of implementation for Methods of Compliance (29 CFR 191.1030(d)), Hepatitis B Vaccination and Post-Exposure Evaluation and Follow-up (29 CFR 1910.1030(f)), Communication of Hazards to Employees (29 CFR 1910.1030(g)) and (h) Recordkeeping (29 CFR 1910.1030(h));
- The procedure for the evaluation of circumstances surrounding exposure incidents;
- Ensure a copy of the Exposure Control Plan will be accessible to employees; and,
- The Exposure Control Plan shall be reviewed and updated at least annually.

Langan employees with occupational exposure to bloodborne pathogens include any employees trained in first aid that would be expected to provide emergency medical care. This determination is made without regards to the use of PPE, which could eliminate or minimize exposure.

Universal precautions shall be observed to prevent contact with blood or other potentially infectious materials. According to the concept of Universal Precautions, all human blood and certain human body fluids are treated as if known to be infectious for bloodborne pathogens. Under circumstances in which differentiation between body fluid types is difficult or impossible, all body fluids shall be considered potentially infectious materials.

Work practice controls shall be used to eliminate or minimize employee exposure, if applicable. Since Langan employees will have occupational exposure only during rendering of first aid, personnel protective equipment will be utilized to reduce or minimize exposure. PPE that could be available to Langan personnel when administering first aid includes safety glasses, gloves, and Tyvek suits or sleeves. PPE and first aid kits will be provided to employees at no cost to them.

Langan employees that render first aid in office areas will have access to hand washing facilities or restrooms. For first aid rendered at field locations, first aid kits will contain an appropriate antiseptic hand cleanser and clean cloth/paper towels or antiseptic towelettes. After using antiseptic hand cleansers or towelettes, employees shall wash their hands with soap and running water as soon as feasible.

After administering first aid, potentially infectious materials, including towels, personnel protective equipment, clothes and bandages, shall be placed in a container, which prevents leakage during collection, handling, processing, storage, transport, or shipping. All PPE will be dispose of after use. Any equipment or working surfaces which was been exposed to blood or potentially infectious materials due to an injury, will be decontaminated prior to reuse.

Langan will make available the hepatitis B vaccine and vaccination series to all employees who have occupational exposure, and post-exposure evaluation and follow-up to all employees who have had an exposure incident. These services will be available to the employee at no cost to them through a medical provider.

17.3.7.2 Recordkeeping

Langan will maintain training and medical records for each employee with occupational exposure to blood or potentially infectious materials. Medical and training records will be maintained by Langan's H&S Department.

Training records will include the following:

- Dates of the training sessions;
- Contents or a summary of the training sessions;
- Names and qualifications of persons conducting the training; and
- Names and job titles of all persons attending the training sessions.

Training records shall be maintained for 3 years from the date on which the training occurred. Medical records will be will be preserved and maintained for the duration of employment plus 30 years.

All records will be made available upon request to employees, the Assistant Secretary of Labor for Occupational Safety and Health, and Director of National Institute for Occupational Safety and Health Director of OSHA for examination and copying. Medical records must have written consent from employee before releasing.

If Langan ceases to do business, all records shall be transferred to the successor employer. The successor employer shall receive and maintain these records.

If there will not be a successor, Langan will notify current employees of their rights to access records at least three months prior to the cessation of business.

18.0 RECORDKEEPING

The following is a summary of required health and safety logs, reports and recordkeeping.

18.1 Field Change Authorization Request

Any changes to the work to be performed that is not included in the HASP will require an addendum that is approved by the Langan project manager and Langan HSM to be prepared. Approved changes will be reviewed with all field personnel at a safety briefing.

18.2 Medical and Training Records

Copies or verification of training (40-hour, 8-hour, supervisor, site-specific training, documentation of three-day OJT, and respirator fit-test records) and medical clearance for site work and respirator use will be maintained in the office and available upon request. Records for all subcontractor employees must also be available upon request. All employee medical records will be maintained by the HSM.

18.3 Onsite Log

A log of personnel on site each day will be kept by the HSO or designee.

18.4 Daily Safety Meetings ("Tailgate Talks")

Completed safety briefing forms will be maintained by the HSO.

18.5 Exposure Records

All personal monitoring results, laboratory reports, calculations and air sampling data sheets are part of an employee exposure record. These records will be maintained by the HSO during site work. At the end of the project they will be maintained according to 29 CFR 1910.1020.

18.6 Hazard Communication Program/MSDS-SDS

Material safety data sheets (MSDS) of Safety Data Sheets (SDS) have been obtained for applicable substances and are included in this HASP (Attachment D). Langan's written hazard communication program, in compliance with 29 CFR 1910.1200, is maintained by the HSM.

18.7 Documentation

Immediately following an incident or near miss, unless emergency medical treatment is required, either the employee or a coworker must contact the Langan incident/injury hotline at 1-800-952-6426, extension 4699 and the Project Manager to report the incident or near miss. The Project Manager will contact the client or client representative. A written report must be completed and submitted HSM within 24 hours of the incident. For emergencies involving personnel injury and/or exposure, employee will complete and submit the Langan incident/injury report to the Langan corporate health and safety manager as soon as possible following the incident. Accidents will be investigated in-depth to identify all causes and to recommend hazard control measures.

18.7.1 Accident and Injury Report Forms

18.7.1.1 Accident/Incident Report

All injuries, no matter how slight, shall be reported to the FTL and the PM immediately. The accident/incident report forms, attached in Attachment U and Attachment V will be filled out on all accidents by the applicable contractor supervision personnel, the FTL, or the HSO. Copies of all accident/incident reports shall be kept on-site and available for review. Project personnel will be instructed on the location of the first aid station, hospital, and doctor and ambulance service near the job. The emergency telephone numbers will be conspicuously posted in site vehicles near the work zone. First aid supplies will be centrally located and conspicuously posted between

restricted and non-restricted areas to be readily accessible to all on the site.

18.7.1.2 First Aid Treatment Record

The forms in will be used for recording all non-lost time injuries treated by the project first-aid attendant, the local physician or hospital will be entered in detail on this record. "Minor" treatment of scratches, cuts, etc. will receive the same recording attention as treatment of more severe injuries.

18.7.1.3 OSHA Form 300

An OSHA Form 300 will be kept at the Langan Corporate Office in Parsippany, New Jersey. All recordable injuries or illnesses will be recorded on this form. Subcontractor employers must also meet the requirements of maintaining an OSHA 300 form. The Incident Report form used to capture the details of work-related injuries/illnesses meets the requirements of the OSHA Form 301 (supplemental record) and must be maintained with the OSHA Form 300 for all recordable injuries or illnesses. Forms for recording OSHA work-related injuries and illnesses are included in Attachment U and Attachment V.

19.0 CONFINED SPACE ENTRY

Confined spaces are not anticipated at the Site during planned construction activities. If confined spaces are identified, the contractor must implement their own confined space program that all applicable federal, state and local regulations. Confined spaces **will not** be entered by Langan personnel.

20.0 HASP ACKNOWLEDGEMENT FORM

All Langan personnel and contractors will sign this HASP Compliance Agreement indicating that they have become familiar with this HASP and that they understand it and agree to abide by it.

Printed Name	Signature	Company	Date

TABLES

TABLE 1
TASK HAZARD ANALYSES

Task	Hazard	Description	Control Measures	First Aid
1.3.1 – 1.3.13	Contaminated Soil or Groundwater-Dermal Contact	Contaminated water spills on skin, splashes in eyes; contact with contaminated soil/fill during construction activities or sampling.	Wear proper PPE; follow safe practices, maintain safe distance from construction activities	See Table 2, seek medical attention as required
1.3.1 – 1.3.13	Lacerations, abrasions, punctures	Cutting bailer twine, pump tubing, acetate liners, etc. with knife; cuts from sharp site objects or previously cut piles, tanks, etc.; Using tools in tight spaces	Wear proper PPE; follow safe practices	Clean wound, apply pressure and/or bandages; seek medical attention as required.
1.3.1 – 1.3.13	Contaminated Media Inhalation	Opening drums, tanks, wells; vapors for non-aqueous phase liquids or other contaminated site media; dust inhalation during excavation; vapor accumulation in excavation	Follow air monitoring plan; have quick access to respirator, do not move or open unlabeled drums found at the site, maintain safe distance from construction activities	See Table 2, seek medical attention as required
1.3.1 – 1.3.13	Lifting	Improper lifting/carrying of equipment and materials causing strains	Follow safe lifting techniques; Langan employees are not to carry contractor equipment or materials	Rest, ice, compression, elevation; seek medical attention as required
1.3.1 – 1.3.13	Slips, trips, and falls	Slips, trips and falls due to uneven surfaces, cords, steep slopes, debris and equipment in work areas	Good housekeeping at site; constant awareness and focus on the task; avoid climbing on stockpiles; maintain safe distance from construction activities and excavations; avoid elevated areas over six feet unless fully accredited in fall protection and wearing an approved fall protection safety apparatus	Rest, ice, compression, elevation; seek medical attention as required
1.3.1 – 1.3.13	Noise	Excavation equipment, hand tools, drilling equipment.	Wear hearing protection; maintain safe distance from construction activities	Seek medical attention as required
1.3.1 – 1.3.13	Falling objects	Soil material, tools, etc. dropping from drill rigs, front-end loaders, etc.	Hard hats to be worn at all times while in work zones; maintain safe distance from construction activities and excavations	Seek medical attention as required
1.3.1 – 1.3.13	Underground/ overhead utilities	Excavation equipment, drill rig auger makes contact with underground object; boom touches overhead utility	"One Call" before dig; follow safe practices; confirm utility locations with contractor; wear proper PPE; maintain safe distance from construction activities and excavations	Seek medical attention as required
1.3.1 – 1.3.13	Insects (bees, wasps, hornet, mosquitoes, and spider)	Sings, bites	Insect Repellent; wear proper protective clothing (work boots, socks and light colored pants);field personnel who may have insect allergies (e.g., bee sting) should provide this information to the HSO or FSO prior to commencing work, and will have allergy medication on site.	Seek medical attention as required
1.3.1 – 1.3.13	Vehicle traffic / Heavy Equipment Operation	Vehicles unable to see workers on site, operation of heavy equipment in tight spaces, equipment failure, malfunctioning alarms	Wear proper PPE, especially visibility vest; use a buddy system to look for traffic; rope off area of work with cones and caution tape or devices at points of hazard, maintain safe distance from construction activities and equipment	Seek medical attention as required

TABLE 2
CONTAMINANT HAZARDS OF CONCERN

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	1,1'-Biphenyl 1,1-Biphenyl Biphenyl Phenyl benzene Diphenyl	92-52-4	None	1 mg/m^3 100 mg/m^3	Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, throat; headache, nausea, lassitude (weakness, exhaustion), numb limbs; liver damage	Eye: Irrigate immediately Skin: Water flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	1,1-Dichloroethane Asymmetrical dichloroethane Ethylidene chloride 1,1-Ethylidene dichloride 1,1-DCA	75-34-3	PID	100 ppm 3000 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the skin; central nervous system depression; liver, kidney, lung damage	Eye: Irrigate immediately Skin: Soap flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	1,2,4,5-Tetramethylbenzene Durene	95-93-2	NA	None None	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat, respiratory system; bronchitis; hypochromic anemia; headache, drowsiness, lassitude (weakness, exhaustion), dizziness, nausea, incoordination; vomiting, confusion; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	1,2,4-Trimethylbenzene	95-63-6	PID	None None	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat, respiratory system; bronchitis; hypochromic anemia; headache, drowsiness, lassitude (weakness, exhaustion), dizziness, nausea, incoordination; vomiting, confusion; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	1,2-Dichloroethene 1,2-Dichloroethylene 1,2-DCE trans-1,2-Dichloroethylene Total 1,2-Dichloroethene cis-1,2-Dichloroethylene mixture of cis and trans Acetylene dichloride cis-Acetylene dichloride sym-Dichloroethylene cis-1,2-Dichloroethene cDCE 1,1-dimethyl-;dimethyl1,1-cyclohexane sym-Dichloroethylene Dichloroethylenes trans-1 2-Dichloroethene	159-59-2 156-60-5 156-60-2 540-59-0	PID	200 ppm 4000 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system. May be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	1,3,5-Trimethylbenzene Mesitylene sym-Trimethylbenzene	108-67-8	PID	None None	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat, respiratory system; bronchitis; hypochromic anemia; headache, drowsiness, lassitude (weakness, exhaustion), dizziness, nausea, incoordination; vomiting, confusion; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	1,3-Butadiene Biethylene Bivinyl Butadiene Divinyl Erythrene Vinylethylene	106-99-0	PID	1 ppm 2000 ppm	Vapor	inhalation, skin and/or eye contact (liquid)	irritation to the eyes, nose, throat; drowsiness, dizziness; liquid: frostbite; teratogenic, reproductive effects; [potential occupational carcinogen]	Eye: Frostbite Skin: Frostbite Breathing: Respiratory support
1.3.1 – 1.3.13	1,4-Dichlorobenzene para-Dichlorobenzene p-Dichlorobenzene 1,4-Dichlorobenzene 1,4-DCB para-Dichlorobenzene p-Dichlorobenzene p-DCB PDB Paramoth Para crystals Paracide Dichlorocide	106-46-7	PID	75 ppm 150 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, swelling periorbital (situated around the eye); profuse rhinitis; headache, anorexia, nausea, vomiting; weight loss, jaundice, cirrhosis; in animals: liver, kidney injury; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	2,2,4-Trimethylpentane Isooctane	540-84-1	PID	NA NA	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat, respiratory system; bronchitis; hypochromic anemia; headache, drowsiness, lassitude (weakness, exhaustion), dizziness, nausea, incoordination; vomiting, confusion; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	2,4-dinitrotoluene	121-14-2	PID	NA NA	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	Irritation to the eyes, skin, respiratory system, Blue lips or finger nails. Blue skin. Headache. Dizziness. Nausea. Confusion. Convulsions. Unconsciousness	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	2-Butanone Ethyl methyl ketone MEK Methyl acetone Methyl ethyl ketone	78-93-3	PID	200 ppm 3000 ppm	Soil Groundwater Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose; headache; dizziness; vomiting; dermatitis	Eye: Irrigate immediately Skin: Water wash immediately Breathing: Fresh air Swallow: Medical attention immediately
1.3.1 – 1.3.13	2-Hexanone Butyl methyl ketone MBK Methyl butyl ketone Methyl n-butyl ketone	591-78-6	PID	100 ppm 1600 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, nose; peripheral neuropathy: lassitude (weakness, exhaustion), paresthesia; dermatitis; headache, drowsiness	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	2-Methylnaphthalene β-methylnaphthalene	91-57-6	PID	NA NA	Groundwater Soil Vapor	inhalation, ingestion or skin absorption, eye contact	irritation to the skin, eyes, mucous membranes and upper respiratory tract. It may also cause headaches, nausea, vomiting, diarrhea, anemia, jaundice, euphoria, dermatitis, visual disturbances, convulsions and comatose	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	4-Isopropyltoulene 1-Methyl-4-(1-methylethyl)benzene 4-Isopropyltoluene; 4-Methylcumene; 1-Methyl-4-isopropylbenzene Dolcymene Camphogen Paracymene Cymene p-Cymene p-Isopropyltoluene	99-87-6	PID	NA NA	Soil Groundwater Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; dermatitis; headache, narcosis, coma	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Acenaphthene 1,2-Dihydroacenaphthylene 1,8-Ethylenenaphthalene peri-Ethylenenaphthalene Naphthyleneethylene Tricyclododecapentaene	83-32-9	PID	NA NA	Soil	inhalation, ingestion, skin and/or eye contact,	irritation to the skin, eyes, mucous membranes and upper respiratory tract; If ingested, it can cause vomiting	Eye: Irrigate immediately Skin: Soap wash immediately, if redness or irritation develop, seek medical attention immediately Breathing: Move to fresh air Swallow: do not induce vomiting, seek medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Acenaphthylene Cycopental(de)naphthalene, Acenaphthalene	208-96-8	PID	NA NA	Soil	inhalation, ingestion, skin and/or eye contact	irritation to the skin, eyes, mucous membranes and upper respiratory tract	Eye: Irrigate immediately, seek medical attention immediately, Skin: Soap wash immediately, if redness or irritation develop, seek medical attention immediately Breathing: Move to fresh air Swallow: do not induce vomiting, seek medical attention immediately
1.3.1 – 1.3.13	Acetone Dimethyl ketone Ketone propane 2-Propanone	67-64-1	PID	1000 ppm 2500 ppm	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, nose, throat; headache, dizziness, central nervous system depression; dermatitis	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Aluminum	7429-90-5	None	0.5 mg/m3 50 mg/m3	Soil	inhalation, skin and/or eye contact	irritation to the eyes, skin, respiratory system	Eye: Irrigate immediately Breathing: Fresh air

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Anthracene	120-12-7	PID	0.2 mg/m^3 80 mg/m^3 (Coal Pitch Tar)	Soil	inhalation, skin or eye contact, ingestion	irritation to the skin, eyes, mucous membranes and upper respiratory tract, abdominal pain if ingested.	Eye: Irrigate immediately, seek medical attention immediately, Skin: Soap wash immediately, Breathing: Move to fresh air, refer to medical attention; Swallow: refer to medical attention
1.3.1 – 1.3.13	Antimony	7440-36-0	None	0.5 mg/m^3 50 mg/m^3	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	irritation skin, possible dermatitis; resp distress; diarrhea; muscle tremor, convulsions; possible gastrointestinal tract	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Aroclor 1260	11096-82-5	None	0.5 mg/m^3 5 mg/m^3	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, chloracne	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Aroclor 1268	11100-14-4	None	0.5 mg/m^3 5 mg/m^3	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, chloracne	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Arsenic	NA	None	0.5 mg/m^3 NA	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	irritation skin, possible dermatitis; resp distress; diarrhea; muscle tremor, convulsions; possible gastrointestinal tract	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Barium	10022-31-8	None	0.5 mg/m^3 50 mg/m^3	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, upper respiratory system; skin burns; gastroenteritis; muscle spasm; slow pulse	Eye: Irrigate immediately Skin: Water flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Benzene Benzol Phenyl hydride Alkyl benzene isomers	71-43-2	PID	3.19 mg/m^3 1,595 mg/mg^3	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, respiratory system; dizziness; headache, nausea, staggered gait; lassitude (weakness, exhaustion) [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Benzo(a)anthracene Benzanthracene Benzanthrene 1,2-Benzanthracene Benzo[b]phenanthrene Tetraphene	56-55-3	PID	0.2 mg/m^3 80 mg/m^3 (Coal Pitch Tar)	Groundwater Soil	inhalation, skin or eye contact, ingestion	dermatitis, bronchitis, [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Benzo(a)pyrene	50-32-8	PID	0.2 mg/m^3 80 mg/m^3 (Coal Pitch Tar)	Soil	inhalation, skin or eye contact, ingestion	dermatitis, bronchitis, [potential occupational carcinogen]	Eye: Irrigate immediately, seek medical attention Skin: Soap wash immediately; Breathing: move to fresh air; Swallow: Induce vomiting if conscious, seek medical attention immediately
1.3.1 – 1.3.13	Benzo(b)fluoranthene	205-99-2	PID	0.2 mg/m^3 80 mg/m^3 (Coal Pitch Tar)	Soil	inhalation, skin or eye contact, ingestion	irritation to eyes and skin, respiratory irritation(dizziness, weakness, fatigue, nausea, headache)	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Benzo(g,h,i)perylene Benzo(ghi)perylene	191-24-2	PID	0.2 mg/m^3 80 mg/m^3 (Coal Pitch Tar)	Soil	inhalation, skin or eye contact, ingestion	NA	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attention immediately
1.3.1 – 1.3.13	Benzo(k)fluoranthene	207-08-9	PID	0.2 mg/m^3 80 mg/m^3 (Coal Pitch Tar)	Soil	inhalation, skin or eye contact, ingestion	irritation to eyes and skin, respiratory irritation (dizziness, weakness, fatigue, nausea, headache)	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attention immediately
1.3.1 – 1.3.13	Benzoic acid Carboxybenzene E210 Dracylic acid Phenylmethanoic acid Benzenecarboxylic acid Benzoic acid isomer	65-85-0	None	NA NA	Groundwater Soil Vapor	inhalation, skin or eye contact, ingestion	irritation to eyes with possible eye damage, skin causing rash, redness or burning, irritation to nose, throat and lungs	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air
1.3.1 – 1.3.13	Benzyl butyl phthalate Butyl benzyl phthalate Butylbenzylphthalate	86-66-7	None	NA NA	Groundwater Soil Vapor	inhalation, skin or eye contact, ingestion	irritation to eyes and skin, respiratory irritation (dizziness, weakness, fatigue, nausea, headache	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Beryllium	7440-41-7	None	0.002 mg/m^3 4 mg/m^3	Soil	inhalation, skin and/or eye contact	berylliosis (chronic exposure): anorexia, weight loss, lassitude (weakness, exhaustion), chest pain, cough, clubbing of fingers, cyanosis, pulmonary insufficiency; irritation to the eyes; dermatitis; [potential occupational carcinogen]	Eye: Irrigate immediately Breathing: Fresh air
1.3.1 – 1.3.13	Bis(2-ethylhexyl)phthalate Bis(2-Ethylhexyl) Phthalate Di-sec octyl phthalate DEHP Di(2-ethylhexyl)phthalate Octyl phthalate bis(2-ethylexyl)phthalate	117-81-7	None	5 mg/m^3 5000 mg/m^3	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, mucous membrane; in animals: liver damage; teratogenic effects; [potential occupational carcinogen	Eye: Irrigate immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	BTEX Benzene, Toluene, Ethylbenzene M-Xylene, O-Xylene And P-Xylene; BTEX I; BTEX II; BTEX Mixture I; BTEX Mixture II; BTEX Stock Standard Total BTEX	NA	PID	3.19 mg/m^3 1,595 mg/mg^3	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, respiratory system; dizziness; headache, nausea, staggered gait; lassitude (weakness, exhaustion) [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Cadmium	7440-43-9	None	0.005 mg/m^3 9 mg/m^3	Soil	inhalation, ingestion	pulmonary edema, dyspnea (breathing difficulty), cough, chest tightness, substernal (occurring beneath the sternum) pain; headache; chills, muscle aches; nausea, vomiting, diarrhea; anosmia (loss of the sense of smell), emphysema, proteinuria, mild anemia; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Calcium	7440-70-2	None	NA	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, upper resp tract; ulcer, perforation nasal septum; pneumonitis; dermatitis	Eye: Irrigate immediately Skin: Water flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Carbazole 9-azafluorene Dibenzopyrrole Diphenylenimine diphenyleneimide	86-74-8	None	NA NA	Soil	inhalation, skin absorption (liquid), skin and/or eye contact	irritation to eyes and skin, respiratory irritation	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Carbon disulfide	75-15-0	PID	20 ppm 500 ppm	Soil Groundwater Vapor	inhalation, skin or eye contact, ingestion	irritation to the eyes, skin, respiratory system	Eye: Irrigate immediately (liquid) Skin: Water flush immediately (liquid) Breathing: Respiratory support
1.3.1 – 1.3.13	Carbon tetrachloride Carbon chloride Carbon tet Freon® 10 Halon® 104 Tetrachloromethane	56-23-5	PID	10 ppm 200 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin; central nervous system depression; nausea, vomiting; liver, kidney injury; drowsiness, dizziness, incoordination; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Chloroform Methane trichloride Trichloromethane Chloro-3-methyl phenol	67-66-3	None	50 ppm 500 ppm	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin; dizziness, mental dullness, nausea, confusion; headache, lassitude (weakness, exhaustion); anesthesia; enlarged liver; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Chromium Total Chromium Chromium, Total	7440-47-3	None	1.0 mg/m^3 250 mg/m^3	Groundwater Soil	inhalation absorption ingestion	irritation to eye, skin, and respiratory	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Chrysene Benzo[a]phenanthrene 1,2-Benzphenanthrene	218-01-9	PID	0.2 mg/m^3 80 mg/m^3 (Coal Pitch Tar)	Groundwater Soil	inhalation, absorption, ingestion, consumption	irritation to eye, skin, and respiratory, gastrointestinal irritation nausea, vomit, diarrhea [potential occupational carcinogen]	Eyes: Irrigate immediately Skin: Soap wash promptly. Breath: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	cis-1,2-Dichloroethylene cis-1,2-Dichloroethene	156-59-2	NA	NA NA	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system. May be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Cobalt	7440-48-4	None	0.1mg/m^3 20 mg/m^3	Soil	inhalation, ingestion, skin and/or eye contact	Cough, dyspnea (breathing difficulty), wheezing, decreased pulmonary function; weight loss; dermatitis; diffuse nodular fibrosis; resp hypersensitivity, asthma	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Copper	7440-50-8	None	1.0 mg/m^3 100 mg/m^3	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, nose, metallic taste; dermatitis; anemia	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Cumene Cumol Isopropylbenzene 2-Phenyl propane 1-methylethy lbenzene Isopropyl Benzene	98-82-8	PID	50 ppm 900 ppm	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; dermatitis; headache, narcosis, coma	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Cyanide	57-12-5	None	5 mg/m^3 25 mg/m^3	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	Exposure to cyanide can cause weakness, headaches, confusion, dizziness, fatigue, anxiety, sleepiness, nausea and vomiting. Breathing can speed up then become slow and gasping. Coma and convulsions also occur. If large amounts of cyanide have been absorbed by the body, the person usually collapses and death can occur very quickly. Long-term exposure to lower levels of cyanide can cause skin and nose irritation, itching, rashes and thyroid changes.	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Cyclohexane Benzene hexahydride Hexahydrobenzene Hexamethylene Hexanaphthene	110-82-7	PID	300 ppm 1300 ppm	Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, respiratory system; drowsiness; dermatitis; narcosis, coma	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Dibenz(a,h)anthracene Dibenzo(a,h)anthracene Dibenzo[a,h]anthracene	53-70-3	PID	0.2 mg/m^3 80 mg/m^3 (Coal Pitch Tar)	Groundwater Soil	inhalation, absorption, ingestion, consumption	irritation to eyes, skin, respiratory, and digestion [potential occupational carcinogen]	Eyes: Irrigate immediately Skin: Soap wash promptly. Breath: Respiratory support PID Swallow: Medical attention immediately
1.3.1 – 1.3.13	Dibenzofuran	132-64-9	None	NA NA	Soil	inhalation, absorption	irritation to eyes, and skin	Eyes: Irrigate immediately Skin: Soap wash promptly.
1.3.1 – 1.3.13	Dibutyl phthalate Di-n-butyl phthalate Butyl phthalate n-Butyl phthalate 1,2-Benzenedicarboxylic acid dibutyl ester o-Benzenedicarboxylic acid dibutyl ester DBP Palatinol C, Elaol Dibutyl-1,2-benzene-dicarboxylate Di-n-butylphthalate	84-74-2	None	5 mg/m^3 4000 mg/m^3	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, upper respiratory system, stomach	Eye: Irrigate immediately Skin: Wash regularly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Dichlorodifluoromethane Difluorodichloromethane, Fluorocarbon 12 Freon 12 Freon® 12 Genetron® 12 Halon® 122 Propellant 12 Refrigerant 12 Dichlorodifluromethane	75-71-8	None	1000 pp, 15,000 ppm	Groundwater Soil Vapor	inhalation, skin and/or eye contact (liquid)	dizziness, tremor, asphyxia, unconsciousness, cardiac arrhythmias, cardiac arrest; liquid: frostbite	Eye: Frostbite Skin: Frostbite Breathing: Respiratory support
1.3.1 – 1.3.13	Diesel Fuel automotive diesel fuel oil No. 2 distillate diesoline diesel oil diesel oil light diesel oil No. 1-D summer diesel	68334-30-5	PID	NA NA	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; burning sensation in chest; headache, nausea, lassitude (weakness, exhaustion), restlessness, incoordination, confusion, drowsiness; vomiting, diarrhea; dermatitis; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Diethyl phthalate DEP Diethyl ester of phthalic acid Ethyl phthalate Diethylphthalate	84-66-2	PID	NA NA	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	irritation eyes, skin, nose, throat; headache, dizziness, nausea; lacrimation (discharge of tears); possible polyneuropathy, vestibular dysfunc; pain, numb, lassitude (weakness, exhaustion), spasms in arms & legs; In Animals: reproductive effects	Eye: Irrigate immediately Skin: Wash regularly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Ethanol Absolute alcohol Alcohol cologne spirit drinking alcohol ethane monoxide ethylic alcohol EtOH ethyl alcohol ethyl hydrate ethyl hydroxide ethylol grain alcohol hydroxyethane methylcarbinol	64-17-5	PID	1000 ppm 3300 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose; headache, drowsiness, lassitude (weakness, exhaustion), narcosis; cough; liver damage; anemia; reproductive, teratogenic effects	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Fresh air Swallow: Medical attention immediately
1.3.1 – 1.3.13	Ethyl benzene Ethylbenzene Ethylbenzol Phenylethane	100-41-4	PID	435 mg/m^3 3,472 mg/m^3	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; headache; dermatitis; narcosis, coma	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Fluoranthene Benzo(j,k)fluorene	206-44-0	PID	0.2 mg/m^3 80 mg/m^3 (Coal Pitch Tar)	Groundwater Soil	inhalation, skin or eye contact, ingestion	irritation to eyes and skin, respiratory irritation(dizziness, weakness, fatigue, nausea, headache)	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Fluorene	86-73-7	PID	0.2 mg/m^3 80 mg/m^3 (Coal Pitch Tar)	Soil	inhalation, skin or eye contact, ingestion	irritation to eyes and skin, respiratory irritation(dizziness, weakness, fatigue, nausea, headache)	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attenti
1.3.1 – 1.3.13	Fuel Oil No. 2	68476-30-2	PID	NA NA	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; burning sensation in chest; headache, nausea, lassitude (weakness, exhaustion), restlessness, incoordination, confusion, drowsiness; vomiting, diarrhea; dermatitis; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Gasoline	8006-61-9	PID	NA NA	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; dermatitis; headache, lassitude (weakness, exhaustion), blurred vision, dizziness, slurred speech, confusion, convulsions; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Helium	7440-59-7	Helium Detector	NA NA	NA	inhalation	dizziness, headache, and nausea	Breathing: Respiratory support

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Heptane n-Heptane	142-82-5	PID	500 ppm 750 ppm	Goundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	dizziness, stupor, incoordination; loss of appetite, nausea; dermatitis; chemical pneumonitis (aspiration liquid); unconsciousness	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Hexavalent Chromium Chromium VI Chromium, Hexavalent	18540-29-9	None	1.0 mg/m^3 250 mg/m^3	Groundwater Soil	inhalation absorption ingestion	irritation to eye, skin, and respiratory	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Indeno(1,2,3-cd)pyrene Indeno(1,2,3-c,d)Pyrene Indeno[1,2,3-cd]Pyrene	193-39-5	None	0.2 mg/m^3 80 mg/m^3 (Coal Pitch Tar)	Groundwater Soil	inhalation, absorption, ingestion, consumption	irritation to eyes, skin, respiratory, and digestion [potential occupational carcinogen]	Eyes: Irrigate immediately Skin: Soap wash promptly. Breath: Respiratory support Swallow: Medical attention immediately, wash mouth with water
1.3.1 – 1.3.13	Iron	7439-89-6	None	10 mg/m^3 NA	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; abdominal pain, diarrhea, vomiting	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Isopropyl alcohol Iso-Propyl Alcohol Carbinol IPA Isopropanol 2-Propanol sec-Propyl alcohol Rubbing alcohol Isopropylalcohol	67-63-0	PID	400 ppm 2000 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, nose, throat; drowsiness, dizziness, headache; dry cracking skin; in animals: narcosis	Eye: Irrigate immediately Skin: Water flush Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Lead	7439-92-1	None	0.050 mg/m^3 100 mg/m^3	Groundwater Soil	inhalation, ingestion, skin and/or eye contact	lassitude (weakness, exhaustion), insomnia; facial pallor; anorexia, weight loss, malnutrition; constipation, abdominal pain, colic; anemia; gingival lead line; tremor; paralysis wrist, ankles; encephalopathy; kidney disease; irritation to the eyes; hypertension	Eye: Irrigate immediately Skin: Soap flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Magnesium	7439-95-4	None	15 mg/m^3 NA	Soil	inhalation, skin and/or eye contact	irritation to the eyes, skin, respiratory system; cough	Eye: Irrigate immediately Breathing: Fresh air
1.3.1 – 1.3.13	Manganese	7439-96-5	None	5 mg/m^3 500 mg/m^3	Groundwater Soil	inhalation, ingestion	aerosol is irritating to the respiratory tract	Eye: Irrigate immediately Skin: Soap flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	m-Cresol meta-Cresol 3-Cresol m-Cresylic acid 1-Hydroxy-3-methylbenzene 3-Hydroxytoluene 3-Methylphenol	108-39-4	PID	5 ppm 250 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; central nervous system effects: confusion, depression, resp failure; dyspnea (breathing difficulty), irreg rapid resp, weak pulse; eye, skin burns; dermatitis; lung, liver, kidney, pancreas damage	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Mercury	7439-97-6	None	0.1 mg/m^3 10 mg/m^3	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin; cough, chest pain, dyspnea (breathing difficulty), bronchitis, pneumonitis; tremor, insomnia, irritability, headache, lassitude (weakness, exhaustion); stomatitis, salivation; gastrointestinal disturbance, anorexia, weight loss; proteinuria	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Methoxychlor 4,4′-Methoxychlor p,p'-Dimethoxydiphenyltrichloroethane DMDT Methoxy-DDT 2,2-bis(p-Methoxyphenyl)-1,1,1-trichloroethane 1,1,1-Trichloro-2,2-bis-(p-methoxyphenyl)ethane	72-43-5	None	15 mg/m^3 5000 mg/m^3	Groundwater Soil Vapor	inhalation, ingestion	fasciculation, trembling, convulsions; kidney, liver damage; [potential occupational carcinogen]	Skin: Soap wash Breathing: Fresh air Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Methyl Chloride Chloromethane Monochloromethane Refrigerant-40 R-40	74-87-3	NA	100 ppm 2000 ppm	Groundwater Soil	inhalation, skin and/or eye contact	dizziness, nausea, vomiting; visual disturbance, stagger, slurred speech, convulsions, coma; liver, kidney damage; liquid: frostbite; reproductive, teratogenic effects; [potential occupational carcinogen]	Eye: Frostbite Skin: Frostbite Breathing: Respiratory support
1.3.1 – 1.3.13	Methyl *tert*-butyl ether MTBE Methyl tertiary-butyl ether Methyl t-butyl ether tert-Butyl methyl ether tBME tert-BuOMe Methyl tert butyl ether	1634-04-4	PID	NA NA	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; burning sensation in chest; headache, nausea, lassitude (weakness, exhaustion), restlessness, incoordination, confusion, drowsiness; vomiting, diarrhea; dermatitis; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Methylene Chloride Dichloromethane Methylene dichloride	75-09-2	PID	25 ppm 2300 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin; lassitude (weakness, exhaustion), drowsiness, dizziness; numb, tingle limbs; nausea; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	m-Xylenes 1,3-Dimethylbenzene m-Xylol Metaxylene	108-38-3 179601-23-1	PID	100 ppm 900 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal vacuolization; nausea, vomiting, abdominal pain; dermatitis	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Naphthalene Naphthalin Tar camphor White tar	91-20-3	PID	50 mg/m^3 250 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes; headache, confusion, excitement, malaise (vague feeling of discomfort); nausea, vomiting, abdominal pain; irritation bladder; profuse sweating; hematuria (blood in the urine); dermatitis, optical neuritis	Eye: Irrigate immediately Skin: Molten flush immediately/solid-liquid soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	n-Butylbenzene Butylbenzene 1-phenylbutane	104-51-8	PID	NA NA	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin; dry nose, throat; headache; low blood pressure, tachycardia, abnormal cardiovascular system stress; central nervous system, hematopoietic depression; metallic taste; liver, kidney injury	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	n-Hexane Hexane, Hexyl hydride, normal-Hexane	110-54-3	PID	500 ppm 1100 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, nose; nausea, headache; peripheral neuropathy: numb extremities, muscle weak; dermatitis; dizziness; chemical pneumonitis (aspiration liquid)	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Nickel	7440-02-0	None	NA 10 mg/m^3	Groundwater Soil	ion, ingestion, skin and/or eye contact	sensitization dermatitis, allergic asthma, pneumonitis; [potential occupational carcinogen]	Skin: Water flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Non-Flammable Gas Mixture CALGAS (Equipment Calibration Gas : Oxygen Methane Hydrogen Sulfide Carbon Monoxide Nitrogen	 7782-44-7 74-82-8 7783-08-4 830-08-0 7727-37-9	Multi-Gas PID	 NA/NA NA/NA 10/100 ppm 50/1200 ppm NA/NA	NA	inhalation	dizziness, headache, and nausea	Breathing: Respiratory support
1.3.1 – 1.3.13	Non-Flammable Gas Mixture CALGAS (Equipment Calibration Gas : Oxygen Isobutylene Nitrogen	 7782-44-7 115-11-7 7727-37-9	PID	 NA/NA NA/NA NA/NA	NA	inhalation	dizziness, headache, and nausea	Breathing: Respiratory support

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	n-Propylbenzene Isocumene Propylbenzene 1-Phenylpropane 1-Propylbenzene Phenylpropane Propylbenzene-n	103-65-1	PID	NA NA	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin; dry nose, throat; headache; low blood pressure, tachycardia, abnormal cardiovascular system stress; central nervous system, hematopoietic depression; metallic taste; liver, kidney injury	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	o-Cresol ortho-Cresol 2-Cresol o-Cresylic acid 1-Hydroxy-2-methylbenzene 2-Hydroxytoluene 2-Methyl phenol 2-Methylphenol	95-48-7	PID	5 ppm 250 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; central nervous system effects: confusion, depression, resp failure; dyspnea (breathing difficulty), irreg rapid resp, weak pulse; eye, skin burns; dermatitis; lung, liver, kidney, pancreas damage	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediatelyethylphhhhhhhhhh
1.3.1 – 1.3.13	o-Xylenes 1,2-Dimethylbenzene ortho-Xylene o-Xylol	95-47-6 179601-23-1	PID	100 ppm 900 ppm	Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal vacuolization; nausea, vomiting, abdominal pain; dermatitis	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	p-Cresol para-Cresol 4-Cresol p-Cresylic acid 1-Hydroxy-4-methylbenzene 4-Hydroxytoluene 4-Methylphenol	106-44-5	PID	5 ppm 250 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; central nervous system effects: confusion, depression, resp failure; dyspnea (breathing difficulty), irreg rapid resp, weak pulse; eye, skin burns; dermatitis; lung, liver, kidney, pancreas damage	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	p-Diethylbenzene 1,4-Diethylbenzene 1,4-Diethyl benzene	105-05-5	PID	None None	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, respiratory system; skin burns; in animals: central nervous system depression	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	p-Ethyltoluene 4-Ethyltoluene 1-ethyl-4-methyl-benzene 1-methyl-4-ethylbenzene	622-96-8	NA	NA NA	Soil	ingestion, skin and/or eye contact	irritation to the eyes, skin, mucous membrane; headache; dermatitis; narcosis, coma	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Phenanthrene	85-01-8	PID	0.2 mg/m^3 80 mg/m^3 (Coal Pitch Tar)	Groundwater Soil	inhalation, skin or eye contact, ingestion	irritation to eyes and skin, respiratory irritation(dizziness, weakness, fatigue, nausea, headache)	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attention immediately
1.3.1 – 1.3.13	Phenol Carbolic acid Hydroxybenzene, Monohydroxybenzene Phenyl alcohol Phenyl hydroxide	108-95-2	PID	5 ppm 250 ppm	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, nose, throat; anorexia, weight loss; lassitude (weakness, exhaustion), muscle ache, pain; dark urine, skin burns; dermatitis; tremor, convulsions, twitching	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Potassium	7440-09-7	None	NA NA	Soil	inhalation, skin absorption, ingestion, skin and/or eye contact inhalation, ingestion, skin and/or eye contact	eye: Causes eye burns. Skin: Causes skin burns. Reacts with moisture in the skin to form potassium hydroxide and hydrogen with much heat. ingestion: Causes gastrointestinal tract burns. inhalation: May cause irritation of the respiratory tract with burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema. Causes chemical burns to the respiratory tract. inhalation may be fatal as a result of spasm, inflammation, edema of the larynx and bronchi, chemical pneumonitis and pulmonary edema.	Eyes: Get medical aid immediately Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Ingestion: If victim is conscious and alert, give 2-4 full cups of milk or water. Get medical aid immediately. inhalation: Get medical aid immediately.
1.3.1 – 1.3.13	p-Xylenes 1,4-Dimethylbenzene para-Xylene p-Xylol	106-42-3	PID	100 ppm 900 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal vacuolization; nausea, vomiting, abdominal pain; dermatitis	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Pyrene benzo[def]phenanthrene	129-00-0	PID	0.2 mg/m^3 80 mg/m^3 (Coal Pitch Tar)	Groundwater Soil	inhalation, skin or eye contact, ingestion	irritation to eyes and skin, respiratory irritation(dizziness, weakness, fatigue, nausea, headache)	Eye: Irrigate immediately, refer to medical attention Skin: Soap wash immediately Breathing: move to fresh air Swallow: Medical attention immediately
1.3.1 – 1.3.13	sec-Butylbenzene 2-phenylbutane	135-98-8	PID	10 ppm 100 ppm	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, nose, throat; inhalation: nausea or vomiting	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Selenium	7782-49-2	None	1 mg/m^3 0.2 mg/m^3	Soil	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; visual disturbance; headache; chills, fever; dyspnea (breathing difficulty), bronchitis; metallic taste, garlic breath, gastrointestinal disturbance; dermatitis; eye, skin burns; in animals: anemia; liver necrosis, cirrhosis; kidney, spleen damage	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Silver	7440-22-4	None	0.01mg/m^3 10 mg/m^3	Soil	inhalation, ingestion, skin and/or eye contact	blue-gray eyes, nasal septum, throat, skin; irritation, ulceration skin; gastrointestinal disturbance	Eye: Irrigate immediately Skin: Water flush Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Sodium	7440-23-5	None	NA NA	Groundwater Soil	ion, ingestion, skin and/or eye contact	sensitization dermatitis, allergic asthma, pneumonitis; [potential occupational carcinogen]	Skin: Water flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Styrene Ethenyl benzene Phenylethylene Styrene monomer Styrol Vinyl benzene	100-42-5	PID	100 ppm 700 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, nose, respiratory system; headache, lassitude (weakness, exhaustion), dizziness, confusion, malaise (vague feeling of discomfort), drowsiness, unsteady gait; narcosis; defatting dermatitis; possible liver injury; reproductive effects	Eye: Irrigate immediately Skin: Water flush Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Tert-Butyl Alcohol Tertiary Butyl Alcohol Tert-Butanol Butyl alcohol 2-Methyl-2-propanol Trimethyl carbinol TBA	75-65-0	PID	100 ppm 1600 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; drowsiness, narcosis	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	tert-Butylbenzene *t*-Butylbenzene 2-Methyl-2-phenylpropane Pseudobutylbenzene	98-06-6	PID	10 ppm NA	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	eye, skin irritation; dry nose, throat; headaches; low blood pressure, tachycardia; abnormal cardiovascular system; central nervous system depression; hematopoietic depression	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Tetrachloroethylene Perchlorethylene Perchloroethylene PCE Perk Tetrachlorethylene Tetrachloroethene	127-18-4	PID	100 ppm 150 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat, respiratory system; nausea; flush face, neck; dizziness, incoordination; headache, drowsiness; skin erythema (skin redness); liver damage; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Tetrahydrofuran Diethylene oxide 1,4-Epoxybutane Tetramethylene oxide THF	109-99-9	PID	200 ppm 2000 ppm	Groundwater Soil Vapor	inhalation, skin and/or eye contact, ingestion	irritation to the eyes, upper respiratory system; nausea, dizziness, headache, central nervous system depression	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immedi

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Thallium	7440-28-0	None	0.1 mg/m^3 15 mg/m^3	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	nausea, diarrhea, abdominal pain, vomiting; ptosis, strabismus; peri neuritis, tremor; retrosternal (occurring behind the sternum) tightness, chest pain, pulmonary edema; convulsions, chorea, psychosis; liver, kidney damage; alopecia; paresthesia legs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Toluene Methyl benzene Methyl benzol Phenyl methane Toluol	108-88-3	PID	200 ppm 500 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, nose; lassitude (weakness, exhaustion), confusion, euphoria, dizziness, headache; dilated pupils, lacrimation (discharge of tears); anxiety, muscle fatigue, paresthesia; dermatitis	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Total PCBs Chlorodiphenyl (42% chlorine) Aroclor® 1242 PCB Polychlorinated biphenyl	53469-21-9	None	0.5 mg/m^3 5 mg/m^3	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, chloracne	Eye: Irrigate immediately Skin: Soap wash immediately Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Total Xylenes Dimethylbenzene Xylol	1330-20-7	PID	100 ppm 900 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal vacuolization; nausea, vomiting, abdominal pain; dermatitis	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Trans-1,2-Dichloroethene trans-1,2-Dichloroethylene tDEC trans-Acetylene dichloride	156-60-5	PID	200 ppm 4000 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	Irritant to eyes, skin, mucous membranes and respiratory system. May be harmful by ingestion, skin absorption and inhalation	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Trichloroethylene Trichloroetheneylenes Ethylene trichloride TCE Trichloroethene Trilene	79-01-6	PID	100 ppm 1000 ppm	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin; headache, visual disturbance, lassitude (weakness, exhaustion), dizziness, tremor, drowsiness, nausea, vomiting; dermatitis; cardiac arrhythmias, paresthesia; liver injury; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap wash promptly Breathing: Respiratory support Swallow: Medical attention immediately

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Trichlorofluoromethane Fluorotrichloromethane Freon® 11 Monofluorotrichloromethane Refrigerant 11 Trichloromonofluoromethane Freon 11	75-69-4	PID	1000 ppm 2000 ppm	Groundwater Soil Vapor	inhalation, ingestion, skin and/or eye contact	incoordination, tremor; dermatitis; cardiac arrhythmias, cardiac arrest; asphyxia; liquid: frostbite	Eye: Irrigate immediately Skin: Water flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Trivalent Chromium Chromium III Chromium, Trivalent	NA	None	1.0 mg/m^3 250 mg/m^3	Groundwater Soil	inhalation absorption ingestion	irritation to eye, skin, and respiratory	Eye: Irrigate immediately Skin: Soap wash Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Vanadium	7440-62-2	None	0.1 mg/m3 15 mg/m3	Groundwater Soil	inhalation, skin absorption, ingestion, skin and/or eye contact	nausea, diarrhea, abdominal pain, vomiting; ptosis, strabismus; peri neuritis, tremor; retrosternal (occurring behind the sternum) tightness, chest pain, pulmonary edema; convulsions, chorea, psychosis; liver, kidney damage; alopecia; paresthesia legs	Eye: Irrigate immediately Skin: Water flush promptly Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Vinyl Chloride Chloroethene Chloroethylen Ethylene monochloride Monochloroethene Monochloroethylene VC Vinyl chloride monomer (VCM)	75-01-4	PID	1 ppm NA	Groundwater Soil Vapor	inhalation, skin and/or eye contact (liquid)	lassitude (weakness, exhaustion); abdominal pain, gastrointestinal bleeding; enlarged liver; pallor or cyanosis of extremities; liquid: frostbite; [potential occupational carcinogen]	Eye: Frostbite Skin: Frostbite Breathing: Respiratory support

Task	Contaminant	CAS Number	Monitoring Device	PEL/ IDLH	Source of Concentration on Site	Route of Exposure	Symptoms	First Aid
1.3.1 – 1.3.13	Vinylidene chloride 1,1-DCE 1,1-Dichloroethene 1,1-Dichloroethylene VDC Vinylidene chloride monomer Vinylidene dichloride	75-35-4	PID	NA NA	Groundwater Soil Vapor	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation to the eyes, skin, throat; dizziness, headache, nausea, dyspnea (breathing difficulty); liver, kidney disturbance; pneumonitis; [potential occupational carcinogen]	Eye: Irrigate immediately Skin: Soap flush immediately Breathing: Respiratory support Swallow: Medical attention immediately
1.3.1 – 1.3.13	Zinc	7440-62-2	None	15 mg/m^3 500 mg/m^3	Groundwater Soil	inhalation	chills, muscle ache, nausea, fever, dry throat, cough; lassitude (weakness, exhaustion); metallic taste; headache; blurred vision; low back pain; vomiting; malaise (vague feeling of discomfort); chest tightness; dyspnea (breathing difficulty), rales, decreased pulmonary function	Breathing: Respiratory support`

EXPLANATION OF ABBREVIATIONS

PID = Photoionization Detector
PEL = Permissible Exposure Limit (8-hour Time Weighted Average)
IDLH = Immediately Dangerous to Life and Health
ppm = part per million
mg/m^3 = milligrams per cubic meter

TABLE 3
Summary of Monitoring Equipment

Instrument	Operation Parameters
Photoionization Detector (PID)	**Hazard Monitored:** Many organic and some inorganic gases and vapors. **Application:** Detects total concentration of many organic and some inorganic gases and vapors. Some identification of compounds is possible if more than one probe is measured. **Detection Method:** Ionizes molecules using UV radiation; produces a current that is proportional to the number of ions. **General Care/Maintenance:** Recharge or replace battery. Regularly clean lamp window. Regularly clean and maintain the instrument and accessories. **Typical Operating Time:** 10 hours. 5 hours with strip chart recorder.
Oxygen Meter	**Hazard Monitored:** Oxygen (O_2). **Application:** Measures the percentage of O_2 in the air. **Detection Method:** Uses an electrochemical sensor to measure the partial pressure of O_2 in the air, and converts the reading to O_2 concentration. **General Care/Maintenance:** Replace detector cell according to manufacturer's recommendations. Recharge or replace batteries prior to explanation of the specified interval. If the ambient air is less than 0.5% C O_2, replace the detector cell frequently. **Typical Operating Time:** 8 – 12 hours.
Additional equipment (if needed, based on site conditions)	
Combustible Gas Indicator (CGI)	**Hazard Monitored:** Combustible gases and vapors. **Application:** Measures the concentration of combustible gas or vapor. **Detection Method:** A filament, usually made of platinum, is heated by burning the combustible gas or vapor. The increase in heat is measured. Gases and vapors are ionized in a flame. A current is produced in proportion to the number of carbon atoms present. **General Care/Maintenance:** Recharge or replace battery. Calibrate immediately before use. **Typical Operating Time:** Can be used for as long as the battery lasts, or for the recommended interval between calibrations, whichever is less.
Flame Ionization Detector (FID) with Gas Chromatography Option *(i.e., Foxboro Organic Vapor Analyzer (OVA))*	**Hazard Monitored:** Many organic gases and vapors (approved areas only). **Application:** In survey mode, detects the concentration of many organic gases and vapors. In gas chromatography (GC) mode, identifies and measures specific compounds. In survey mode, all the organic compounds are ionized and detected at the same time. In GC mode, volatile species are separated. **General Care/Maintenance:** Recharge or replace battery. Monitor fuel and/or combustion air supply gauges. Perform routine maintenance as described in the manual. Check for leaks. **Typical Operating Time:** 8 hours; 3 hours with strip chart recorder.
Potable Infrared (IR) Spectrophotometer	**Hazard Monitored:** Many gases and vapors. **Application:** Measures concentration of many gases and vapors in air. Designed to quantify one or two component mixtures. **Detection Method:** Passes different frequencies of IR through the sample. The frequencies absorbed are specific for each compound. **General Care/Maintenance:** As specified by the manufacturer.

Instrument	Operation Parameters
Direct Reading Colorimetric Indicator Tube	**Hazard Monitored:** Specific gas and vapors. **Application:** Measures concentration of specific gases and vapors. **Detection Method:** The compound reacts with the indicator chemical in the tube, producing a stain whose length or color change is proportional to the compound's concentration. **General Care/Maintenance:** Do not use a previously opened tube even if the indicator chemical is not stained. Check pump for leaks before and after use. Refrigerate before use to maintain a shelf life of about 2 years. Check expiration dates of tubes. Calibrate pump volume at least quarterly. Avoid rough handling which may cause channeling.
Aerosol Monitor	**Hazard Monitored:** Airborne particulate (dust, mist, fume) concentrations **Application:** Measures total concentration of semi-volatile organic compounds, PCBs, and metals. **Detection Method:** Based on light-scattering properties of particulate matter. Using an internal pump, air sample is drawn into the sensing volume where near infrared light scattering is used to detect particles. **General Care/Maintenance:** As specified by the mfr. Also, the instrument must be calibrated with particulates of a size and refractive index similar to those to be measured in the ambient air.
Monitox	**Hazard Monitored:** Gases and vapors. **Application:** Measures specific gases and vapors. **Detection Method:** Electrochemical sensor relatively specific for the chemical species in question. **General Care/Maintenance:** Moisten sponge before use; check the function switch; change the battery when needed.
Gamma Radiation Survey Instrument	**Hazard Monitored:** Gamma Radiation. **Application:** Environmental radiation monitor. **Detection Method:** Scintillation detector. **General Care/Maintenance:** Must be calibrated annually at a specialized facility. **Typical Operating Time:** Can be used for as long as the battery lasts, or for the recommended interval between calibrations, whichever is less.

TABLE 4
INSTRUMENTATION ACTION LEVELS

Photoionization Detector Action Levels	**Action Required**
Background to 5 ppm[1]	No Respirator, no further action
>5ppm but </= 15 ppm at the parameter of the work area	Work temporarily halted and monitoring continues If instantaneous readings decrease below 5 ppm above background, work activities will resume with continued monitoring
>5ppm but </= 25 ppm at the downwind parameter of the hot zone	Work activities will be halted Source of vapors identified Corrective actions taken to abate emissions Continued monitoring Workers will don appropriate respirators and work can resume if vapor levels 200 feet downwind or the hot zone or half the distance to the nearest potential receptor or residential/commercial structure, Work can continue when vapor levels be whichever is less – but in no case less than 20 feet, is below 5 ppm above background for the 15-minute average
>25ppm at the perimeter of the hot zone	Activities will shut down

Particulate Monitoring Action Levels	**Action Required**
Background to 100 micrograms per cubic meter ($\mu g/m^3$)[2] , no dust observed	No further action
Background to 100 $\mu g/m^3$, dust observed leaving the work area	Dust suppression must be employed
100 to 150 $\mu g/m^3$ at the downwind perimeter of the hot zone	Work activities will be halted Source of dust identified Dust suppression activities initiated Corrective actions taken to abate emissions Continued monitoring Workers will don appropriate respirators Work can resume provided that dust suppression measures and other controls are successful in reducing the downwind PM10 concentration to within 150 $\mu g/m^3$ of the upwind level and in preventing visible dust migration.
>150 $\mu g/m^3$ at the perimeter of the hot zone	Activities will shut down

[1] VOC concentrations are 15-minute averages above site background (upwind parameter)
[2] Particulate concentrations are 15 minute averages above site background (upwind parameter)

TABLE 5
EMERGENCY NOTIFICATION LIST

ORGANIZATION	CONTACT	TELEPHONE
Local Police Department		911
Local Fire Department		911
Ambulance/Rescue Squad		911
Hospital	Interfaith Medical Center	911 or 718-613-4000
Langan Incident Hotline		800-952-6426 ex 4699
Medical Treatment Hotline	Wyckoff Heights Medical Center	911 or 718-963-7272
Langan Environmental Project Manager	Paul McMahon	914-433-1157 (cell)
Langan Health and Safety Manager (HSM)	Tony Moffa	914-803-7130 (cell)
Langan Health & Safety Officer (HSO)	William Bohrer	410-984-3068 (cell)
Langan Field Team Leader (FTL)	To Be Determined	
Client's Representative	Brett Richer	415-733-9574
National Response Center (NRC)		800-424-8802
Chemical Transportation Emergency Center (Chemtrec)		800-424-9300
Center for Disease Control (CDC)		404-639-3534
EPA (RCRA Superfund Hotline)		800-424-9346
TSCA Hotline		202-554-1404
Poison Control Center		800-222-1222

Immediately following an injury, unless immediate emergency medical treatment is required, the injured employee must contact WorkCare - Incident Intervention® at 888-449-7787.

For all other incidents or near misses, unless emergency response is required, either the employee or a coworker must contact the Langan Incident Hotline at 973-560-4699.

TABLE 6
SUGGESTED FREQUENCY OF PHYSIOLOGICAL MONITORING FOR FIT AND ACCLIMATED WORKERS[A]

Adjusted Temperature[b]	Normal Work Ensemble[c]	Impermeable Ensemble
90°F or above (32.2°C) or above	After each 45 min. of work	After each 15 min. of work
87.5°F (30.8°-32.2°C)	After each 60 min. of work	After each 30 min. of work
82.5°-87.5°F (28.1°-30.8°C)	After each 90 min. of work	After each 60 min. of work
77.5°-82.5°F (25.3°-28.1°C)	After each 120 min. of work	After each 90 min. of work
72.5°-77.5°F (22.5°-25.3°C)	After each 150 min. of work	After each 120 min. of work

a For work levels of 250 kilocalories/hour.

b Calculate the adjusted air temperature (ta adj) by using this equation: ta adj ^{o}F = ta ^{o}F + (13 x % sunshine). Measure air temperature (ta) with a standard mercury-in-glass thermometer, with the bulb shielded from radiant heat. Estimate percent sunshine by judging what percent time the sun is not covered by clouds that are thick enough to produce a shadow. (100 percent sunshine = no cloud cover and a sharp, distinct shadow; 0 percent sunshine = no shadows.)

c A normal work ensemble consists of cotton coveralls or other cotton clothing with long sleeves and pants.

TABLE 7

HEAT INDEX

	ENVIRONMENTAL TEMPERATURE (Fahrenheit)										
	70	**75**	**80**	**85**	**90**	**95**	**100**	**105**	**110**	**115**	**120**
RELATIVE HUMIDITY	**APPARENT TEMPERATURE***										
0%	64	69	73	78	83	87	91	95	99	103	107
10%	65	70	75	80	85	90	95	100	105	111	116
20%	66	72	77	82	87	93	99	105	112	120	**130**
30%	67	73	78	84	90	96	104	113	123	**135**	**148**
40%	68	74	79	86	93	101	110	123	**137**	**151**	
50%	69	75	81	88	96	107	120	**135**	**150**		
60%	70	76	82	90	100	114	**132**	**149**			
70%	70	77	85	93	106	124	**144**				
80%	71	78	86	97	113	**136**					
90%	71	79	88	102	122						
100%	72	80	91	108							

*Combined Index of Heat and Humidity...what it "feels like" to the body
Source: National Oceanic and Atmospheric Administration

How to use Heat Index:
1. Across top locate Environmental Temperature
2. Down left side locate Relative Humidity
3. Follow across and down to find Apparent Temperature
4. Determine Heat Stress Risk on chart at right

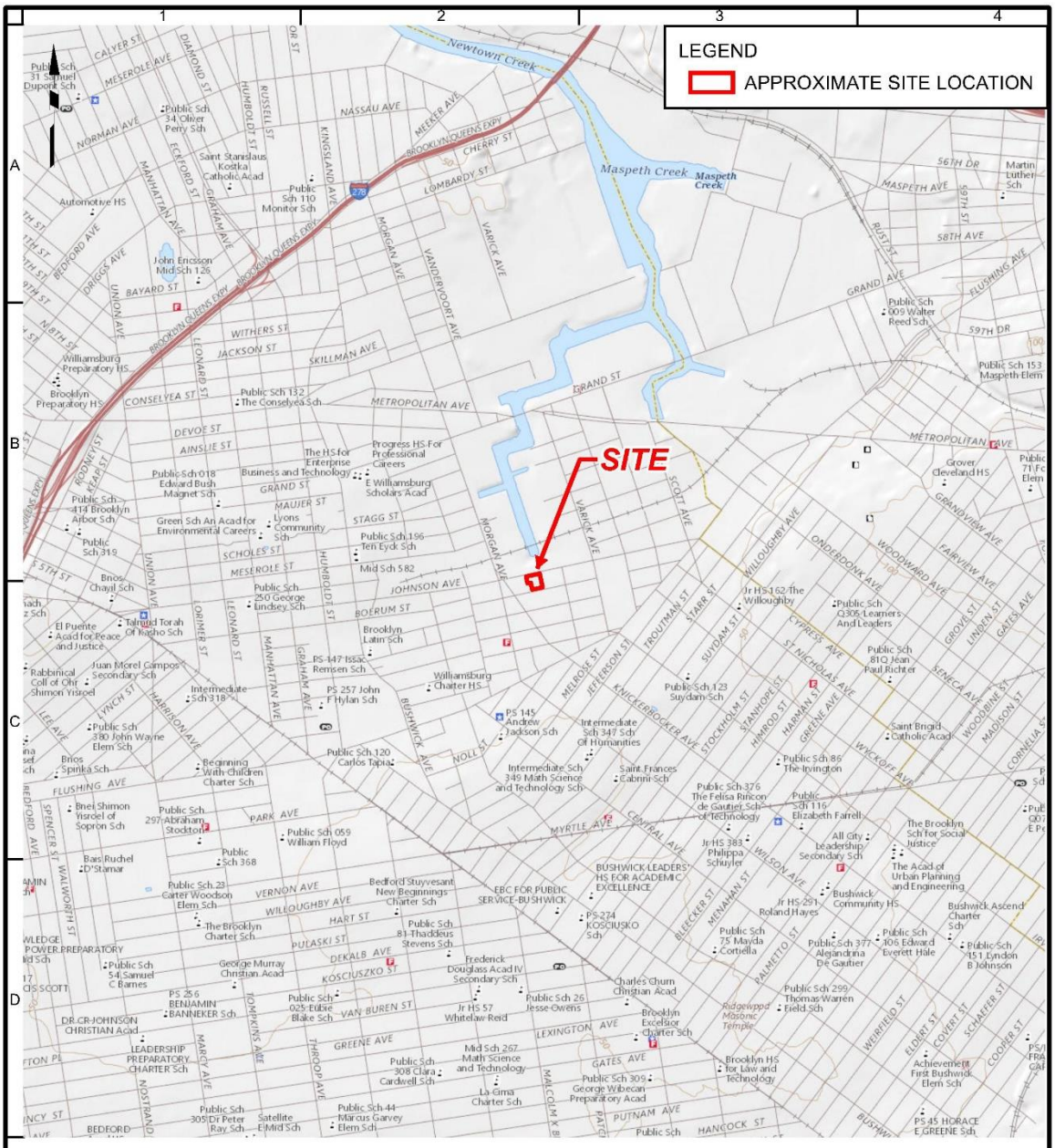
Note: Exposure to full sunshine can increase Heat Index values by up to 15 degrees F.

Apparent Temperature	**Heat Stress Risk with Physical Activity and/or Prolonged Exposure**
90-105	Heat Cramps or Heat Exhaustion Possible
105-130	Heat Cramps or Heat Exhaustion Likely, Heat Stroke Possible
>130	Heatstroke Highly Likely

FIGURES

FIGURE 1

Site Location Map



NOTES:
1. BASEMAP ADAPTED FROM UNITED STATES GEOLOGICAL SURVEY (USGS) 7.5-MINUTE SERIES TOPOGRAPHICAL MAPS, BROOKLYN, NEW YORK, QUADRANGLE, DATED 2016.

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Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, D.P.C.
Langan International LLC
Collectively known as Langan

Project	450 JOHNSON AVENUE BLOCK No. 2992, LOT No. 17, 21, 55 BROOKLYN KINGS COUNTY NEW YORK
Figure Title	SITE LOCATION MAP
Project No.	170588001
Date	6/21/2019
Scale	1"=2,000'
Drawn By	AB
Submission Date	6/21/2019
Figure No.	1

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Path: \\langan.com\data\NYC\data0\170588001\Project Data\ArcGIS\APRX\170588001.aprx Date: 6/21/2019 User: abakhtin Time: 6:00 PM

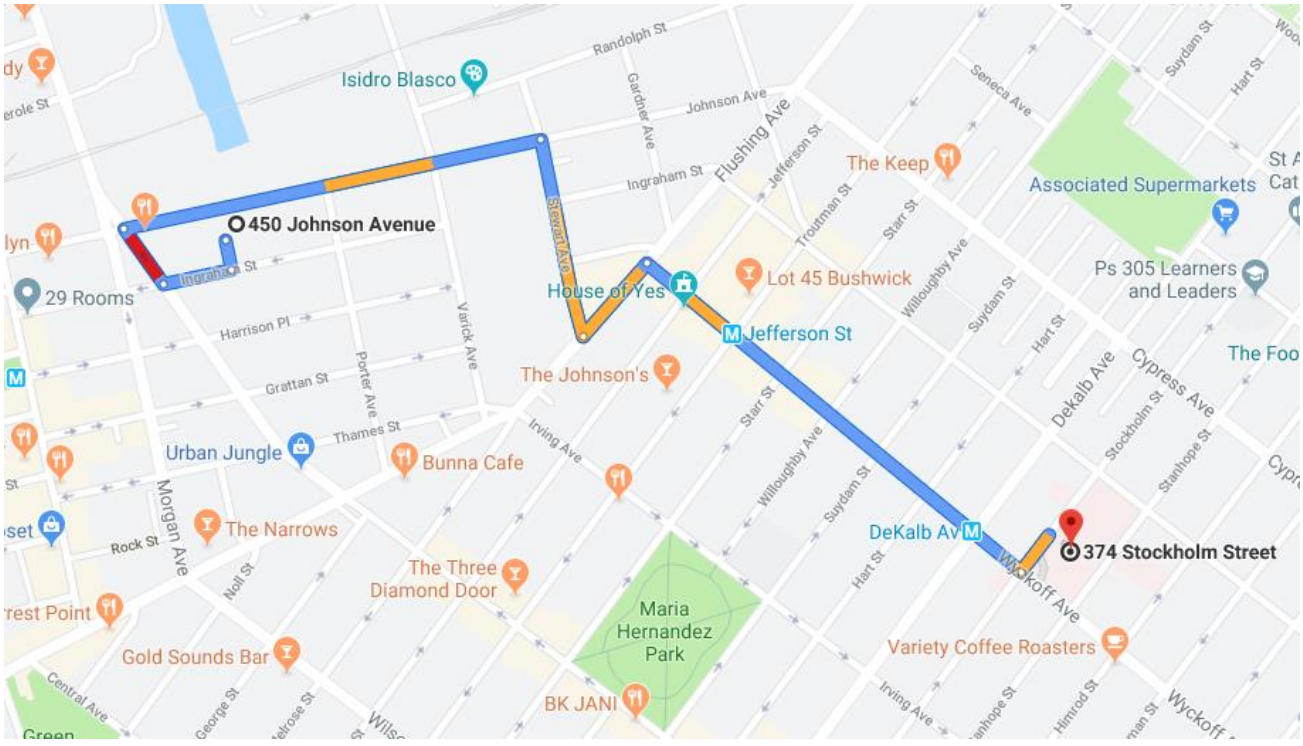
FIGURE 2
HOSPITAL ROUTE PLAN

Hospital Location: **Wyckoff Heights Medical Center**
374 Stockholm Street
Brooklyn, New York
718-920-9000

START: 450 Johnson Avenue, Brooklyn, New York

1. Head south toward Ingraham Street
2. Turn right onto Ingraham Street
3. Turn right at the 1st cross street onto Knickerbocker Avenue
4. Turn right at the 1st cross street onto Johnson Avenue
5. Turn right onto Stewart Avenue
6. Turn left onto Flushing Avenue
7. Turn right onto Wyckoff Avenue
8. Turn left onto Stockholm Street, destination will be on the right.

END: Wyckoff Heights Medical Center, 374 Stockholm Street, Brooklyn, NY



ATTACHMENT A

STANDING ORDERS

STANDING ORDERS

GENERAL

- No smoking, eating, or drinking in this work zone.
- Upon leaving the work zone, personnel will thoroughly wash their hands and face.
- Minimize contact with contaminated materials through proper planning of work areas and decontamination areas, and by following proper procedures. Do not place equipment on the ground. Do not sit on contaminated materials.
- No open flames in the work zone.
- Only properly trained and equipped personnel are permitted to work in potentially contaminated areas.
- Always use the appropriate level of PPE.
- Maintain close contact with your buddy in the work zone
- Contaminated material will be contained in the Exclusion Zone (EZ).
- Report any unusual conditions.
- Work areas will be kept clear and uncluttered. Debris and other slip, trip, and fall hazards will be removed as frequently as possible.
- The number of personnel and equipment in the work zone will be kept to an essential minimum.
- Be alert to the symptoms of fatigue and heat/cold stress, and their effects on the normal caution and judgment of personnel.
- Conflicting situations which may arise concerning safety requirements and working conditions must be addressed and resolved quickly by the site HSO.

TOOLS AND HEAVY EQUIPMENT

- Do not, under any circumstances, enter or ride in or on any backhoe bucket, materials hoist, or any other device not specifically designed to carrying passengers.
- Loose-fitting clothing or loose long hair is prohibited around moving machinery.
- Ensure that heavy equipment operators and all other personnel in the work zone are using the same hand signals to communicate.
- Drilling/excavating within 10 feet in any direction of overhead power lines is prohibited.
- The locations of all underground utilities must be identified and marked out prior to initiating any subsurface activities.
- Check to insure that the equipment operator has lowered all blades and buckets to the ground before shutting off the vehicle.
- If the equipment has an emergency stop device, have the operator show all personnel its location and how to activate it.
- Help the operator ensure adequate clearances when the equipment must negotiate in tight quarters; serve as a signalman to direct backing as necessary.
- Ensure that all heavy equipment that is used in the Exclusion Zone is kept in that zone until the job is done, and that such equipment is completely decontaminated before moving it into the clean area of the work zone.
- Samplers must not reach into or get near rotating equipment such as the drill rig. If personnel must work near any tools that could rotate, the equipment operator must completely shut down the rig prior to initiating such work. It may be necessary to use a remote sampling device.

ATTACHMENT B

DECONTAMINATION PROCEDURES

PERSONNEL DECONTAMINATION

LEVEL C DECONTAMINATION

Station 1:	Equipment Drop	1. Deposit equipment used on-site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths. Segregation at the drop reduces the probability of cross contamination. During hot weather operations, cool down stations may be set up within this area.
Station 2:	Outer Garment, Boots, and Gloves Wash and Rinse	2. Scrub outer boots, outer gloves and chemical-resistant splash suit with decon solution or detergent and water. Rinse off using copious amounts of water.
Station 3:	Outer Boot and Glove Removal	3. Remove outer boots and gloves. Deposit in container with plastic liner.
Station 4:	Canister or Mask Change	4. If worker leaves Exclusion Zone to change canister (or mask), this is the last step in the decontamination procedure. Worker's canister is exchanged, new outer gloves and boot covers donned, joints taped, and worker returns to duty.
Station 5:	Boot, Gloves and Outer Garment Removal	5. Boots, chemical-resistant splash suit, inner gloves removed and deposited in separate containers lined with plastic.
Station 6:	Face piece Removal	6. Face piece is removed (avoid touching face with fingers). Face piece deposited on plastic sheets.
Station 7:	Field Wash	7. Hands and face are thoroughly washed. Shower as soon as possible.

LEVEL D DECONTAMINATION

Station 1:	Equipment Drop	1. Deposit equipment used on-site (tools, sampling devices and containers, monitoring instruments, radios, clipboards, etc.) on plastic drop cloths. Segregation at the drop reduces the probability of cross contamination. During hot weather operations, cool down stations may be set up within this area.
Station 2:	Outer Garment, Boots, and Gloves Wash and Rinse	2. Scrub outer boots, outer gloves and chemical-resistant splash suit with decon solution or detergent and water. Rinse off using copious amounts of water.
Station 3:	Outer Boot and Glove Removal	3. Remove outer boots and gloves. Deposit in container with plastic liner.
Station 4:	Boot, Gloves and Outer Garment Removal	4. Boots, chemical-resistant splash suit, inner gloves removed and deposited in separate containers lined with plastic.
Station 5:	Field Wash	5. Hands and face are thoroughly washed. Shower as soon as possible.

EQUIPMENT DECONTAMINATION

GENERAL:

Equipment to be decontaminated during the project may include tools, monitoring equipment, respirators, sampling containers, laboratory equipment and drilling equipment.

All decontamination will be done by personnel in protective gear, appropriate for the level of decontamination, as determined by the site HSO. The decontamination work tasks will be split or rotated among support and work crews.

Depending on site conditions, backhoe and pumps may be decontaminated over a portable decontamination pad to contain wash water; or, wash water may be allowed to run off into a storm sewer system. Equipment needed may include a steam generator with high-pressure water, empty drums, screens, screen support structures, and shovels. Drums will be used to hold contaminated wash water pumped from the lined pit. These drums will be labeled as such.

Miscellaneous tools and equipment will be dropped into a plastic pail, tub, or other container. They will be brushed off and rinsed with a detergent solution, and finally rinsed with clean water.

MONITORING EQUIPMENT:

Monitoring equipment will be protected as much as possible from contamination by draping, masking, or otherwise covering as much of the instruments as possible with plastic without hindering the operation of the unit. The PID, HNu or OVA meter, for example, can be placed in a clear plastic bag, which allows reading of the scale and operation of knobs. The probes can be partially wrapped keeping the sensor tip and discharge port clear.

The contaminated equipment will be taken from the drop area and the protective coverings removed and disposed in the appropriate containers. Any dirt or obvious contamination will be brushed or wiped with a disposable paper wipe.

RESPIRATORS:

Respirators will be cleaned and disinfected after every use. Taken from the drop area, the masks (with the cartridges removed and disposed of with other used disposable gear) will be immersed in a cleaning solution and scrubbed gently with a soft brush, followed by a rinse in plain warm water, and then allowed to air dry. In the morning, new cartridges will be installed. Personnel will inspect their own masks for serviceability prior to donning them. And, once the mask is on, the wearer will check the respirator for leakage using the negative and positive pressure fit check techniques.

ATTACHMENT C

EMPLOYEE EXPOSURE/ INJURY INCIDENT REPORT

EMPLOYEE INCIDENT/INJURY REPORT
LANGAN ENGINEERING & ENVIRONMENTAL SERVICES

(Complete and return to Tony Moffa in the Doylestown Office)

Affected Employee Name: _____ Date: _____

Incident type: ☐ Injury ☐ Report Only/No Injury
☐ Near Miss ☐ Other: _____

EMPLOYEE INFORMATION (Person completing Form)

Employee Name: _____ Employee No: _____

Title: _____ Office Location: _____

Length of time employed or date of hire: _____

Mailing address: _____

_____

Sex: M ☐ F ☐ Birth date: _____

Business phone & extension: _____ Residence/cell phone: _____

ACCIDENT INFORMATION

Project: _____ Project #: _____

Date & time of incident: _____ Time work started & ended: _____

Site location: _____

Incident Type: Possible Exposure ☐ Exposure ☐ Physical Injury ☐

Names of person(s) who witnessed the incident:_____

Exact location incident occurred:

Describe work being done:_____

Describe what affected employee was doing prior to the incident occurring:

Describe in detail how the incident occurred:

Nature of the incident (List the parts of the body affected):

Person(s) to whom incident was reported (Time and Date):

List the names of other persons affected during this incident:

Possible causes of the incident (equipment, unsafe work practices, lack of PPE, etc.):

Weather conditions during incident:

MEDICAL CARE INFORMATION

Did affected employee receive medical care? Yes ☐ No ☐

If Yes, when and where was medical care received:

Provide name of facility (hospital, clinic, etc.):

Length of stay at the facility?

Did the employee miss any work time? Yes ☐ No ☐ Undetermined ☐

Date employee last worked: Date employee returned to work:

Has the employee returned to work? Yes ☐ No ☐

Does the employee have any work limitations or restrictions from the injury? : Yes ☐ No ☐

If Yes, please describe:

Did the exposure/injury result in permanent disability? Yes ☐ No ☐ Unknown ☐

If Yes, please describe:

HEALTH & SAFETY INFORMATION

Was the operation being conducted under an established site specific HEALTH AND SAFETY PLAN?
Yes ☐ No ☐ Not Applicable: ☐

Describe protective equipment and clothing used by the employee:

_____

_____

_____

Did any limitations in safety equipment or protective clothing contribute to or affect exposure / injury? If so, explain:

_____

_____

_____

_____

Employee Signature Date

_____

Langan Representative Date

ATTACHMENT D

CALIBRATION LOG

DATE:_____ **PROJECT:**_____

CALIBRATION LOG

Date & Time	Inst Type	Inst #	Media	Initial Reading	Span #	Calibrat. Reading	Performed By:

ATTACHMENT E

MATERIAL SAFETY DATA SHEETS

SAFETY DATA SHEETS

All Langan Field Personnel Completing This Work Plan Are To Have Real Time Accessibility To Material Safety Data Sheet (MSDs) or Safety Data Sheet (SDSs) Through Their Smart Phone.

The link is http://www.msds.com/
The login name is "drapehead"
The password is "2angan987"

If You Are Unable To Use the Smart Phone App, You Are To Bring Printed Copies of the MSDs/SDSs to the Site

SAFETY DATA SHEET

Version 4.10
Revision Date 01/28/2016
Print Date 02/18/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Biphenyl

Product Number : W312908
Brand : Aldrich
Index-No. : 601-042-00-8

CAS-No. : 92-52-4

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.

P273	Avoid release to the environment.
P280	Wear protective gloves/ eye protection/ face protection.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	$C_{12}H_{10}$
Molecular weight	:	154.21 g/mol
CAS-No.	:	92-52-4
EC-No.	:	202-163-5
Index-No.	:	601-042-00-8

Hazardous components

Component	Classification	Concentration
Biphenyl		
	Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3; Aquatic Acute 1; Aquatic Chronic 1; H315, H319, H335, H410	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

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

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): Non Combustible Solids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Biphenyl	92-52-4	TWA	0.2 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Pulmonary function		
		TWA	0.200000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Pulmonary function		

		TWA	0.2 ppm 1 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	0.200000 ppm 1.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		
		TWA	0.2 ppm 1 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		
		TWA	0.200000 ppm 1.000000 mg/m3	USA. NIOSH Recommended Exposure Limits

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: butyl-rubber
Minimum layer thickness: 0.3 mm
Break through time: 480 min
Material tested:Butoject® (KCL 897 / Aldrich Z677647, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 30 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator.For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: crystalline Colour: light yellow
b)	Odour	characteristic
c)	Odour Threshold	No data available
d)	pH	5.5
e)	Melting point/freezing point	Melting point/range: 68 - 70 °C (154 - 158 °F) - lit.
f)	Initial boiling point and boiling range	255 °C (491 °F) - lit.
g)	Flash point	110 °C (230 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	The product is not flammable. - Flammability (solids)
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 5.8 %(V) Lower explosion limit: 0.6 %(V)
k)	Vapour pressure	0.04 hPa (0.03 mmHg) at 20 °C (68 °F) 5.5 hPa (4.1 mmHg) at 100 °C (212 °F) 12.6 hPa (9.5 mmHg) at 115 °C (239 °F) 95.7 hPa (71.8 mmHg) at 166 °C (331 °F)
l)	Vapour density	No data available
m)	Relative density	0.992 g/cm3
n)	Water solubility	0.0075 g/l at 15 °C (59 °F)
o)	Partition coefficient: n-octanol/water	log Pow: 4.008 at 25 °C (77 °F)
p)	Auto-ignition temperature	566 °C (1,051 °F) at 1,013.0 hPa (759.8 mmHg)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
Inhalation: No data available

LD50 Dermal - Rabbit - > 5,010 mg/kg

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Irritating to skin. - 24 h
(Draize Test)

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
Maximisation Test (GPMT) - Guinea pig
Does not cause skin sensitisation.
(OECD Test Guideline 406)

Germ cell mutagenicity
Ames test
S. typhimurium
Result: negative

Mouse - male and female
Result: negative

Carcinogenicity

Carcinogenicity - Mouse - Oral
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Lungs, Thorax, or Respiration:Tumors. Blood:Tumors.

Carcinogenicity - Mouse - Subcutaneous
Tumorigenic:Neoplastic by RTECS criteria. Lungs, Thorax, or Respiration:Tumors. Liver:Tumors.

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

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: DU8050000

Liver injury may occur., Gastrointestinal disturbance

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	flow-through test LC50 - Pimephales promelas (fathead minnow) - 3 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	flow-through test EC50 - Daphnia magna (Water flea) - 0.36 mg/l - 48 h

12.2 Persistence and degradability

Biodegradability	aerobic - Exposure time 14 d Result: 84 % - Readily biodegradable (OECD Test Guideline 301C)

12.3 Bioaccumulative potential

Bioaccumulation	Leuciscus idus (Golden orfe) - 3 d - 50 µg/l Bioconcentration factor (BCF): 281

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substances, solid, n.o.s. (Biphenyl)
Reportable Quantity (RQ): 100 lbs
Marine pollutant:yes
Poison Inhalation Hazard: No

IMDG
UN number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Biphenyl)
Marine pollutant:yes

IATA
UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Biphenyl)

15. REGULATORY INFORMATION

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

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Biphenyl	92-52-4	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Biphenyl	92-52-4	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Biphenyl	92-52-4	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Biphenyl	92-52-4	2007-07-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Eye Irrit.	Eye irritation
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	1
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	1
Reactivity Hazard:	0

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

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.10 Revision Date: 01/28/2016 Print Date: 02/18/2016

SAFETY DATA SHEET

Version 5.3
Revision Date 12/29/2015
Print Date 04/11/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : 1,1-Dichloroethane

Product Number : 48512
Brand : Supelco
Index-No. : 602-011-00-1

CAS-No. : 75-34-3

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2), H225
Acute toxicity, Oral (Category 4), H302
Eye irritation (Category 2A), H319
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Acute aquatic toxicity (Category 3), H402
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H225 Highly flammable liquid and vapour.
H302 Harmful if swallowed.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ eye protection/ face protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	:	Ethylidene chloride
Formula	:	$C_2H_4Cl_2$
Molecular weight	:	98.96 g/mol
CAS-No.	:	75-34-3
EC-No.	:	200-863-5
Index-No.	:	602-011-00-1

Hazardous components

Component	Classification	Concentration
1,1-Dichloroethane		
	Flam. Liq. 2; Acute Tox. 4; Eye Irrit. 2A; STOT SE 3; Aquatic Acute 3; Aquatic Chronic 3; H225, H302, H319, H335, H412	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

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

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Hydrogen chloride gas

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Use explosion-proof equipment.Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
1,1-Dichloroethane	75-34-3	TWA	100.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract irritation Eye irritation Liver damage Kidney damage Not classifiable as a human carcinogen		
		TWA	100.000000 ppm 400.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		See Appendix C		
		TWA	100.000000 ppm 400.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact
Material: butyl-rubber
Minimum layer thickness: 0.3 mm
Break through time: 60 min
Material tested:Butoject® (KCL 897 / Aldrich Z677647, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type AXBEK (EN 14387) respirator cartridges as a backup to engineering

controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	-97.99 °C (-144.38 °F)
f)	Initial boiling point and boiling range	55.0 - 58.0 °C (131.0 - 136.4 °F)
g)	Flash point	-9.99 °C (14.02 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	1.17 g/cm3
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Vapours may form explosive mixture with air.

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 725.0 mg/kg

LC50 Inhalation - Rat - 4 h - 13000 ppm

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
Chronic exposure may cause dermatitis.

Germ cell mutagenicity
No data available

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

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

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: KI0175000

Liver injury may occur., Kidney injury may occur., narcosis, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Central nervous system -

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 2362 Class: 3 Packing group: II
Proper shipping name: 1,1-Dichloroethane
Reportable Quantity (RQ): 1000 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 2362 Class: 3 Packing group: II EMS-No: F-E, S-D
Proper shipping name: 1,1-DICHLOROETHANE

IATA
UN number: 2362 Class: 3 Packing group: II
Proper shipping name: 1,1-Dichloroethane

15. REGULATORY INFORMATION

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

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
1,1-Dichloroethane	75-34-3	2007-07-01

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
1,1-Dichloroethane	75-34-3	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
1,1-Dichloroethane	75-34-3	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
1,1-Dichloroethane	75-34-3	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
1,1-Dichloroethane	75-34-3	2007-09-28

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.3 Revision Date: 12/29/2015 Print Date: 04/11/2016

SAFETY DATA SHEET

Version 6.5
Revision Date 05/02/2022
Print Date 05/14/2022

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name : 1,2,4,5-Tetramethylbenzene

Product Number : T19607
Brand : Aldrich
CAS-No. : 95-93-2

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765
Fax : +1 800 325-5052

1.4 Emergency telephone

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable solids (Category 1), H228
Short-term (acute) aquatic hazard (Category 1), H400
Long-term (chronic) aquatic hazard (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal Word Danger

Hazard statement(s)
H228 Flammable solid.

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H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P210	Keep away from heat/ sparks/ open flames/ hot surfaces. No smoking.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P273	Avoid release to the environment.
P280	Wear protective gloves/ eye protection/ face protection.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391	Collect spillage.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

SECTION 3: Composition/information on ingredients

3.1 Substances

Synonyms	:	Durene 1,2,4,5-Tetramethylbenzene
Formula	:	$C_{10}H_{14}$
Molecular weight	:	134.22 g/mol
CAS-No.	:	95-93-2
EC-No.	:	202-465-7

Component	Classification	Concentration
1,2,4,5-tetramethylbenzene		
	Flam. Sol. 1; Aquatic Acute 1; Aquatic Chronic 1; H228, H400, H410 M-Factor - Aquatic Acute: 1 - Aquatic Chronic: 1	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first-aid measures

General advice
Show this material safety data sheet to the doctor in attendance.

If inhaled
After inhalation: fresh air.

In case of skin contact
In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower.

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In case of eye contact
After eye contact: rinse out with plenty of water. Remove contact lenses.

If swallowed
After swallowing: make victim drink water (two glasses at most). Consult doctor if feeling unwell.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media
Water Foam Carbon dioxide (CO2) Dry powder

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture
Carbon oxides
Combustible.
Vapors are heavier than air and may spread along floors.
Forms explosive mixtures with air on intense heating.
Development of hazardous combustion gases or vapours possible in the event of fire.

5.3 Advice for firefighters
In the event of fire, wear self-contained breathing apparatus.

5.4 Further information
Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Avoid inhalation of dusts. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.
For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains. Risk of explosion.

6.3 Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts.

6.4 Reference to other sections
For disposal see section 13.

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SECTION 7: Handling and storage

7.1 Precautions for safe handling

Advice on protection against fire and explosion
Keep away from open flames, hot surfaces and sources of ignition.Take precautionary measures against static discharge.

Hygiene measures
Change contaminated clothing. Wash hands after working with substance.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions
Tightly closed. Keep away from heat and sources of ignition.

Storage class
Storage class (TRGS 510): 4.1B: Flammable solid hazardous materials

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Ingredients with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Appropriate engineering controls
Change contaminated clothing. Wash hands after working with substance.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses

Skin protection
Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:KCL 741 Dermatril® L

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:KCL 741 Dermatril® L

Body Protection
Flame retardant antistatic protective clothing.

Respiratory protection
required when dusts are generated.

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Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Control of environmental exposure
Do not let product enter drains. Risk of explosion.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: crystals
b)	Odor	No data available
c)	Odor Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 76 - 80 °C (169 - 176 °F) - lit.
f)	Initial boiling point and boiling range	191 - 193 °C 376 - 379 °F
g)	Flash point	74 °C (165 °F) - c.c.
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	The substance or mixture is a flammable solid with the category 1.
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapor pressure	No data available
l)	Vapor density	No data available
m)	Density	0.838 g/mL at 25 °C (77 °F) - lit.
	Relative density	No data available
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Autoignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	none

9.2 Other safety information

No data available

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SECTION 10: Stability and reactivity

10.1 Reactivity

Forms explosive mixtures with air on intense heating.
A range from approx. 15 Kelvin below the flash point is to be rated as critical.
The following applies in general to flammable organic substances and mixtures: in correspondingly fine distribution, when whirled up a dust explosion potential may generally be assumed.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Violent reactions possible with:
Oxidizing agents

10.4 Conditions to avoid

Strong heating.

10.5 Incompatible materials

No data available

10.6 Hazardous decomposition products

In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 6,700 mg/kg
Remarks: (RTECS)
Inhalation: No data available
Dermal: No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitization
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC: No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

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Reproductive toxicity
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

11.2 Additional Information

RTECS: DC0500000
The data available to us do not suffice to permit any industrial-toxicological assessment.

Further toxicological data:

Risk of absorption.

Other dangerous properties can not be excluded.

Further data:

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish	LC0 - Leuciscus idus (Golden orfe) - 10 mg/l - 48 h Remarks: (ECOTOX Database) LC50 - Leuciscus idus (Golden orfe) - 30 mg/l - 48 h Remarks: (ECOTOX Database) LC100 - Leuciscus idus (Golden orfe) - 50 mg/l - 48 h Remarks: (ECOTOX Database)
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 0.47 mg/l - 48 h Remarks: (External MSDS)

12.2 Persistence and degradability
Not readily biodegradable.

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

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12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Endocrine disrupting properties

No data available

12.7 Other adverse effects

Discharge into the environment must be avoided.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14: Transport information

DOT (US)

UN number: 1325 Class: 4.1 Packing group: II
Proper shipping name: Flammable solids, organic, n.o.s. (1,2,4,5-tetramethylbenzene)
Reportable Quantity (RQ):
Poison Inhalation Hazard: No

IMDG

UN number: 1325 Class: 4.1 Packing group: II EMS-No: F-A, S-G
Proper shipping name: FLAMMABLE SOLID, ORGANIC, N.O.S. (1,2,4,5-tetramethylbenzene)
Marine pollutant : yes

IATA

UN number: 1325 Class: 4.1 Packing group: II
Proper shipping name: Flammable solid, organic, n.o.s. (1,2,4,5-tetramethylbenzene)

SECTION 15: Regulatory information

SARA 302 Components

This material does not contain any components with a section 302 EHS TPQ.

SARA 313 Components

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

SARA 311/312 Hazards

Fire Hazard

Massachusetts Right To Know Components

No components are subject to the Massachusetts Right to Know Act.

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No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

1,2,4,5-tetramethylbenzene	CAS-No. 95-93-2	Revision Date

New Jersey Right To Know Components

1,2,4,5-tetramethylbenzene	CAS-No. 95-93-2	Revision Date

SECTION 16: Other information

Further information

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

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Version: 6.5 Revision Date: 05/02/2022 Print Date: 05/14/2022

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Fisher Scientific
Part of Thermo Fisher Scientific

MATERIAL SAFETY DATA SHEET

Section 1 - Chemical Product and Company Identification

MSDS Name: 1,2,4-Trimethylbenzene

Catalog Numbers: AC140090000, AC140090010, AC140090025, AC140095000

Synonyms: Pseudocumene.

Company Identification:
Acros Organics BVBA
Janssen Pharmaceuticalaan 3a
2440 Geel, Belgium

Company Identification: (USA)
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

For information in the US, call: 800-ACROS-01

For information in Europe, call: +32 14 57 52 11

Emergency Number, Europe: +32 14 57 52 99

Emergency Number US: 201-796-7100

CHEMTREC Phone Number, US: 800-424-9300

CHEMTREC Phone Number, Europe: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#: 95-63-6
Chemical Name: 1,2,4-Trimethylbenzene
%: 98
EINECS#: 202-436-9

Hazard Symbols: XN N

Risk Phrases: 10 20 36/37/38 51/53

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Warning! Flammable liquid and vapor. Harmful if inhaled. Causes eye, skin, and respiratory tract irritation. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Target Organs: Blood, central nervous system, respiratory system, eyes, skin.

Potential Health Effects

Eye: Causes eye irritation. Causes redness and pain.

Skin: Causes skin irritation. Causes redness and pain. May be harmful if absorbed through the skin.

Ingestion: May cause irritation of the digestive tract. Aspiration of material into the lungs may cause chemical pneumonitis, which may be fatal. May be harmful if swallowed. May cause central nervous system depression.

Inhalation: Harmful if inhaled. Causes respiratory tract irritation. May cause drowsiness, unconsciousness, and central nervous system depression.

Chronic: Prolonged or repeated skin contact may cause dermatitis. May cause anemia and other blood cell abnormalities. Prolonged exposure may produce a narcotic effect. Prolonged or repeated exposure may cause nausea, dizziness, and headache.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Skin: Get medical aid. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

Ingestion: Do not induce vomiting. Possible aspiration hazard. Get medical aid immediately. Call a poison control center.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Possible aspiration hazard. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Notes to Physician:

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. Will burn if involved in a fire. Containers may explode in the heat of a fire. Flammable liquid and vapor.

Extinguishing Media: Use water spray to cool fire-exposed containers. Use water spray, dry chemical, carbon dioxide, or chemical foam.

Autoignition Temperature: 500 deg C (932.00 deg F)

Flash Point: 48 deg C (118.40 deg F)

Explosion Limits: Lower: 0.9 vol %

Explosion Limits: Upper: 6.4 vol %

NFPA Rating: health: 2; flammability: 2; instability: 0;

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Wear a self contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section). Remove all sources of ignition. Use a spark-proof tool. Do not let this chemical enter the environment.

Section 7 - Handling and Storage

Handling: Use spark-proof tools and explosion proof equipment. Do not get in eyes, on skin, or on clothing. Do not ingest or inhale. Use only in a chemical fume hood. Keep away from heat, sparks and flame.

Storage: Keep away from sources of ignition. Store in a cool, dry place. Store in a tightly closed container. Flammables-area.

Section 8 - Exposure Controls, Personal Protection

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
1,2,4-Trimethylbenzene	25 ppm TWA (listed under Trimethyl benzene).	25 ppm TWA; 125 mg/m3 TWA	none listed

OSHA Vacated PELs: 1,2,4-Trimethylbenzene: 25 ppm TWA; 125 mg/m3 TWA (listed under Trimethyl benzene)

Engineering Controls:

Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.

Exposure Limits

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Clear liquid
Color: colorless
Odor: aromatic odor
pH: Not available
Vapor Pressure: 7 mm Hg @ 44.4 deg C
Vapor Density: 4.15 (air=1)
Evaporation Rate: Not available
Viscosity: Not available
Boiling Point: 168 deg C @ 760 mmHg (334.40°F)
Freezing/Melting Point: -44 deg C (-47.20°F)
Decomposition Temperature: Not available
Solubility in water: Insoluble
Specific Gravity/Density: 0.880 g/cm3
Molecular Formula: C9H12
Molecular Weight: 120.19

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Incompatible materials, ignition sources, excess heat.
Incompatibilities with Other Materials Strong oxidizing agents.
Hazardous Decomposition Products Carbon monoxide, carbon dioxide.
Hazardous Polymerization Will not occur.

Section 11 - Toxicological Information

RTECS#: CAS# 95-63-6: DC3325000

LD50/LC50: RTECS:
CAS# 95-63-6: Inhalation, rat: LC50 = 18000 mg/m3/4H;
Oral, mouse: LD50 = 6900 mg/kg;
Oral, rat: LD50 = 5 gm/kg;
.

Carcinogenicity: 1,2,4-Trimethylbenzene - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Ecotoxicity: Fish: Fathead Minnow: LC50 = 77.2 mg/L; 96 Hr; Flow-through at 25 C (pH 7.24)

Other: Do not empty into drains.

Section 13 - Disposal Considerations

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

Section 14 - Transport Information

US DOT
Shipping Name: FLAMMABLE LIQUIDS, N.O.S. (1,2,4-Trimethylbenzene)
Hazard Class: 3
UN Number: UN1993
Packing Group: III
Canada TDG

Shipping Name: Not available
Hazard Class:
UN Number:
Packing Group:

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN N

Risk Phrases:

R 10 Flammable.

R 20 Harmful by inhalation.

R 36/37/38 Irritating to eyes, respiratory system and skin.

R 51/53 Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

S 61 Avoid release to the environment. Refer to special instructions/safety data sheets.

WGK (Water Danger/Protection)

CAS# 95-63-6: 3

Canada

CAS# 95-63-6 is listed on Canada's DSL List

Canadian WHMIS Classifications: B3, D1B, D2B

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

CAS# 95-63-6 is listed on Canada's Ingredient Disclosure List

US Federal

TSCA

CAS# 95-63-6 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date: 5/19/1999

Revision #5 Date 8/30/2007

Revisions were made in Sections: 3, 4, 5, 6, 7, 8, 9, 10, 11, 1

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

SAFETY DATA SHEET

Version 5.4
Revision Date 12/01/2015
Print Date 02/18/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : 1,2-Dichloroethylene, mixture of *cis* and *trans*

Product Number : D62403
Brand : Aldrich
Index-No. : 602-026-00-3

CAS-No. : 540-59-0

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2), H225
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 4), H332
Acute aquatic toxicity (Category 3), H402
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H225 Highly flammable liquid and vapour.
H302 + H332 Harmful if swallowed or if inhaled
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312	Call a POISON CENTER or doctor/ physician if you feel unwell.
P330	Rinse mouth.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P403 + P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	$C_2H_2Cl_2$
Molecular weight	:	96.94 g/mol
CAS-No.	:	540-59-0
EC-No.	:	208-750-2
Index-No.	:	602-026-00-3

Hazardous components

Component	Classification	Concentration
1,2-Dichloroethylene		
	Flam. Liq. 2; Acute Tox. 4; Aquatic Acute 3; Aquatic Chronic 3; H225, H302 + H332, H412	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

In case of eye contact
Flush eyes with water as a precaution.

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Hydrogen chloride gas

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Use explosion-proof equipment.Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Air, light, and moisture sensitive.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
1,2-Dichloroethylene	540-59-0	TWA	200.000000 ppm 790.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	200.000000 ppm 790.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	Remarks	The value in mg/m3 is approximate.		
		TWA	200.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Eye irritation		
		TWA	200.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Eye irritation		
		TWA	200 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Eye irritation		

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance — Form: liquid
Colour: colourless

b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -57 °C (-71 °F) - lit.
f)	Initial boiling point and boiling range	48 - 60 °C (118 - 140 °F) - lit.
g)	Flash point	6 °C (43 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	1.265 g/cm3 at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Vapours may form explosive mixture with air.

10.4 Conditions to avoid
Heat, flames and sparks. Extremes of temperature and direct sunlight.

10.5 Incompatible materials
Strong oxidizing agentsOxidizing agents, Bases

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 770 mg/kg

Dermal: No data available

No data available

Skin corrosion/irritation
Skin - Rabbit

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

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

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: KV9360000

prolonged or repeated exposure can cause:, narcosis, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Lepomis macrochirus (Bluegill) - 140.0 mg/l - 96.0 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 1150 Class: 3 Packing group: II
Proper shipping name: 1,2-Dichloroethylene

Poison Inhalation Hazard: No

IMDG

UN number: 1150 Class: 3 Packing group: II EMS-No: F-E, S-D
Proper shipping name: 1,2-DICHLOROETHYLENE

IATA

UN number: 1150 Class: 3 Packing group: II
Proper shipping name: 1,2-Dichloroethylene

15. REGULATORY INFORMATION

SARA 302 Components

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

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
1,2-Dichloroethylene	540-59-0	2007-07-01

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
1,2-Dichloroethylene	540-59-0	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
1,2-Dichloroethylene	540-59-0	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
1,2-Dichloroethylene	540-59-0	2007-07-01

California Prop. 65 Components

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

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H302 + H332	Harmful if swallowed or if inhaled

HMIS Rating

Health hazard:	1
Chronic Health Hazard:	*
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	1
Fire Hazard:	3
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.4 Revision Date: 12/01/2015 Print Date: 02/18/2016

Material Safety Data Sheet

Version 3.1
Revision Date 04/08/2011
Print Date 12/27/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	1,3,5-Trimethylbenzene
Product Number	:	442236
Brand	:	Supelco
Supplier	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone # (For both supplier and manufacturer)	:	(314) 776-6555
Preparation Information	:	Sigma-Aldrich Corporation Product Safety - Americas Region 1-800-521-8956

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Combustible Liquid, Target Organ Effect, Irritant

Target Organs

Peripheral nervous system., Central nervous system, Blood

GHS Classification
Flammable liquids (Category 3)
Acute toxicity, Inhalation (Category 5)
Skin irritation (Category 2)
Eye irritation (Category 2B)
Specific target organ toxicity - single exposure (Category 3)
Acute aquatic toxicity (Category 2)
Chronic aquatic toxicity (Category 2)

GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)

H226	Flammable liquid and vapour.
H315 + H320	Causes skin and eye irritation.
H333	May be harmful if inhaled.
H335	May cause respiratory irritation.
H411	Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P273	Avoid release to the environment.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification

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

NFPA Rating

Health hazard:	2
Fire:	2
Reactivity Hazard:	0

Potential Health Effects

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Mesitylene
1,3,5-Trimethylbenzene

Formula : C_9H_{12}

Molecular Weight : 120.19 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Mesitylene			
108-67-8	203-604-4	601-025-00-5	-

4. FIRST AID MEASURES

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

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

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

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

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

5. FIRE-FIGHTING MEASURES

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

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

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

Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

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

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

Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

7. HANDLING AND STORAGE

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

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Basis
Mesitylene	108-67-8	TWA	25 ppm 125 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	25 ppm 123 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		TWA	25 ppm 125 mg/m3	USA. NIOSH Recommended Exposure Limits

Personal protective equipment

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

Hand protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection
impervious clothing, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid, clear

Colour	colourless

Safety data

pH	no data available
Melting point/freezing point	Melting point/range: -45 °C (-49 °F) - lit.
Boiling point	163 - 166 °C (325 - 331 °F) - lit.
Flash point	53.0 °C (127.4 °F) - closed cup
Ignition temperature	550 °C (1,022 °F)
Autoignition temperature	550.0 °C (1,022.0 °F)
Lower explosion limit	0.88 %(V)
Vapour pressure	18.7 hPa (14.0 mmHg) at 55.0 °C (131.0 °F) 3.3 hPa (2.5 mmHg) at 25.0 °C (77.0 °F)
Density	0.864 g/cm3 at 25 °C (77 °F)
Water solubility	no data available
Partition coefficient: n-octanol/water	no data available
Relative vapour density	no data available
Odour	no data available
Odour Threshold	no data available
Evaporation rate	no data available

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
no data available

Conditions to avoid
Heat, flames and sparks.

Materials to avoid
Strong oxidizing agents

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

Acute toxicity

Oral LD50
Inhalation LC50
LC50 Inhalation - rat - 4 h - 24,000 mg/m3

Dermal LD50
no data available

Other information on acute toxicity
no data available

Skin corrosion/irritation
Skin - rabbit - Skin irritation - 24 h

Serious eye damage/eye irritation
Eyes - rabbit - Mild eye irritation - 24 h

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

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

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

no data available

Teratogenicity

no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
May cause respiratory irritation.

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
no data available

Potential health effects

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

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

Synergistic effects
no data available

Additional Information
RTECS: OX6825000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Carassius auratus (goldfish) - 12.52 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates.	Immobilization EC50 - Daphnia magna (Water flea) - 6 mg/l - 48 h

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

Toxic to aquatic life with long lasting effects.

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

13. DISPOSAL CONSIDERATIONS

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 2325 Class: 3 Packing group: III
Proper shipping name: 1,3,5-Trimethylbenzene
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 2325 Class: 3 Packing group: III EMS-No: F-E, S-D
Proper shipping name: 1,3,5-TRIMETHYLBENZENE
Marine pollutant: No

IATA
UN number: 2325 Class: 3 Packing group: III
Proper shipping name: 1,3,5-Trimethylbenzene

15. REGULATORY INFORMATION

OSHA Hazards
Combustible Liquid, Target Organ Effect, Irritant

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

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

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Mesitylene	108-67-8	1994-04-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Mesitylene	108-67-8	1994-04-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Mesitylene	108-67-8	1994-04-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

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

SAFETY DATA SHEET

Version 4.6
Revision Date 03/03/2015
Print Date 03/03/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : 1,3-Butadiene

Product Number : 295035
Brand : Aldrich
Index-No. : 601-013-00-X

CAS-No. : 106-99-0

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable gases (Category 1), H220
Gases under pressure (Liquefied gas), H280
Germ cell mutagenicity (Category 1B), H340
Carcinogenicity (Category 1A), H350

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H220	Extremely flammable gas.
H280	Contains gas under pressure; may explode if heated.
H340	May cause genetic defects.
H350	May cause cancer.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P281	Use personal protective equipment as required.

P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P377	Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381	Eliminate all ignition sources if safe to do so.
P405	Store locked up.
P410 + P403	Protect from sunlight. Store in a well-ventilated place.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	C_4H_6
Molecular weight	:	54.09 g/mol
CAS-No.	:	106-99-0
EC-No.	:	203-450-8
Index-No.	:	601-013-00-X

Hazardous components

Component	Classification	Concentration
1,3-Butadiene		
	Flam. Gas 1; Press. Gas Liquefied gas; Muta. 1B; Carc. 1A; H220, H280, H340, H350	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

In case of eye contact
Flush eyes with water as a precaution.

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Clean up promptly by sweeping or vacuum.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid inhalation of vapour or mist.
Use explosion-proof equipment.Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Recommended storage temperature 2 - 8 °C

Contents under pressure. Air sensitive. Light sensitive. Shock or heat may detonate May explode when heated. Handle and store under inert gas.
Storage class (TRGS 510): Gases

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
	Remarks	Potential Occupational Carcinogen See Appendix A		
1,3-Butadiene	106-99-0	TWA	2 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Cancer Suspected human carcinogen		
		TWA	2.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Cancer Suspected human carcinogen		
		TWA	1 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Substance listed; for more information see OSHA document 29 CFR 1910.1051; 29 CFR 1910.19(1)		
		TWA	1.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Substance listed; for more information see OSHA document 29 CFR 1910.1051; 29 CFR 1910.19(1)		

		STEL	5 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Substance listed; for more information see OSHA document 29 CFR 1910.1051; 29 CFR 1910.19(1)		
		STEL	5.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Substance listed; for more information see OSHA document 29 CFR 1910.1051; 29 CFR 1910.19(1)		
		See 1910.1051		
		PEL	1.000000 ppm	OSHA Specifically Regulated Chemicals/Carcinogens
		1910.1051 This section applies to all occupational exposures to 1,3-Butadiene (BD), Chemical Abstracts Service Registry No. 106-99-0, except as provided in paragraph (a)(2) of this section. Except for the recordkeeping provisions in paragraph (m)(1) of this section, this section does not apply to the processing, use, or handling of products containing BD or to other work operations and streams in which BD is present where objective data are reasonably relied upon that demonstrate the work operation or the product or the group of products or operations to which it belongs may not reasonably be foreseen to release BD in airborne concentrations at or above the action level or in excess of the STEL under the expected conditions of processing, use, or handling that will cause the greatest possible release or in any plausible accident. This section also does not apply to work operations, products or streams where the only exposure to BD is from liquid mixtures containing 0.1% or less of BD by volume or the vapors released from such liquids, unless objective data become available that show that airborne concentrations generated by such mixtures can exceed the action level or STEL under reasonably predictable conditions of processing, use or handling that will cause the greatest possible release. Except for labeling requirements and requirements for emergency response, this section does not apply to the storage, transportation, distribution or sale of BD or liquid mixtures in intact containers or in transportation pipelines sealed in such a manner as to fully contain BD vapors or liquid. Where products or processes containing BD are exempted under paragraph (a)(2) of this section, the employer shall maintain records of the objective data supporting that exemption and the basis for the employer's reliance on the data, as provided in paragraph (m)(1) of this section 1,3-Butadiene means an organic compound with chemical formula CH2=CH-CH=CH2 that has a molecular weight of approximately 54.15 g/mole OSHA specifically regulated carcinogen		
		STEL	5.000000 ppm	OSHA Specifically Regulated Chemicals/Carcinogens
		1910.1051 This section applies to all occupational exposures to 1,3-Butadiene (BD), Chemical Abstracts Service Registry No. 106-99-0, except as provided in paragraph (a)(2) of this section. Except for the recordkeeping provisions in paragraph (m)(1) of this section, this section does not apply to the processing, use, or handling of products containing BD or to other work operations and streams in which BD is present where objective data are reasonably relied upon that demonstrate the work operation or the product or the group of products or operations to which it belongs may not reasonably be foreseen to release BD in airborne concentrations at or above the		

		action level or in excess of the STEL under the expected conditions of processing, use, or handling that will cause the greatest possible release or in any plausible accident. This section also does not apply to work operations, products or streams where the only exposure to BD is from liquid mixtures containing 0.1% or less of BD by volume or the vapors released from such liquids, unless objective data become available that show that airborne concentrations generated by such mixtures can exceed the action level or STEL under reasonably predictable conditions of processing, use or handling that will cause the greatest possible release. Except for labeling requirements and requirements for emergency response, this section does not apply to the storage, transportation, distribution or sale of BD or liquid mixtures in intact containers or in transportation pipelines sealed in such a manner as to fully contain BD vapors or liquid. Where products or processes containing BD are exempted under paragraph (a)(2) of this section, the employer shall maintain records of the objective data supporting that exemption and the basis for the employer's reliance on the data, as provided in paragraph (m)(1) of this section 1,3-Butadiene means an organic compound with chemical formula CH2=CH-CH=CH2 that has a molecular weight of approximately 54.15 g/mole OSHA specifically regulated carcinogen

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
1,3-Butadiene	106-99-0	1,2 Dihydroxy-4-(N-acetylcysteinyl)-butane	2.5000 mg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			
		Mixture of N-1 and N-2(hydroxybutenyl)valine	2.5pmol/g	Hemoglobin (Hb) adducts in blood	ACGIH - Biological Exposure Indices (BEI)
		Not critical			

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact
Material: Fluorinated rubber

Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: Liquefied gas
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -109 °C (-164 °F) - lit.
f)	Initial boiling point and boiling range	-4.5 °C (23.9 °F) - lit.
g)	Flash point	-75.99 °C (-104.78 °F) - closed cup - Tested according to Annex V of Directive 67/548/EEC.
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 16.3 %(V) Lower explosion limit: 1.4 %(V)
k)	Vapour pressure	ca.2,400 hPa (1,800 mmHg) at 20 °C (68 °F) 3,200 hPa (2,400 mmHg) at 30 °C (86 °F) 5,700 hPa (4,275 mmHg) at 50 °C (122 °F)
l)	Vapour density	No data available
m)	Relative density	0.62 g/cm3 at 20 °C (68 °F)
n)	Water solubility	0.5 g/l at 20 °C (68 °F) - Tested according to Annex V of Directive 67/548/EEC.
o)	Partition coefficient: n-octanol/water	log Pow: 1.85 at 23 °C (73 °F)
p)	Auto-ignition temperature	No data available

q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Test for peroxide formation before using or discard after 3 months.
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Oxidizing agents, Oxygen, Copper, Copper alloys, Carbides, Halogens, Metal oxides, Metals

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 5,480 mg/kg

LC50 Inhalation - Rat - 4 h - 285 mg/l

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
In vivo tests showed mutagenic effects

Carcinogenicity

Carcinogenicity - Rat - Inhalation
Tumorigenic:Carcinogenic by RTECS criteria. Cardiac:Tumors. Lungs, Thorax, or Respiration:Tumors.

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

Human carcinogen.

IARC: 1 - Group 1: Carcinogenic to humans (1,3-Butadiene)

NTP: Known to be human carcinogen (1,3-Butadiene)

OSHA: OSHA specifically regulated carcinogen (1,3-Butadiene)

Reproductive toxicity
No data available

Reproductive toxicity - Mouse - Inhalation
Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Extra embryonic structures (e.g., placenta, umbilical cord). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

No data available

Developmental Toxicity - Rat - Inhalation
Specific Developmental Abnormalities: Musculoskeletal system.

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: Not available

Cholinesterase inhibitors can cause heavy salivation and secretion in the lungs, lachrymation, blurred vision, involuntary defecation, diarrhea, tremor, ataxia, sweating, hypothermia, lowered heart rate, and/or a fall in blood pressure as a result of their action at cholinergic nerve sites., narcosis, Headache, Nausea, Vomiting, Dizziness, Drowsiness, Confusion., Weakness, Muscle cramps/spasms., Change in pupil size., Tremors, Seizures., Incoordination., Convulsions, Coma

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - other fish - 71.5 mg/l - 24 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1010 Class: 2.1
Proper shipping name: Butadienes, stabilized
Reportable Quantity (RQ): 10 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1010 Class: 2.1 EMS-No: F-D, S-U
Proper shipping name: BUTADIENES, STABILIZED

IATA
UN number: 1010 Class: 2.1
Proper shipping name: Butadienes, stabilized
IATA Passenger: Not permitted for transport

15. REGULATORY INFORMATION

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

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
1,3-Butadiene	106-99-0	1993-04-24

SARA 311/312 Hazards
Fire Hazard, Sudden Release of Pressure Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
1,3-Butadiene	106-99-0	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
1,3-Butadiene	106-99-0	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
1,3-Butadiene	106-99-0	1993-04-24

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer. 1,3-Butadiene	CAS-No. 106-99-0	Revision Date 2007-09-28
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. 1,3-Butadiene	CAS-No. 106-99-0	Revision Date 2007-09-28

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Carc.	Carcinogenicity
Flam. Gas	Flammable gases
H220	Extremely flammable gas.

H280	Contains gas under pressure; may explode if heated.
H340	May cause genetic defects.
H350	May cause cancer.
Muta.	Germ cell mutagenicity
Press. Gas	Gases under pressure

HMIS Rating

Health hazard:	0
Chronic Health Hazard:	*
Flammability:	4
Physical Hazard	3

NFPA Rating

Health hazard:	0
Fire Hazard:	4
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.6 Revision Date: 03/03/2015 Print Date: 03/03/2016

SAFETY DATA SHEET

Version 4.4
Revision Date 04/24/2015
Print Date 01/29/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : 1,4-Dichlorobenzene

Product Number : D56829
Brand : Aldrich
Index-No. : 602-035-00-2

CAS-No. : 106-46-7

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Eye irritation (Category 2A), H319
Carcinogenicity (Category 2), H351
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H319 Causes serious eye irritation.
H351 Suspected of causing cancer.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P264 Wash skin thoroughly after handling.
P273 Avoid release to the environment.
P280 Wear protective gloves/ eye protection/ face protection.

P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	$C_6H_4Cl_2$
Molecular weight	:	147.00 g/mol
CAS-No.	:	106-46-7
EC-No.	:	203-400-5
Index-No.	:	602-035-00-2

Hazardous components

Component	Classification	Concentration
1,4-Dichlorobenzene		
	Eye Irrit. 2A; Carc. 2; Aquatic Acute 1; Aquatic Chronic 1; H319, H351, H410	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

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

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Hydrogen chloride gas

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions

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

6.3 Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
1,4-Dichlorobenzene	106-46-7	TWA	10.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Eye irritation Kidney damage Confirmed animal carcinogen with unknown relevance to humans		
		Potential Occupational Carcinogen See Appendix A		
		TWA	75.000000 ppm 450.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		

8.2 Exposure controls

Appropriate engineering controls

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

Personal protective equipment

Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: sheets Colour: colourless
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 52 - 54 °C (126 - 129 °F) - lit.
f)	Initial boiling point and boiling range	173 °C (343 °F) - lit.
g)	Flash point	66.0 °C (150.8 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	8.8 hPa (6.6 mmHg) at 50.0 °C (122.0 °F) 0.5 hPa (0.4 mmHg) at 25.0 °C (77.0 °F)
l)	Vapour density	No data available
m)	Relative density	1.241 g/mL at 25 °C (77 °F)
n)	Water solubility	No data available

o)	Partition coefficient: n-octanol/water	log Pow: 3.40
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

Bulk density	650 kg/m3

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD0 Oral - Rat - male and female - > 2,000 mg/kg
(OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 4 h - > 5.07 mg/l

LD0 Dermal - Rat - > 2,000 mg/kg
(OECD Test Guideline 402)

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: No eye irritation
(OECD Test Guideline 405)

Respiratory or skin sensitisation
Maximisation Test (GPMT) - Guinea pig
Did not cause sensitisation on laboratory animals.
(OECD Test Guideline 406)

Germ cell mutagenicity
No data available

Carcinogenicity

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

Limited evidence of carcinogenicity in animal studies

IARC:	2B - Group 2B: Possibly carcinogenic to humans (1,4-Dichlorobenzene)
NTP:	Reasonably anticipated to be a human carcinogen (1,4-Dichlorobenzene)
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: CZ4550000

Produces:, methemoglobin, Nausea, Vomiting, Increased pulse rate, Headache, Impairment of vision

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	flow-through test LC50 - Salmo gairdneri - 1.12 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	static test EC50 - Daphnia magna (Water flea) - 0.7 mg/l - 48 h
Toxicity to algae	Growth inhibition EC50 - Scenedesmus capricornutum (fresh water algae) - 1.6 mg/l - 96 h

12.2 Persistence and degradability

Biodegradability	aerobic - Exposure time 28 d Result: 30 % - Not rapidly biodegradable (OECD Test Guideline 301C)

12.3 Bioaccumulative potential

Bioaccumulation	Jordanella floridae - 5 d - 2.68 µg/l Bioconcentration factor (BCF): 296

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substances, solid, n.o.s. (1,4-Dichlorobenzene)
Reportable Quantity (RQ): 100 lbs
Marine pollutant:yes
Poison Inhalation Hazard: No

IMDG
UN number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (1,4-Dichlorobenzene)
Marine pollutant:yes

IATA
UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (1,4-Dichlorobenzene)

15. REGULATORY INFORMATION

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

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
1,4-Dichlorobenzene	106-46-7	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
1,4-Dichlorobenzene	106-46-7	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
1,4-Dichlorobenzene	106-46-7	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
1,4-Dichlorobenzene	106-46-7	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
1,4-Dichlorobenzene	106-46-7	2007-09-28

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
Eye Irrit.	Eye irritation
H319	Causes serious eye irritation.
H351	Suspected of causing cancer.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

HMIS Rating

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

NFPA Rating

Health hazard:	0
Fire Hazard:	2
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.4 Revision Date: 04/24/2015 Print Date: 01/29/2016

SAFETY DATA SHEET

Version 4.8
Revision Date 11/04/2015
Print Date 05/28/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : 2,4-Dinitrotoluene

Product Number : 101397
Brand : Aldrich
Index-No. : 609-007-00-9

CAS-No. : 121-14-2

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 3), H301
Acute toxicity, Inhalation (Category 3), H331
Acute toxicity, Dermal (Category 3), H311
Germ cell mutagenicity (Category 2), H341
Carcinogenicity (Category 1B), H350
Reproductive toxicity (Category 2), H361
Specific target organ toxicity - repeated exposure (Category 2), H373
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H301 + H311 + H331	Toxic if swallowed, in contact with skin or if inhaled
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H361	Suspected of damaging fertility or the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.

H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P310 + P330	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Rinse mouth.
P302 + P352 + P312	IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell.
P304 + P340 + P311	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	$C_7H_6N_2O_4$
Molecular weight	:	182.13 g/mol
CAS-No.	:	121-14-2
EC-No.	:	204-450-0
Index-No.	:	609-007-00-9

Hazardous components

Component	Classification	Concentration
2,4-Dinitrotoluene Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)		
	Acute Tox. 3; Muta. 2; Carc. 1B; Repr. 2; STOT RE 2; Aquatic Acute 1; Aquatic Chronic 1; H301 + H311 + H331, H341, H350, H361, H373, H410	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Nitrogen oxides (NOx)

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid formation of dust and aerosols.Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
2,4-Dinitrotoluene	121-14-2	TWA	1.500000 mg/m3	USA. NIOSH Recommended Exposure Limits
	Remarks	Potential Occupational Carcinogen Various isomers of DNT exist. See Appendix A Potential for dermal absorption		

8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: crystalline Colour: light yellow
b)	Odour	No data available
c)	Odour Threshold	No data available

d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 67 - 70 °C (153 - 158 °F)
f)	Initial boiling point and boiling range	No data available
g)	Flash point	155.0 °C (311.0 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	133.3 hPa (100.0 mmHg) at 157.7 °C (315.9 °F) 1.3 hPa (1.0 mmHg) at 102.7 °C (216.9 °F)
l)	Vapour density	No data available
m)	Relative density	No data available
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Oxidizing agents, Reducing agents, Strong bases, Metals

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 268.0 mg/kg

Inhalation: No data available

LD50 Dermal - Guinea pig - > 1,000 mg/kg

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Mild skin irritation - 24 h

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC:	2B - Group 2B: Possibly carcinogenic to humans (2,4-Dinitrotoluene)
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: XT1575000

Absorption into the body leads to the formation of methemoglobin which in sufficient concentration causes cyanosis. Onset may be delayed 2 to 4 hours or longer., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Heart -

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC0 - Oryzias latipes - > 16 mg/l - 96.0 h
	LC50 - Pimephales promelas (fathead minnow) - 31 mg/l - 96.0 h
	NOEC - other fish - 1.8 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 26.20 mg/l - 48 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3454 Class: 6.1 Packing group: II
Proper shipping name: Dinitrotoluenes, solid
Reportable Quantity (RQ): 10 lbs
Marine pollutant:yes
Poison Inhalation Hazard: No

IMDG
UN number: 3454 Class: 6.1 Packing group: II EMS-No: F-A, S-A
Proper shipping name: DINITROTOLUENES, SOLID
Marine pollutant:yes

IATA
UN number: 3454 Class: 6.1 Packing group: II
Proper shipping name: Dinitrotoluenes, solid

15. REGULATORY INFORMATION

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

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
2,4-Dinitrotoluene	121-14-2	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
2,4-Dinitrotoluene	121-14-2	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
2,4-Dinitrotoluene	121-14-2	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
2,4-Dinitrotoluene	121-14-2	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
	121-14-2	2007-09-28

2,4-Dinitrotoluene

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. 2,4-Dinitrotoluene	CAS-No. 121-14-2	Revision Date 2007-09-28

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
H301	Toxic if swallowed.
H301 + H311 + H331	Toxic if swallowed, in contact with skin or if inhaled
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H361	Suspected of damaging fertility or the unborn child.

HMIS Rating

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

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0
Health hazard:	2
Fire Hazard:	1
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.8 Revision Date: 11/04/2015 Print Date: 05/28/2016

MATERIAL SAFETY DATA SHEET

Date Printed: 05/24/2004
Date Updated: 03/10/2004
Version 1.5

Section 1 - Product and Company Information

Product Name	2-BUTANONE, 99.5+%, HPLC GRADE
Product Number	270695
Brand	ALDRICH
Company	Sigma-Aldrich
Street Address	3050 Spruce Street
City, State, Zip, Country	SAINT LOUIS MO 63103 US
Technical Phone:	314 771 5765
Emergency Phone:	414 273 3850 Ext. 5996
Fax:	800 325 5052

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
2-BUTANONE	78-93-3	Yes

Formula: C4H8O

Synonyms: Acetone, methyl- * Aethylmethylketon (German) * Butanone * 2-Butanone (OSHA) * Butanone 2 (French) * 3-Butanone * Ethyl methyl cetone (French) * Ethylmethylketon (Dutch) * Ketone, ethyl methyl * Meetco * MEK (OSHA) * Methyl acetone * Methyl ethyl ketone (ACGIH:OSHA) * Metiletilchetone (Italian) * Metyloetyloketon (Polish) * RCRA waste number U159

RTECS Number: EL6475000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Flammable (USA) Highly Flammable (EU). Irritant.
Irritating to respiratory system and skin. Risk of serious damage to eyes. Vapors may cause drowsiness and dizziness.
Target organ(s): Central nervous system.

HMIS RATING

HEALTH: 2*
FLAMMABILITY: 3
REACTIVITY: 1

NFPA RATING

HEALTH: 2
FLAMMABILITY: 3
REACTIVITY: 1

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE
If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE
In case of contact, immediately wash skin with soap and copious amounts of water.

EYE EXPOSURE
In case of contact, immediately flush eyes with copious amounts of water for at least 15 minutes.

Section 5 - Fire Fighting Measures

FLAMMABLE HAZARDS
Flammable Hazards: Yes

EXPLOSION HAZARDS
Vapor may travel considerable distance to source of ignition and flash back. Container explosion may occur under fire conditions.

FLASH POINT
30 ˚F -1 ˚C Method: closed cup

EXPLOSION LIMITS
Lower: 1.8 % Upper: 10.1 %

AUTOIGNITION TEMP
516 ˚C

FLAMMABILITY
N/A

EXTINGUISHING MEDIA
Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING
Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Flammable liquid. Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL
Evacuate area. Shut off all sources of ignition. Use nonsparking tools.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP
Cover with dry-lime, sand, or soda ash. Place in covered containers using non-sparking tools and transport outdoors. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING
User Exposure: Do not breathe vapor. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE
Suitable: Keep tightly closed. Keep away from heat, sparks, and open flame. Store in a cool dry place. Store under nitrogen.

SPECIAL REQUIREMENTS
Hygroscopic.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS
Safety shower and eye bath. Use nonsparking tools. Mechanical exhaust required.

PERSONAL PROTECTIVE EQUIPMENT
Respiratory: Government approved respirator.
Hand: Compatible chemical-resistant gloves.
Eye: Chemical safety goggles.

GENERAL HYGIENE MEASURES
Remove and wash contaminated clothing promptly. Wash thoroughly after handling.

EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA	ACGIH	STEL	300 PPM
USA	ACGIH	TWA	200 PPM
USA	MSHA Standard-air	TWA	200 PPM (590 MG/M3)
USA	OSHA.	PEL	8H TWA 200 PPM (590 MG/M3)
New Zealand OEL			
Remarks: check ACGIH TLV			
USA	NIOSH	TWA	200 PPM
		STEL	300 PPM

EXPOSURE LIMITS

Country	Source	Type	Value
Poland		NDS	200 MG/M3
Poland		NDSCh	850 MG/M3
Poland		NDSP	-

Section 9 - Physical/Chemical Properties

Appearance	Physical State: Clear liquid Color: Colorless

Property	Value	At Temperature or Pressure
Molecular Weight	72.11 AMU	
pH	N/A	
BP/BP Range	79 - 80 °C	
MP/MP Range	-87 °C	
Freezing Point	-85.9 °C	
Vapor Pressure	71 mmHg	20 °C
Vapor Density	2.49 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	0.804 g/cm3	

Bulk Density	N/A	
Odor Threshold	5.4 - 1 ppm	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	0.4 Pas	25 ˚C
Surface Tension	24.6 mN/m	20 ˚C
Partition Coefficient	Log Kow: 0.29	
Decomposition Temp.	N/A	
Flash Point	30 ˚F -1 ˚C	Method: closed cup
Explosion Limits	Lower: 1.8 %	
	Upper: 10.1 %	
Flammability	N/A	
Autoignition Temp	516 ˚C	
Refractive Index	1.379	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	Solubility in Water:soluble	
	Other Solvents: ALCOHOL, ETHER, ACETONE BENZENE	

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.
Conditions to Avoid: Protect from moisture.
Materials to Avoid: Oxidizing agents, Strong reducing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Causes skin irritation.
Skin Absorption: May be harmful if absorbed through the skin.
Eye Contact: Causes severe eye irritation.
Inhalation: Material is irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.
Ingestion: May be harmful if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)

Central nervous system.

SIGNS AND SYMPTOMS OF EXPOSURE

Can cause CNS depression. Exposure can cause: Gastrointestinal disturbances. Narcotic effect.

TOXICITY DATA

Oral
Rat
2737 mg/kg
LD50

Inhalation
Rat
23,500 mg/m3
LC50

Intraperitoneal
Rat
607 MG/KG
LD50

Oral
Mouse
4050 mg/kg
LD50

Inhalation
Mouse
32,000 mg/m3
LC50

Intraperitoneal
Mouse
616 MG/KG
LD50

Skin
Rabbit
6480 mg/kg
LD50

Inhalation
Mammal
38,000 mg/m3
LC50

IRRITATION DATA

Eyes
Human
350 ppm

Skin
Rabbit
500 mg
24H
Remarks: Moderate irritation effect

Skin
Rabbit
402 mg
24H
Remarks: Mild irritation effect

Skin
Rabbit
13.78 mg
24H
Remarks: Open irritation test

Eyes
Rabbit
80 mg

CHRONIC EXPOSURE - TERATOGEN

Species: Rat
Dose: 3000 PPM/7H
Route of Application: Inhalation
Exposure Time: (6-15D PREG)
Result: Specific Developmental Abnormalities: Craniofacial (including nose and tongue). Specific Developmental Abnormalities: Urogenital system. Specific Developmental Abnormalities: Homeostasis

Species: Rat
Dose: 1000 PPM/7H
Route of Application: Inhalation
Exposure Time: (6-15D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system.

Species: Mouse
Dose: 3000 PPM/7H
Route of Application: Inhalation
Exposure Time: (6-15D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Section 12 - Ecological Information

ACUTE ECOTOXICITY TESTS

Test Type: EC50 Daphnia
Species: Daphnia magna
Time: 24 h
Value: 7,060 mg/l

Test Type: LC50 Fish
Species: Leuciscus idus
Time: 48 h
Value: 4,600 - 4,880 mg/l

Test Type: LC50 Fish
Species: Pimephales promelas (Fathead minnow)
Time: 96 h
Value: 3,130 - 3,320 mg/l

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION
Contact a licensed professional waste disposal service to dispose of this material. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT
Proper Shipping Name: Ethyl methyl ketone [or] Methyl ethyl ketone
UN#: 1193
Class: 3

Packing Group: Packing Group II
Hazard Label: Flammable liquid
PIH: Not PIH

IATA
Proper Shipping Name: Methyl ethyl ketone
IATA UN Number: 1193
Hazard Class: 3
Packing Group: II

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION
Symbol of Danger: F Xi
Indication of Danger: Highly Flammable. Irritant.
R: 11 36 66 67
Risk Statements: Highly flammable. Irritating to eyes. Repeated exposure may cause skin dryness or cracking. Vapors may cause drowsiness and dizziness.
S: 9 16
Safety Statements: Keep container in a well-ventilated place. Keep away from sources of ignition - no smoking.

US CLASSIFICATION AND LABEL TEXT
Indication of Danger: Flammable (USA) Highly Flammable (EU). Irritant.
Risk Statements: Irritating to respiratory system and skin. Risk of serious damage to eyes. Vapors may cause drowsiness and dizziness.
Safety Statements: Keep away from sources of ignition - no smoking. Take precautionary measures against static discharges. In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear eye/face protection.
US Statements: Target organ(s): Central nervous system.

UNITED STATES REGULATORY INFORMATION
SARA LISTED: Yes
DEMINIMIS: 1 %
NOTES: This product is subject to SARA section 313 reporting requirements.
TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION
WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: Yes
NDSL: No

Section 16 - Other Information

DISCLAIMER
For R&D use only. Not for drug, household or other uses.

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

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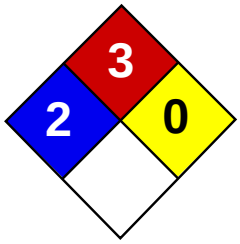

Material Safety Data Sheet
2-Hexanone MSDS

Section 1: Chemical Product and Company Identification

Product Name: 2-Hexanone

Catalog Codes: SLH2950

CAS#: 591-78-6

RTECS: MP1400000

TSCA: TSCA 8(b) inventory: 2-Hexanone

CI#: Not available.

Synonym: Methyl butyl ketone

Chemical Formula: C6H12O

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
{2-}Hexanone	591-78-6	100

Toxicological Data on Ingredients: 2-Hexanone: ORAL (LD50): Acute: 2590 mg/kg [Rat]. 2430 mg/kg [Mouse]. DERMAL (LD50): Acute: 4860 mg/kg [Rabbit]. VAPOR (LC50): Acute: 8000 ppm 4 hour(s) [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of eye contact (irritant), of inhalation (lung irritant). Hazardous in case of skin contact (irritant), of ingestion, . Slightly hazardous in case of skin contact (permeator). Inflammation of the eye is characterized by redness, watering, and itching.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated or prolonged exposure is not known to aggravate medical condition.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

Skin Contact:
After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cold water may be used. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation: Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:
Do not induce vomiting. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: 533°C (991.4°F)

Flash Points: CLOSED CUP: 23°C (73.4°F). OPEN CUP: 28°C (82.4°F) (TAG).

Flammable Limits: LOWER: 1.2% UPPER: 8%

Products of Combustion: These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances: Flammable in presence of open flames and sparks.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill:
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill:
Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapour/spray. In case of insufficient ventilation, wear suitable respiratory equipment If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes

Storage:
Flammable materials should be stored in a separate safety storage cabinet or room. Keep away from heat. Keep away from sources of ignition. Keep container tightly closed. Keep in a cool, well-ventilated place. Ground all equipment containing material. A refrigerated room would be preferable for materials with a flash point lower than 37.8°C (100°F).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 25 CEIL: 40 (ppm) TWA: 100 CEIL: 165 (mg/m3) Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Not available.

Taste: Not available.

Molecular Weight: 100.16 g/mole

Color: Colorless to light yellow.

pH (1% soln/water): Not available.

Boiling Point: 127.5°C (261.5°F)

Melting Point: -56.9°C (-70.4°F)

Critical Temperature: Not available.

Specific Gravity: 0.8113 (Water = 1)

Vapor Pressure: 12 mm of Hg (@ 20°C)

Vapor Density: 3.45 (Air = 1)

Volatility: Not available.

Odor Threshold: 0.18 ppm

Water/Oil Dist. Coeff.: The product is equally soluble in oil and water; log(oil/water) = 0

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, acetone.

Solubility:

Easily soluble in acetone. Partially soluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Not available.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: No.

Section 11: Toxicological Information

Routes of Entry: Eye contact. Inhalation. Ingestion.

Toxicity to Animals:
WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 2430 mg/kg [Mouse]. Acute dermal toxicity (LD50): 4860 mg/kg [Rabbit]. Acute toxicity of the vapor (LC50): 8000 ppm 4 hour(s) [Rat].

Chronic Effects on Humans: Not available.

Other Toxic Effects on Humans:
Very hazardous in case of inhalation (lung irritant). Hazardous in case of skin contact (irritant), of ingestion, . Slightly hazardous in case of skin contact (permeator).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Passes through the placental barrier in animal. Testicular damage in animal.

Special Remarks on other Toxic Effects on Humans: Not available.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are more toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification: Class 3: Flammable liquid.

Identification: : Ketone Liquid, n.o.s.(2-Hexanone) : UN1224 PG: III

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
Rhode Island RTK hazardous substances: 2-Hexanone Pennsylvania RTK: 2-Hexanone Florida: 2-Hexanone Massachusetts RTK: 2-Hexanone New Jersey: 2-Hexanone TSCA 8(b) inventory: 2-Hexanone

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F).

DSCL (EEC):
R10- Flammable. R37/38- Irritating to respiratory system and skin. R41- Risk of serious damage to eyes.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 3

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 3

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/09/2005 05:43 PM

Last Updated: 05/21/2013 12:00 PM

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Fisher Scientific

Part of Thermo Fisher Scientific

SAFETY DATA SHEET

Revision Date 10-Feb-2015 **Revision Number** 1

1. Identification

Product Name **2-Methylnaphthalene, 99% (gc)**

Cat No. : **AC414551000; AC414555000**

Synonyms No information available

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Entity / Business Name
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute oral toxicity	Category 4
Skin Corrosion/irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Respiratory system.	

Label Elements

Signal Word
Warning

Hazard Statements
Harmful if swallowed
Causes skin irritation
Causes serious eye irritation
May cause respiratory irritation

Precautionary Statements
Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell
Skin
IF ON SKIN: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
Ingestion
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Storage
Store in a well-ventilated place. Keep container tightly closed
Store locked up
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Toxic to aquatic life with long lasting effects

3. Composition / information on ingredients

Component	CAS-No	Weight %
2-Methylnaphthalene	91-57-6	99.0

4. First-aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes.

Inhalation Move to fresh air.

Ingestion Do not induce vomiting.

Most important symptoms/effects No information available.
Notes to Physician Treat symptomatically

5. Fire-fighting measures

Unsuitable Extinguishing Media No information available

Flash Point
Method - No information available

Autoignition Temperature No information available
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products
None known
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
2	1	0	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment.
Environmental Precautions See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage.

Methods for Containment and Clean Up No information available.

7. Handling and storage

Handling Ensure adequate ventilation.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
2-Methylnaphthalene	TWA: 0.5 ppm Skin		

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
2-Methylnaphthalene			TWA: 0.5 ppm Skin

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Solid
Appearance	No information available
Odor	Odorless
Odor Threshold	No information available
pH	
Melting Point/Range	37 38 °C
Boiling Point/Range	°C
Flash Point	
Evaporation Rate	No information available
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	< 1 mmHg @ 25 °C
Vapor Density	No information available
Relative Density	1.0000
Solubility	Insoluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	C11H10
Molecular Weight	142.20

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products.

Incompatible Materials Strong oxidizing agents

Hazardous Decomposition Products None under normal use conditions

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
2-Methylnaphthalene	1630 mg/kg (Rat)	Not listed	Not listed

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
2-Methylnaphthalene	91-57-6	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Respiratory system
STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity
Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
2-Methylnaphthalene	Not listed	Pimephales promelas:LC50 = 2.5mg/L	Not listed	EC50 = 1.5 mg/L/48h

Persistence and Degradability No information available
Bioaccumulation/ Accumulation No information available.

Mobility No information available.

Component	log Pow
2-Methylnaphthalene	3.86

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT Not regulated
TDG Not regulated
IATA Not regulated
IMDG/IMO Not regulated

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
2-Methylnaphthalene	X	X	-	202-078-3	-		X	X	X	X	-

Legend:

X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313 Not applicable

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act Not applicable

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
Not applicable

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
2-Methylnaphthalene	-	X	-	-	-

U.S. Department of Transportation

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class D1B Toxic materials

D2B Toxic materials

16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Revision Date 10-Feb-2015
Print Date 10-Feb-2015
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS

SAFETY DATA SHEET

Revision Date 10-Feb-2015 **Revision Number** 1

1. Identification

Product Name **p-Cymene**

Cat No. : **AC111760000; AC111760010; AC111760025; AC111760100; AC111762500**

Synonyms Dolcymene; p-Isopropyltoluene

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Entity / Business Name
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	Category 3
Skin Corrosion/irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Respiratory system.	
Aspiration Toxicity	Category 1

Label Elements

Signal Word
Danger

Hazard Statements
Flammable liquid and vapor
May be fatal if swallowed and enters airways
Causes skin irritation
Causes serious eye irritation
May cause respiratory irritation

Precautionary Statements
Prevention
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Keep cool
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician if you feel unwell
Skin
If skin irritation occurs: Get medical advice/attention
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
Ingestion
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Do NOT induce vomiting
Fire
In case of fire: Use CO2, dry chemical, or foam for extinction
Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
None identified

3. Composition / information on ingredients

Component	CAS-No	Weight %
p-Cymene	99-87-6	>95

4. First-aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Obtain medical attention.

Inhalation Remove from exposure, lie down. Move to fresh air. If breathing is difficult, give oxygen. If

not breathing, give artificial respiration. Obtain medical attention.

Ingestion Do not induce vomiting. Clean mouth with water. Get medical attention.

Most important symptoms/effects Breathing difficulties. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Water spray. Carbon dioxide (CO_2). Dry chemical. Use water spray to cool unopened containers. chemical foam.

Unsuitable Extinguishing Media No information available

Flash Point 47 °C / 116.6 °F
Method - No information available

Autoignition Temperature 435 °C / 815 °F
Explosion Limits
Upper 5.60%
Lower .70%
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Flammable. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated.

Hazardous Combustion Products
Carbon monoxide (CO) Carbon dioxide (CO_2)
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
3	2	0	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment.
Environmental Precautions See Section 12 for additional ecological information.

Methods for Containment and Clean Up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.

7. Handling and storage

Handling Avoid contact with skin and eyes. Do not breathe dust. Do not breathe vapors or spray mist. Take precautionary measures against static discharges. Use explosion-proof equipment. Use only non-sparking tools.

Storage Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat and sources of ignition. Flammables area.

8. Exposure controls / personal protection

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Liquid
Appearance	Clear
Odor	aromatic
Odor Threshold	No information available
pH	No information available
Melting Point/Range	-68 °C / -90.4 °F
Boiling Point/Range	176 - 178 °C / 348.8 - 352.4 °F @ 760 mmHg
Flash Point	47 °C / 116.6 °F
Evaporation Rate	No information available
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	5.60%
Lower	.70%
Vapor Pressure	1.5 mmHg @ 20 °C
Vapor Density	4.62 (Air = 1.0)
Relative Density	0.854
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	435 °C / 815 °F
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	C10 H14
Molecular Weight	134.22

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Keep away from open flames, hot surfaces and sources of ignition. Excess heat. Incompatible products.

Incompatible Materials Strong oxidizing agents, Strong acids, Strong bases

Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO_2)

Hazardous Polymerization No information available.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
p-Cymene	3669 mg/kg (Rat)	Not listed	Not listed

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
p-Cymene	99-87-6	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects Not mutagenic in AMES Test

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure Respiratory system

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity

Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
p-Cymene	Not listed	LC50: 48 mg/L/96h (sheepshead minnow)	Not listed	LC50: 6.5 mg/L/48h

Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available.

Mobility .

Component	log Pow
p-Cymene	4.1

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No	UN2046
Hazard Class	3
Packing Group	III

TDG

UN-No	UN2046
Hazard Class	3
Packing Group	III

IATA

UN-No	2046
Proper Shipping Name	CYMENES
Hazard Class	3
Packing Group	III

IMDG/IMO

UN-No	2046
Proper Shipping Name	CYMENES
Hazard Class	3
Packing Group	III

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
p-Cymene	X	X	-	202-796-7	-		X	X	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
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P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313 Not applicable

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act Not applicable

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
Not applicable

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
p-Cymene	X	-	X	-	-

U.S. Department of Transportation

Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class B2 Flammable liquid
D2B Toxic materials

16. Other information

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Revision Date 10-Feb-2015
Print Date 10-Feb-2015
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS

SAFETY DATA SHEET

Version 5.4
Revision Date 01/02/2015
Print Date 12/11/2015

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Acenaphthene

Product Number : 215376
Brand : Aldrich

CAS-No. : 83-32-9

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Carcinogenicity (Category 1B), H350
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H350 May cause cancer.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.

P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear eye protection/ face protection.
P280	Wear protective gloves.
P281	Use personal protective equipment as required.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms : 1,8-Ethylenenaphthalene

Formula : $C_{12}H_{10}$
Molecular weight : 154.21 g/mol
CAS-No. : 83-32-9
EC-No. : 201-469-6

Hazardous components

Component	Classification	Concentration
Acenaphthene		
	Skin Irrit. 2; Eye Irrit. 2A; Carc. 1B; STOT SE 3; Aquatic Acute 1; Aquatic Chronic 1; H315, H319, H335, H350, H410	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

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

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): Non Combustible Solids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator.For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: solid
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 90 - 94 °C (194 - 201 °F) - lit.
f)	Initial boiling point and boiling range	279 °C (534 °F) - lit.
g)	Flash point	125.0 °C (257.0 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available

k)	Vapour pressure	13.3 hPa (10.0 mmHg) at 131.0 °C (267.8 °F)
l)	Vapour density	No data available
m)	Relative density	No data available
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	log Pow: 3.39 - 4.19
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

LD50 Intraperitoneal - Rat - 600 mg/kg

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Acenaphthene)

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: Reasonably anticipated to be a human carcinogen (Acenaphthene)

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: AB1000000

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

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 0.67 mg/l - 96.0 h
	LC50 - Pimephales promelas (fathead minnow) - 0.6 - 1.73 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 1.27 - 3.45 mg/l - 48 h
Toxicity to algae	EC50 - Pseudokirchneriella subcapitata (green algae) - 0.52 - 0.53 mg/l - 96 h

12.2 Persistence and degradability

12.3 Bioaccumulative potential

Bioaccumulation	Lepomis macrochirus (Bluegill) - 28 d - 0.00894 mg/l
	Bioconcentration factor (BCF): 387

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substances, solid, n.o.s. (Acenaphthene)
Reportable Quantity (RQ): 100 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Acenaphthene)
Marine pollutant:yes

IATA
UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Acenaphthene)

Further information
EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

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

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

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Acenaphthene	83-32-9	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Acenaphthene	83-32-9	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Acenaphthene	83-32-9	1993-04-24

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Acenaphthene	83-32-9	2007-09-28

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
Eye Irrit.	Eye irritation
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

H350	May cause cancer.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

HMIS Rating

Health hazard:	0
Chronic Health Hazard:	*
Flammability:	1
Physical Hazard	0

NFPA Rating

Health hazard:	0
Fire Hazard:	1
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.4 Revision Date: 01/02/2015 Print Date: 12/11/2015

SAFETY DATA SHEET

Revision Date 10-Feb-2015 **Revision Number** 1

1. Identification

Product Name **Poly(acenaphthylene)**

Cat No. : **AC178020000; AC178020050; AC178020100**

Synonyms None.

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Entity / Business Name
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification
Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Based on available data, the classification criteria are not met

Label Elements
None required

Hazards not otherwise classified (HNOC)
None identified

Unknown Acute Toxicity
.? % of the mixture consists of ingredients of unknown toxicity.

3. Composition / information on ingredients

Component	CAS-No	Weight %
Poly(acenaphthylene)	25036-01-5	100

4. First-aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated

clothes and shoes.

Inhalation Remove from exposure, lie down. Move to fresh air.

Ingestion Do not induce vomiting. Never give anything by mouth to an unconscious person. Drink plenty of water. If possible drink milk afterwards.

Most important symptoms/effects No information available.
Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Water spray. Carbon dioxide (CO_2). Dry chemical. alcohol-resistant foam.

Unsuitable Extinguishing Media No information available

Flash Point No information available
Method - No information available

Autoignition Temperature No information available
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products
Thermal decomposition can lead to release of irritating gases and vapors Carbon monoxide (CO) Carbon dioxide (CO_2)
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health	Flammability	Instability	Physical hazards
0	0	0	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment.
Environmental Precautions See Section 12 for additional ecological information.

Methods for Containment and Clean Up Sweep up or vacuum up spillage and collect in suitable container for disposal.

7. Handling and storage

Handling Avoid contact with skin and eyes. Avoid contact with clothing. Remove and wash contaminated clothing before re-use. Avoid breathing vapors or mists. Do not ingest. Wash thoroughly after handling.

Storage Keep in a dry, cool and well-ventilated place. Keep container tightly closed.

8. Exposure controls / personal protection

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Measures Ensure adequate ventilation, especially in confined areas. Ventilation systems.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Wear a NIOSH/MSHA or European Standard EN 149 approved full-facepiece airline respirator in the positive pressure mode with emergency escape provisions.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Powder Solid
Appearance	Yellow
Odor	Odorless
Odor Threshold	No information available
pH	No information available
Melting Point/Range	No data available
Boiling Point/Range	No information available
Flash Point	No information available
Evaporation Rate	No information available
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available
Vapor Density	No information available
Relative Density	No information available
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	No information available

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products.

Incompatible Materials Oxidizing agents

Hazardous Decomposition Products Thermal decomposition can lead to release of irritating gases and vapors, Carbon monoxide (CO), Carbon dioxide (CO_2)

Hazardous Polymerization No information available.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information No acute toxicity information is available for this product

Oral LD50 Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.
Dermal LD50 Based on ATE data, the classification criteria are not met. ATE > 2000 mg/kg.
Mist LC50 Based on ATE data, the classification criteria are not met. ATE > 5 mg/l.
Component Information
Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Poly(acenaphthylene)	25036-01-5	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known
STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available
Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity
Do not empty into drains.

Persistence and Degradability No information available
Bioaccumulation/ Accumulation No information available.

Mobility No information available.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT Not regulated
TDG Not regulated
IATA Not regulated
IMDG/IMO Not regulated

15. Regulatory information

International Inventories

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313 Not applicable

SARA 311/312 Hazardous Categorization

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act Not applicable

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
Not applicable

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know Not applicable

U.S. Department of Transportation

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class Non-controlled

16. Other information

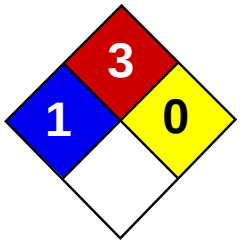
Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Revision Date 10-Feb-2015
Print Date 10-Feb-2015
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS



Material Safety Data Sheet
Acetone MSDS

Section 1: Chemical Product and Company Identification

Product Name: Acetone

Catalog Codes: SLA3502, SLA1645, SLA3151, SLA3808

CAS#: 67-64-1

RTECS: AL3150000

TSCA: TSCA 8(b) inventory: Acetone

CI#: Not applicable.

Synonym: 2-propanone; Dimethyl Ketone; Dimethylformaldehyde; Pyroacetic Acid

Chemical Name: Acetone

Chemical Formula: C3-H6-O

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Acetone	67-64-1	100

Toxicological Data on Ingredients: Acetone: ORAL (LD50): Acute: 5800 mg/kg [Rat]. 3000 mg/kg [Mouse]. 5340 mg/kg [Rabbit]. VAPOR (LC50): Acute: 50100 mg/m 8 hours [Rat]. 44000 mg/m 4 hours [Mouse].

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Reproductive system/toxin/male [SUSPECTED]. The substance is toxic to central nervous system (CNS). The substance may be toxic to kidneys, the reproductive system, liver, skin. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Get medical attention.

Skin Contact:
In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention if symptoms appear.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek medical attention.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: 465°C (869°F)

Flash Points: CLOSED CUP: -20°C (-4°F). OPEN CUP: -9°C (15.8°F) (Cleveland).

Flammable Limits: LOWER: 2.6% UPPER: 12.8%

Products of Combustion: These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances: Highly flammable in presence of open flames and sparks, of heat.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Slightly explosive in presence of open flames and sparks, of oxidizing materials, of acids.

Fire Fighting Media and Instructions:
Flammable liquid, soluble or dispersed in water. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use alcohol foam, water spray or fog.

Special Remarks on Fire Hazards: Vapor may travel considerable distance to source of ignition and flash back.

Special Remarks on Explosion Hazards:
Forms explosive mixtures with hydrogen peroxide, acetic acid, nitric acid, nitric acid + sulfuric acid, chromic anydride, chromyl chloride, nitrosyl chloride, hexachloromelamine, nitrosyl perchlorate, nitryl perchlorate, permonosulfuric acid, thiodiglycol + hydrogen peroxide, potassium ter-butoxide, sulfur dichloride, 1-methyl-1,3-butadiene, bromoform, carbon, air, chloroform, thitriazylperchlorate.

Section 6: Accidental Release Measures

Small Spill:
Dilute with water and mop up, or absorb with an inert dry material and place in an appropriate waste disposal container.

Large Spill:
Flammable liquid. Keep away from heat. Keep away from sources of ignition. Stop leak if without risk. Absorb with DRY earth, sand or other non-combustible material. Do not touch spilled material. Prevent entry into sewers, basements or confined areas; dike if needed. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up.. Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, reducing agents, acids, alkalis.

Storage:
Store in a segregated and approved area (flammables area) . Keep container in a cool, well-ventilated area. Keep container tightly closed and sealed until ready for use. Keep away from direct sunlight and heat and avoid all possible sources of ignition (spark or flame).

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection:
Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 500 STEL: 750 (ppm) from ACGIH (TLV) [United States] TWA: 750 STEL: 1000 (ppm) from OSHA (PEL) [United States] TWA: 500 STEL: 1000 [Austalia] TWA: 1185 STEL: 2375 (mg/m3) [Australia] TWA: 750 STEL: 1500 (ppm) [United Kingdom (UK)] TWA: 1810 STEL: 3620 (mg/m3) [United Kingdom (UK)] TWA: 1800 STEL: 2400 from OSHA (PEL) [United States]Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Fruity. Mint-like. Fragrant. Ethereal

Taste: Pungent, Sweetish

Molecular Weight: 58.08 g/mole

Color: Colorless. Clear

pH (1% soln/water): Not available.

Boiling Point: 56.2°C (133.2°F)

Melting Point: -95.35 (-139.6°F)

Critical Temperature: 235°C (455°F)

Specific Gravity: 0.79 (Water = 1)

Vapor Pressure: 24 kPa (@ 20°C)

Vapor Density: 2 (Air = 1)

Volatility: Not available.

Odor Threshold: 62 ppm

Water/Oil Dist. Coeff.: The product is more soluble in water; log(oil/water) = -0.2

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water.

Solubility: Easily soluble in cold water, hot water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, ignition sources, exposure to moisture, air, or water, incompatible materials.

Incompatibility with various substances: Reactive with oxidizing agents, reducing agents, acids, alkalis.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation.

Toxicity to Animals:
WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 3000 mg/kg [Mouse]. Acute toxicity of the vapor (LC50): 44000 mg/m3 4 hours [Mouse].

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH. DEVELOPMENTAL TOXICITY: Classified Reproductive system/toxin/female, Reproductive system/toxin/male [SUSPECTED]. Causes damage to the following organs: central nervous system (CNS). May cause damage to the following organs: kidneys, the reproductive system, liver, skin.

Other Toxic Effects on Humans:
Hazardous in case of skin contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:
May affect genetic material (mutagenicity) based on studies with yeast (S. cerevisiae), bacteria, and hamster fibroblast cells. May cause reproductive effects (fertility) based upon animal studies. May contain trace amounts of benzene and formaldehyde which may cancer and birth defects. Human: passes the placental barrier.

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: May cause skin irritation. May be harmful if absorbed through the skin. Eyes: Causes eye irritation, characterized by a burning sensation, redness, tearing, inflammation, and possible corneal injury. Inhalation: Inhalation at high concentrations affects the sense organs, brain and causes respiratory tract irritation. It also may affect the Central Nervous System (behavior) characterized by dizzness, drowsiness, confusion, headache, muscle weakeness, and possibly motor incoordination, speech abnormalities, narcotic effects and coma. Inhalation may also affect the gastrointestinal tract (nausea, vomiting). Ingestion: May cause irritation of the digestive (gastrointestinal) tract (nausea, vomiting). It may also

affect the Central Nevous System (behavior), characterized by depression, fatigue, excitement, stupor, coma, headache, altered sleep time, ataxia, tremors as well at the blood, liver, and urinary system (kidney, bladder, ureter) and endocrine system. May also have musculoskeletal effects. Chronic Potential Health Effects: Skin: May cause dermatitis. Eyes: Eye irritation.

Section 12: Ecological Information

Ecotoxicity:
Ecotoxicity in water (LC50): 5540 mg/l 96 hours [Trout]. 8300 mg/l 96 hours [Bluegill]. 7500 mg/l 96 hours [Fatthead Minnow]. 0.1 ppm any hours [Water flea].

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 3: Flammable liquid.

Identification: : Acetone UNNA: 1090 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
California prop. 65: This product contains the following ingredients for which the State of California has found to cause reproductive harm (male) which would require a warning under the statute: Benzene California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: Benzene California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Benzene, Formaldehyde Connecticut hazardous material survey.: Acetone Illinois toxic substances disclosure to employee act: Acetone Illinois chemical safety act: Acetone New York release reporting list: Acetone Rhode Island RTK hazardous substances: Acetone Pennsylvania RTK: Acetone Florida: Acetone Minnesota: Acetone Massachusetts RTK: Acetone Massachusetts spill list: Acetone New Jersey: Acetone New Jersey spill list: Acetone Louisiana spill reporting: Acetone California List of Hazardous Substances (8 CCR 339): Acetone TSCA 8(b) inventory: Acetone TSCA 4(a) final test rules: Acetone TSCA 8(a) IUR: Acetone

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):
CLASS B-2: Flammable liquid with a flash point lower than 37.8°C (100°F). CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC):
R11- Highly flammable. R36- Irritating to eyes. S9- Keep container in a well-ventilated place. S16- Keep away from sources of ignition - No smoking. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 3

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 3

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References:
-Material safety data sheet issued by: la Commission de la SantÃ© et de la SÃ©curitÃ© du Travail du QuÃ©bec. -The Sigma-Aldrich Library of Chemical Safety Data, Edition II. -Hawley, G.G.. The Condensed Chemical Dictionary, 11e ed., New York N.Y., Van Nostrand Reinold, 1987. LOLI, RTECS, HSDB databases. Other MSDSs

Other Special Considerations: Not available.

Created: 10/10/2005 08:13 PM

Last Updated: 05/21/2013 12:00 PM

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SAFETY DATA SHEET

1. Identification

Product identifier **ATOMIZED ALUMINUM POWDER**

Other means of identification

SDS number 123

Chemical formula Al

Version # 08

Revision date August 11, 2015.

Other means of identification

Synonyms All non-alloyed, non-coated nodular aluminum powder containing < 1% trace elements * Grade 13, 101, 102, 104, 101T, 120, 121, 123, 1124, 1202, 1233, 1235, 1401/S2(1406), 1403, 1404, 1407, 1401/S9(1409), 1125, * 4402, 6401, 7123, 7124, 7125, 7401

Recommended use Various metallurgical/chemical/structural/coating applications

Recommended restrictions None known.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Alcoa Inc.
201 Isabella Street
Pittsburgh, PA USA 15212
Health and Safety Tel: +1-412-553-4649
Health and Safety Fax: +1-412-553-4822
Health and Safety Email: accmsds@alcoa.com

Alcoa Inc.
Rockdale Operations
P.O. Box 472
Rockdale, TX 76567
Tel: +1-512-446-8681

Poços de Caldas
Rodovia Poços de Caldas/Andradas, km 10
CEP 37.719-900
Poços de Caldas, Minas Gerais
Tel.: (+55 35) 2101-5000
E-mail: pfacomercialprimarios@alcoa.com.br

Emergency Information CHEMTREC: +1-703-527-3887 +1-800-424-9300 (24 Hour Emergency Telephone, multiple languages spoken); ALCOA: +1-412-553-4001 (24 Hour Emergency Telephone, only English spoken)

Website For a current Safety Data Sheet, refer to Alcoa websites: www.alcoa.com or internally at my.alcoa.com EHS Community

2. Hazard(s) identification

Physical hazards Not classified.

Health hazards Not classified.

Environmental hazards Not classified.

Authority defined hazards Combustible dust

Label elements

Hazard symbol None.

Signal word Warning

Hazard statement May form combustible dust concentrations in air.

Precautionary statement

Prevention	Care should be taken during bulk handling to prevent accumulation/generation over time of 75 micron or finer particles. Use only non-sparking tools and natural bristle brushes. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Prevent dust accumulation to minimize explosion hazard. Take precautionary measures against static discharge.
Response	In case of fire: Use appropriate media for extinction.
Storage	Store in a dry place and/or in closed container. Keep away from heat, sparks and open flame - No smoking.Do not allow chips, fines or dust to contact water, particularly in enclosed areas.
Disposal	Reuse or recycle material whenever possible. Material that cannot be reused may be sent to a metals reclamation facility that is able to handle fines. Waste material that cannot be reclaimed for metal value should be rendered non-reactive prior to disposal.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	Powder may ignite readily. Powder or dusts dispersed in the air can be explosive. Explosion/fire hazards may be present when: • Powder or dust are dispersed in air. • Powder or dusts are in contact with water. • Powder or dusts are in contact with certain metal oxides (e.g., rust, copper oxide).

3. Composition/information on ingredients

Composition comments Complete composition is provided below and may include some components classified as non-hazardous.

Substances

Chemical name	Common name and synonyms	CAS number	%
Aluminum powder		7429-90-5	≥99.7

4. First-aid measures

Eye contact	Dust from processing: Rinse eyes with plenty of water or saline for at least 15 minutes. Consult a physician.
Skin contact	Dust from processing: Wash with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.
Inhalation	Dust from processing: Remove to fresh air. Check for clear airway, breathing, and presence of pulse. If breathing is difficult, provide oxygen. Loosen any tight clothing on neck or chest. Provide cardiopulmonary resuscitation for persons without pulse or respirations. Consult a physician.
Ingestion	If swallowed, dilute by drinking water. Recommend quantities up to 30 mL (~1 oz.) in children and 250 mL (~9 oz.) in adults. Never give anything by mouth to a victim who is unconscious or is having convulsions. Do NOT induce vomiting. Consult a physician.
Most important symptoms/effects, acute and delayed	Dust from processing: Can cause irritation of the upper respiratory tract. See Section 11 of the SDS for additional information on health hazards.
Medical conditions aggravated by exposure	Asthma, chronic lung disease, and skin rashes.
Indication of immediate medical attention and special treatment needed	Provide general supportive measures and treat symptomatically. In case of shortness of breath, give oxygen.
General information	If exposed or concerned: Get medical advice/attention. In case of shortness of breath, give oxygen.

5. Fire-fighting measures

Suitable extinguishing media	Use Class D extinguishing agents on fines, dust or molten metal.
Unsuitable extinguishing media	DO NOT USE water, halogenated agents, or ABC dry chemical agents. These fire extinguishing agents will react with the burning material.

Specific hazards arising from the chemical	Alcoa aluminum powders were tested by the United States Department of Interior Bureau of Mines in 1991, under UN criteria and found not to meet the definition of a hazard class 4. Care should be taken, however, during bulk handling to prevent accumulation/generation over time of 75 micron or finer particles. May be a potential hazard under the following conditions: • Dust clouds may be explosive. Even a minor dust cloud can explode violently. Dust accumulation on the floor, ledges and beams can present a risk of ignition, flame propagation and secondary explosions. • Powder or dusts in contact with water can generate flammable/explosive hydrogen gas. These gases could present an explosion hazard in confined or poorly ventilated spaces. • Powder or dusts are in contact with certain metal oxides (e.g., rust, copper oxide).
Special protective equipment and precautions for firefighters	Firefighters should wear NIOSH approved, positive pressure, self-contained breathing apparatus and full protective clothing when appropriate.
Fire fighting equipment/instructions	Use gentle surface application of Class D extinguishing agent or dry inert granular material (e.g., sand) to cover and ring the burning material. Avoid mixing of the extinguishing agent with the burning material. Apply extinguishing media carefully to avoid creating airborne dust. Do not disturb the material until completely cool. If possible, isolate the burning material to prevent fire spread, and allow the material to burn itself out. Move undamaged containers away from heat or flame, if possible.
General fire hazards	Dust and fines from processing may ignite readily. Dust or fines dispersed in the air can be explosive.
Explosion data	
Sensitivity to mechanical impact	Not sensitive.
Sensitivity to static discharge	Static electricity and formation of sparks must be prevented. Prevent electrostatic charge build-up by using common bonding and grounding techniques. Use non-sparking handling equipment, tools and natural bristle brushes. Cover and reseal partially empty containers. Provide grounding and bonding where necessary to prevent accumulation of static charges during metal dust handling and transfer operations. Obtain and follow the safety procedures and equipment guides contained in Aluminum Association Bulletin F-1 and National Fire Protection Association (NFPA) Standards listed in Section 16. Use non-sparking handling equipment, tools and natural bristle brushes. Cover and reseal partially empty containers. Provide grounding and bonding where necessary to prevent accumulation of static charges during metal dust handling and transfer operations (See Section 15).

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Avoid contact with skin and eyes. Use personal protection recommended in Section 8 of the SDS.
Personal precautions, protective equipment and emergency procedures	
For emergency responders	Avoid contact with skin and eyes. Use personal protection recommended in Section 8 of the SDS.
Evacuation procedures	Keep people away from and upwind of spill/leak. Keep unnecessary personnel away.
Methods and materials for containment and cleaning up	Isolate area. Avoid the generation of dusts during clean-up. Eliminate all ignition sources (no smoking, flares, sparks, or flames in immediate area). Use only non-sparking tools and natural bristle brushes. Use dry cleanup procedures. Keep material dry. Place carefully in dry, water-tight containers. Seal containers. After complete clean-up by sweeping, area may be washed with large amounts of water if necessary. Material that cannot be reused may be sent to a metals reclamation facility that is able to handle fines. Waste material that cannot be reclaimed for metal value should be rendered non-reactive prior to disposal. For waste disposal, see section 13 of the SDS.
Environmental precautions	No specific precautions.

7. Handling and storage

Handling	Keep away from sources of ignition - No smoking. Avoid contact with skin and eyes. Care should be taken during bulk handling to prevent accumulation/generation over time of 75 micron or finer particles. Keep material dry.
Storage	Keep dry. Storage rooms must be of fire-resistant construction. Do not store powder in same room as other combustible materials.

Requirements for Processes Which Generate Dusts or Fines

Obtain and follow the safety procedures and equipment guides contained in Aluminum Association Bulletin TR-2 and National Fire Protection Association (NFPA) brochures listed in Section 16. Use non-sparking handling equipment, tools and natural bristle brush. Cover and reseal partially empty containers. Provide grounding and bonding where necessary to prevent accumulation of static charges during metal dust handling and transfer operations (See Section 15).

Local ventilation and vacuum systems must be designed to handle explosive dusts. Dry vacuums and electrostatic precipitators must not be used, unless specifically approved for use with flammable/explosive dusts. Dust collection systems must be dedicated to aluminum dust only and should be clearly labeled as such. Do not co-mingle fines of aluminum with fines of iron, iron oxide (rust) or other metal oxides.

Process equipment, storage containers, vessels and buildings should be equipped with explosion/pressure relief valves, panels and windows. Precautions must also be taken to prevent water leakage or seepage which could contact the powder. Refer to NFPA 484.

Avoid all ignition sources. Good housekeeping practices must be maintained. Dust accumulation on the floor, ledges and beams can present a risk of ignition, flame propagation and secondary explosions. Do not use compressed air to remove settled material from floors, beams or equipment . Do not allow fines or dust to contact water, particularly in enclosed areas.

8. Exposure controls/personal protection

Occupational exposure limits

U.S. - OSHA

Components	Type	Value	Form
Aluminum powder (CAS 7429-90-5)	TWA	15 mg/m3	(total dust)

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Material	Type	Value	Form
ATOMIZED ALUMINUM POWDER	PEL	5 mg/m3	Respirable dust.
		15 mg/m3	Total dust.

Components	Type	Value	Form
Aluminum powder (CAS 7429-90-5)	TWA	5 mg/m3	Respirable dust.

US ACGIH Threshold Limit Values: Time Weighted Average (TWA): mg/m3, non-standard units

Material	Type	Value	Form
ATOMIZED ALUMINUM POWDER	TWA	1 mg/m3	Respirable fraction.

Components	Type	Value	Form
Aluminum powder (CAS 7429-90-5)	TWA	1 mg/m3	Respirable fraction.

Alcoa

Material	Type	Value	Form
ATOMIZED ALUMINUM POWDER	TWA	3 mg/m3	Respirable fraction
		10 mg/m3	Total dust

Components	Type	Value	Form
Aluminum powder (CAS 7429-90-5)	TWA	3 mg/m3	Respirable fraction
		10 mg/m3	Total dust

General Use personal protective equipment as required.

Appropriate engineering controls Dust from processing: Use with adequate explosion-proof ventilation designed to handle particulates to meet the limits listed in Section 8, Exposure Guidelines.

Individual protection measures, such as personal protective equipment

Eye/face protection Wear safety glasses with side shields.

Skin protection

Hand protection Wear impervious gloves to avoid direct skin contact.

Other	Recommend fire resistant cotton or equivalent full-length fire resistant pants and jackets along with electrically conductive safety shoes or grounding straps. Great caution is required to avoid contact with unprotected electrical devices when wearing conductive safety shoes or grounding straps.
Respiratory protection	Use NIOSH-approved respiratory protection as specified by an Industrial Hygienist or other qualified professional if concentrations exceed the limits listed in Section 8. Suggested respiratory protection: N95.
Thermal hazards	Not applicable.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice. When using, do not eat, drink or smoke. Wash hands before breaks and immediately after handling the product.
Control parameters	

9. Physical and chemical properties

Form	Solid, powder.
Color	Silvery to gray.
Odor	Odorless
Odor threshold	Not applicable
pH	Not applicable
Density	0.80 - 1.30 g/cm3
Melting point/freezing point	1194.8 - 1214.6 °F (646 - 657 °C) 1220 °F (660 °C)
Initial boiling point and boiling range	Not determined 4220.6 °F (2327 °C)
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	Not applicable.
Upper/lower flammability or explosive limits	
Flammability limit - upper (%)	Not determined
Flammability limit - lower (%)	40 mg/l
Explosive properties	Dust can form an explosive mixture in air. Dust accumulation from this product may present an explosion hazard in the presence of an ignition source.
Dust explosion properties	
St class	Very strong explosion.
Vapor pressure	Not applicable
Vapor density	Not applicable
Relative density	Not determined
Solubility(ies)	Insoluble Insoluble
Partition coefficient (n-octanol/water)	Not applicable. Not applicable
Auto-ignition temperature	1202 °F (650 °C) layered
Decomposition temperature	Not applicable
Viscosity	Not applicable

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Stable under normal conditions of use, storage, and transportation as shipped.
Possibility of hazardous reactions	Hazardous polymerization does not occur.
Conditions to avoid	• Water: Slowly generates flammable and explosive hydrogen gas and heat. Generation rate is greatly increased with smaller particles (e.g., fines and dusts). Water/aluminum mixtures may be hazardous when confined. • Heat: Oxidizes at a rate dependent upon temperature and particle size.

Incompatible materials	• Acids and alkalis: Reacts to generate flammable/explosive hydrogen gas. Generation rate is greatly increased with smaller particles (e.g., fines and dusts). • Strong oxidizers: Violent reaction with considerable heat generation. Can react explosively with nitrates (e.g., ammonium nitrate and fertilizers containing nitrate) when heated or molten. • Halogenated compounds: Many halogenated hydrocarbons, including halogenated fire extinguishing agents, can react violently with finely divided or molten aluminum. • Iron oxide (rust) and other metal oxides (e.g., copper and lead oxides): A violent thermite reaction generating considerable heat can occur. Reaction with aluminum fines and dusts requires only very weak ignition sources for initiation. • Iron powder and water: Explosive reaction forming hydrogen gas when heated above 1470°F (800°C).
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Health effects associated with ingredients

Aluminum dust/fines and fumes: Low health risk by inhalation. Generally considered to be biologically inert.

Health effects associated with compounds formed during processing

No new/additional compounds are expected to be formed during processing.

Information on likely routes of exposure

Eye contact	Can cause mechanical irritation.
Skin contact	Dust from processing: Can cause mechanical irritation.
Inhalation	Dust from processing: Can cause irritation of the upper respiratory tract.
Ingestion	Can cause irritation of the gastrointestinal tract.
Symptoms related to the physical, chemical and toxicological characteristics	Dust from processing: Can cause mechanical irritation. Dust: Can cause irritation of the upper respiratory tract.

Information on toxicological effects

Acute toxicity	Based on available data, the classification criteria are not met.
Skin corrosion/irritation	Non-corrosive.
Serious eye damage/eye irritation	Can cause mechanical irritation.
Respiratory or skin sensitization	
Respiratory sensitization	Not a respiratory sensitizer.
Skin sensitization	Not a skin sensitizer.
Germ cell mutagenicity	Based on available data, the classification criteria are not met.
Neurological effects	Based on available data, the classification criteria are not met.
Pre-existing conditions aggravated by exposure	Asthma, chronic lung disease, and skin rashes.
Carcinogenicity	Does not present any cancer hazards.
Reproductive toxicity	Does not present any reproductive hazards.
Routes of exposure	Inhalation. Skin contact. Eye contact.
Specific target organ toxicity - single exposure	Based on available data, the classification criteria are not met.
Specific target organ toxicity - repeated exposure	Based on available data, the classification criteria are not met.
Aspiration hazard	Not an aspiration hazard.
Chronic effects	Not classified.
Further information	None known.

12. Ecological information

Ecotoxicity	Not expected to be harmful to aquatic organisms.

Product		Species	Test Results
ATOMIZED ALUMINUM POWDER			
Aquatic			
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)	0.16 mg/l, 96 hours

Persistence and degradability The product is not biodegradable.

Bioaccumulative potential The product does not contain any substances expected to be bioaccumulating.

Mobility in soil Not considered mobile.

Mobility in general Not considered mobile.

Other adverse effects Not available.

13. Disposal considerations

Disposal instructions Reuse or recycle material whenever possible. Material that cannot be reused may be sent to a metals reclamation facility that is able to handle fines. Waste material that cannot be reclaimed for metal value should be rendered non-reactive prior to disposal.

Local disposal regulations Dispose in accordance with all applicable regulations.

Waste codes RCRA Status: Not federally regulated in the U.S. if disposed of "as is."
RCRA waste codes other than described here may apply depending on use of the product. Status must be determined at the point of waste generation. Refer to 40 CFR 261 or state equivalent in the U.S.

Waste from residues / unused products If reuse or recycling is not possible, disposal must be made according to local or governmental regulations.

Contaminated packaging Dispose of in accordance with local regulations.

14. Transport information

General Shipping Information

Basic Shipping Information

ID number -

Proper shipping name Not regulated

Hazard class -

Packing group -

General Shipping Notes

• This material has been tested under UN criteria and found not to meet the definition of a hazard class 4 and does not meet the definition of any other hazard class.
• Standard Transportation Commodity Code: 33-991-19.
• HTS (Harmonized Tariff Schedule) code: 7603.10.0000.
• The import/export HTS (Harmonized Tariff Schedule) code given above is the United States HTS code provided by Alcoa's Customs Compliance Office in Knoxville, TN. Other country specific HTS codes may apply. If available, more information on the HTS codes will be provided on country specific Material Safety Data Sheets.
• When "Not regulated", enter the proper freight classification, SDS Number and Product Name onto the shipping paperwork.

Disclaimer

This section provides basic classification information and, where relevant, information with respect to specific modal regulations, environmental hazards and special precautions. Otherwise, it is presumed that the information is not available/not relevant

15. Regulatory information

US federal regulations In reference to Title VI of the Clean Air Act of 1990, this material does not contain nor was it manufactured using ozone-depleting chemicals.
All electrical equipment must be suitable for use in hazardous atmospheres involving aluminum powder in accordance with 29 CFR 1910.307. The National Electrical Code, NFPA 70, contains guidelines for determining the type and design of equipment and installation which will meet this requirement.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Section 311/312 hazard categories

Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - Yes — If dust clouds are generated
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Chemical name	CAS number	% by wt.
Aluminum powder	7429-90-5	≥99.7

US state regulations

US. California Proposition 65

Not Listed.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

SDS Status

August 11, 2015: Change(s) in Section: 1 and 16.
April 30, 2015 (April 30, 2015 Minor modification 0123usa): Change(s) in Section: 1, 2 Minor modification..
January 7, 2015: Change(s) in Section: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15 and 16.

Origination date: September 17, 1980

Hazardous Materials Control Committee
Preparer: Jim Perriello, +1-865-977-2051.

SDS System Number: 145308

Revision date August 11, 2015.

Version # 08

Revision Information

Product and Company Identification: Synonyms
Composition / Information on Ingredients: Disclosure Overrides
Physical & Chemical Properties: Multiple Properties
Transport Information: Agency Name, Packaging Type, and Transport Mode Selection
Regulatory Information: United States
HazReg Data: North America
GHS: Classification

Disclaimer

The information in the sheet was written based on the best knowledge and experience currently available.

Other information

• Aluminum Association Bulletin TR-2, "Recommendations for Storage and Handling of Aluminum Pigments and Powders." The Aluminum Association, 1525 Wilson Boulevard, Suite 600, Arlington, Virginia 22209, www.aluminum.org.
• Aluminum Association, "Guidelines for Handling Molten Aluminum, The Aluminum Association, 1525 Wilson Boulevard, Suite 600, Arlington, Virginia 22209, www.aluminum.org.
• NFPA 484, Standard for Combustible Metals (NFPA phone: 800-344-3555)
• NFPA 654, Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids
• NFPA 70, Standard for National Electrical Code (Electrical Equipment, Grounding and Bonding)
• NFPA 77, Standard for Static Electricity
• NFPA 68, Standard on Explosion Protection by Deflagration Venting • NFPA 69, Standard on Explosion Prevention Systems

Key/Legend:

ACGIH	American Conference of Governmental Industrial Hygienists
AICS	Australian Inventory of Chemical Substances
CAS	Chemical Abstract Services
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CPR	Cardio-pulmonary Resuscitation
DOT	Department of Transportation
DSL	Domestic Substances List (Canada)
EC	Effective Concentration
ED	Effective Dose
EINECS	European Inventory of Existing Commercial Chemical Substances
ENCS	Japan - Existing and New Chemical Substances
EWC	European Waste Catalogue
EPA	Environmental Protective Agency
IARC	International Agency for Research on Cancer
LC	Lethal Concentration
LD	Lethal Dose
MAK	Maximum Workplace Concentration (Germany) "maximale Arbeitsplatz-Konzentration"
NDSL	Non-Domestic Substances List (Canada)
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OEL	Occupational Exposure Limit
OSHA	Occupational Safety and Health Administration
PIN	Product Identification Number
PMCC	Pensky Marten Closed Cup
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
SIMDUT	Système d'Information sur les Matières Dangereuses Utilisées au Travail
STEL	Short Term Exposure Limit
TCLP	Toxic Chemicals Leachate Program
TDG	Transportation of Dangerous Goods
TLV	Threshold Limit Value
TSCA	Toxic Substances Control Act
TWA	Time Weighted Average
WHMIS	Workplace Hazardous Materials Information System

m meter, cm centimeter, mm millimeter, in inch,
g gram, kg kilogram, lb pound, µg microgram,
ppm parts per million, ft feet

*** End of SDS ***

Hazard statement

May form combustible dust concentrations in air.

Precautionary statement

Prevention

Care should be taken during bulk handling to prevent accumulation/generation over time of 75 micron or finer particles. Use only non-sparking tools and natural bristle brushes. Keep away from heat/sparks/open flames/hot surfaces - No smoking. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Prevent dust accumulation to minimize explosion hazard. Take precautionary measures against static discharge.

Response

In case of fire: Use appropriate media for extinction.

Storage

Store in a dry place and/or in closed container. Keep away from heat, sparks and open flame - No smoking. Do not allow chips, fines or dust to contact water, particularly in enclosed areas.

Disposal

Reuse or recycle material whenever possible. Material that cannot be reused may be sent to a metals reclamation facility that is able to handle fines. Waste material that cannot be reclaimed for metal value should be rendered non-reactive prior to disposal.

Warning

Supplemental information

Powder may ignite readily. Powder or dusts dispersed in the air can be explosive.

Explosion/fire hazards may be present when:

- Powder or dust are dispersed in air.
- Powder or dusts are in contact with water.
- Powder or dusts are in contact with certain metal oxides (e.g., rust, copper oxide).

FIRE FIGHTING MEASURES: Use gentle surface application of Class D extinguishing agent or dry inert granular material (e.g., sand) to cover and ring the burning material. Avoid mixing of the extinguishing agent with the burning material. If possible, isolate the burning material to prevent fire spread, and allow the material to burn itself out. Do not disturb the material until completely cool. Move undamaged containers away from heat or flame, if possible.

DO NOT USE water, halogenated agents, or ABC dry chemical agents.

These fire extinguishing agents will react with the burning material.

IN CASE OF SPILL: Avoid dusting of powder to the greatest extent possible. Use only non-sparking tools and natural bristle brushes. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Prohibit smoking. Use dry cleanup procedures. Place carefully in dry, water-tight containers. Seal containers. After complete clean-up by sweeping, area may be washed with large amounts of water if necessary.

See Alcoa SDS Number 0123.

SAFETY DATA SHEET

Version 4.9
Revision Date 04/20/2015
Print Date 12/11/2015

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Anthracene

Product Number : A89200
Brand : Aldrich

CAS-No. : 120-12-7

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear eye protection/ face protection.

P280	Wear protective gloves.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Photosensitizer., Lachrymator.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	$C_{14}H_{10}$
Molecular weight	:	178.23 g/mol
CAS-No.	:	120-12-7
EC-No.	:	204-371-1

Hazardous components

Component	Classification	Concentration
Anthracene Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)		
	Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3; Aquatic Acute 1; Aquatic Chronic 1; H315, H319, H335, H410	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

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

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Anthracene	120-12-7	TWA	0.200000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	Remarks	1910.1002 As used in §1910.1000 (Table Z-1), coal tar pitch volatiles include the fused polycyclic hydrocarbons which volatilize from the distillation residues of coal, petroleum (excluding asphalt), wood, and other organic matter. Asphalt (CAS 8052-42-4, and CAS 64742-93-4) is not covered under the 'coal tar pitch volatiles' standard OSHA specifically regulated carcinogen		

		TWA	0.100000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen NIOSH considers coal tar, coal tar pitch, and creosote to be coal tar products. cyclohexane-extractable fraction See Appendix C See Appendix A		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Anthracene	120-12-7	1-Hydroxypyrene (1-HP)		Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift at end of workweek			

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Chloroprene
Minimum layer thickness: 0.6 mm
Break through time: 480 min
Material tested:Camapren® (KCL 722 / Aldrich Z677493, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 30 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator.For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: crystalline Colour: beige
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 210 - 215 °C (410 - 419 °F) - lit.
f)	Initial boiling point and boiling range	340 °C (644 °F) - lit.
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Lower explosion limit: 0.6 %(V)
k)	Vapour pressure	1.3 hPa (1.0 mmHg) at 145.0 °C (293.0 °F)
l)	Vapour density	No data available
m)	Relative density	No data available
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	log Pow: 4.45
p)	Auto-ignition temperature	540.0 °C (1,004.0 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong oxidizing agents, Hypochlorites

10.6 Hazardous decomposition products

Other decomposition products - No data available

In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
Inhalation: No data available

Dermal: No data available

LD50 Intraperitoneal - Mouse - 430 mg/kg

Skin corrosion/irritation
Skin - Mouse
Result: Mild skin irritation

Serious eye damage/eye irritation
Irritating to eyes. The preceding data, or interpretation of data, was determined using Quantitative Structure Activity Relationship (QSAR) modeling.

Respiratory or skin sensitisation
Causes photosensitivity. Exposure to light can result in allergic reactions resulting in dermatologic lesions, which can vary from sunburnlike responses to edematous, vesiculated lesions, or bullae

Germ cell mutagenicity
No data available

Carcinogenicity

IARC:	3 - Group 3: Not classifiable as to its carcinogenicity to humans (Anthracene)
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	OSHA specifically regulated carcinogen (Anthracene)

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation.
The preceding data, or interpretation of data, was determined using Quantitative Structure Activity Relationship (QSAR) modeling.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: CA9350000

Possible tumor promoter., Headache, Nausea, Weakness

Blood -

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Lepomis macrochirus (Bluegill) - 0.001 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 0.10 mg/l - 48 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
Indication of bioaccumulation.
Bioaccumulation Pimephales promelas (fathead minnow) - 42 d - 0.01191 mg/l

Bioconcentration factor (BCF): 649

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substances, solid, n.o.s. (Anthracene)
Reportable Quantity (RQ): 5000 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Anthracene)
Marine pollutant:yes

IATA
UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Anthracene)

Further information
EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

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

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Anthracene	120-12-7	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Anthracene	120-12-7	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Anthracene	120-12-7	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Anthracene	120-12-7	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Anthracene	120-12-7	2007-09-28

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Eye Irrit.	Eye irritation
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

HMIS Rating

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

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.9 Revision Date: 04/20/2015 Print Date: 12/11/2015

Antimony

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision Date: 02/12/2014 Version: 1.0

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY

1.1. Product Identifier

Product Form: Substance

Product Name: Antimony

Synonyms: Stibium (Sb)

1.2. Intended Use of the Product No additional information available

1.3. Name, Address, and Telephone of the Responsible Party

Company

Atomized Products Group, Inc
3838 Miller Park Dr
Garland, TX 75042
T 972-272-9596
atomizedproductsgroup.com

1.4. Emergency Telephone Number

Emergency Number : 800-255-3924 (CHEMTEL)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the Substance or Mixture

Classification (GHS-US)

Comb. Dust
Acute Tox. 3 (Oral) H301
Acute Tox. 4 (Inhalation:dust,mist) H332
Carc. 2 H351
Aquatic Acute 2 H401
Aquatic Chronic 2 H411

2.2. Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US) :

GHS06 GHS07 GHS08 GHS09

Signal Word (GHS-US) : Danger

Hazard Statements (GHS-US) : May form combustible dust concentrations in air
H301 - Toxic if swallowed
H332 - Harmful if inhaled
H351 - Suspected of causing cancer
H401 - Toxic to aquatic life
H411 - Toxic to aquatic life with long lasting effects

Precautionary Statements (GHS-US) : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P261 - Avoid breathing dust.
P264 - Wash hands, forearms, and other exposed areas thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P273 - Avoid release to the environment.
P280 - Wear protective gloves, protective clothing, eye protection, face protection, respiratory protection.
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P308+P313 - If exposed or concerned: Get medical advice/attention.

P312 - Call a POISON CENTER/doctor/physician if you feel unwell.
P321 - Specific treatment (see section 4).
P330 - If swallowed, rinse mouth.
P391 - Collect spillage.
P405 - Store locked up.
P501 - Dispose of contents/container to local, regional, national, territorial, provincial, and international regulations.

2.3. Other Hazards

Other Hazards Not Contributing to the Classification: Exposure may aggravate those with pre-existing eye, skin, or respiratory conditions. May form combustible dust concentrations in air. Exposure may aggravate individuals with pre-existing skin, kidney, liver, and pulmonary disorders. On burning release of harmful/irritant gases/vapours (antimony oxides). Inhalation of dusts and fumes can cause metal fume fever. Symptoms can include a metallic or sweet taste in the mouth, sweating, shivering, headache, throat irritation, fever, chills, thirstiness, muscle aches, nausea, vomiting, weakness, fatigue, and shortness of breath.

2.4. Unknown Acute Toxicity (GHS-US)

No data available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1. Substance

Name : Antimony

Name	Product identifier	%	Classification (GHS-US)
Antimony	(CAS No) 7440-36-0	100	Comb. Dust Acute Tox. 3 (Oral), H301 Acute Tox. 4 (Inhalation), H332 Carc. 2, H351 Aquatic Acute 2, H401 Aquatic Chronic 2, H411

Full text of H-phrases: see section 16

3.2. Mixture

Not applicable

SECTION 4: FIRST AID MEASURES

4.1. Description of First Aid Measures

First-aid Measures General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid Measures After Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

First-aid Measures After Skin Contact: Remove contaminated clothing. Drench affected area with water for at least 15 minutes. Obtain medical attention if irritation persists.

First-aid Measures After Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention if irritation persists.

First-aid Measures After Ingestion: Rinse mouth. Do not induce vomiting. Seek medical attention if a large amount is swallowed.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/Injuries: Suspected of causing cancer. Toxic if swallowed. Harmful if inhaled.

Symptoms/Injuries After Inhalation: Harmful if inhaled. Respiratory tract irritation.

Symptoms/Injuries After Skin Contact: Prolonged contact with large amounts of dust may cause mechanical irritation.

Symptoms/Injuries After Eye Contact: Prolonged contact with large amounts of dust may cause mechanical irritation.

Symptoms/Injuries After Ingestion: Toxic if swallowed. May cause nausea, vomiting, and diarrhea.

Chronic Symptoms: Prolonged exposure may cause effects in specific organs such as the liver, kidneys, blood, and nervous system.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing Media

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

5.2. Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not considered flammable but may burn at high temperatures. Dust explosion hazard in air.

Explosion Hazard: Avoid dust clouds in combination with static electricity. Dust explosion hazard in air.

Reactivity: Hazardous reactions will not occur under normal conditions. Dust clouds can be explosive.

5.3. Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Use water spray or fog for cooling exposed containers. In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Other information: Risk of dust explosion. Do not allow the product to be released into the environment. Do not allow run-off from fire fighting to enter drains or water courses.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Use special care to avoid static electric charges. Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Handle in accordance with good industrial hygiene and safety practice. Do not breathe dust. Avoid generating dust. Avoid all contact with skin, eyes, or clothing.

6.1.1. For Non-emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Responders

Protective Equipment: Equip cleanup crew with proper protection. Use appropriate personal protection equipment (PPE).

Emergency Procedures: Ventilate area.

6.2. Environmental Precautions

Prevent entry to sewers and public waters. Do not allow to enter drains or water courses.

6.3. Methods and Material for Containment and Cleaning Up

For Containment: Avoid generation of dust during clean-up of spills. Use only non-sparking tools.

Methods for Cleaning Up: Clear up spills immediately and dispose of waste safely. Avoid generation of dust during clean-up of spills. Use only non-sparking tools. Use explosion proof vacuum during cleanup, with appropriate filter, do not mix with other materials. Contact competent authorities after a spill.

6.4. Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for Safe Handling

Additional Hazards When Processed: Avoid dust production. Accumulation and dispersion of dust with an ignition source can cause a combustible dust explosion, keep dust levels to a minimum and follow applicable regulations. Do not pressurize, cut, or weld containers. . On burning: release of harmful/irritant gases/vapours e.g.: (antimony oxides).

Precautions for Safe Handling: Use only non-sparking tools. Keep away from heat/sparks/open flames/hot surfaces. – No smoking. Handle in accordance with good industrial hygiene and safety procedures.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Do no eat, drink or smoke when using this product.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Proper grounding procedures to avoid static electricity should be followed. Ground/bond container and receiving equipment. Use explosion-proof electrical, ventilating, and lighting equipment. Comply with applicable regulations.

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use. Keep/Store away from extremely high or low temperatures, ignition sources, incompatible materials.

Incompatible Products: Strong acids. Strong bases. Strong oxidizers.

7.3. Specific End Use(s)

No additional information available

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control Parameters

Antimony (7440-36-0)		
USA ACGIH	ACGIH TWA (mg/m³)	0.5 mg/m³
USA NIOSH	NIOSH REL (TWA) (mg/m³)	0.5 mg/m³

USA IDLH	US IDLH (mg/m³)	50 mg/m³
USA OSHA	OSHA PEL (TWA) (mg/m³)	0.5 mg/m³

8.2. Exposure Controls

Appropriate Engineering Controls : Ensure all national/local regulations are observed. Proper grounding procedures to avoid static electricity should be followed. Use explosion-proof equipment. Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment : Gloves. Protective goggles. Respiratory protection of the dependent type. Protective clothing.

Materials for Protective Clothing : Chemically resistant materials and fabrics.

Hand Protection : Wear chemically resistant protective gloves.

Eye Protection : Chemical goggles or safety glasses.

Skin and Body Protection : Wear suitable protective clothing.

Respiratory Protection : Use NIOSH-approved air-purifying or supplied-air respirator where airborne concentrations of dust are expected to exceed exposure limits.

Thermal Hazard Protection : Wear suitable protective clothing.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on Basic Physical and Chemical Properties

Physical State : Solid

Odor : No data available

Odor Threshold : No data available

pH : No data available

Relative Evaporation Rate (butylacetate=1) : No data available

Melting Point : No data available

Freezing Point : No data available

Boiling Point : No data available

Flash Point : No data available

Auto-ignition Temperature : No data available

Decomposition Temperature : No data available

Flammability (solid, gas) : No data available

Vapor Pressure : No data available

Relative Vapor Density at 20 °C : No data available

Relative Density : No data available

Specific Gravity : No data available

Solubility : No data available

Log Pow : No data available

Log Kow : No data available

Viscosity, Kinematic : No data available

Viscosity, Dynamic : No data available

Explosive Properties : No data available

Oxidizing Properties : No data available

Explosive Limits : No data available

9.2. Other Information No additional information available

SECTION 10: STABILITY AND REACTIVITY

10.1 Reactivity: Hazardous reactions will not occur under normal conditions. Dust clouds can be explosive.

10.2 Chemical Stability: Dust clouds can be explosive.

10.3 Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

10.4 Conditions to Avoid: Direct sunlight. Extremely high or low temperatures. Open flame. Ignition sources. Incompatible materials.

10.5 Incompatible Materials: Strong acids. Strong bases. Strong oxidizers. Halogenated compounds.

10.6 Hazardous Decomposition Products: Antimony and its oxides. Metal oxides. Inhalation of fumes may cause metal fume fever.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information On Toxicological Effects

Acute Toxicity: Toxic if swallowed. Harmful if inhaled.

Antimony	
ATE (Oral)	500.000 mg/kg body weight
ATE (Dust/Mist)	1.500 mg/l/4h

Antimony (7440-36-0)	
LD50 Oral Rat	100 mg/kg
ATE (Oral)	100.000 mg/kg body weight

Skin Corrosion/Irritation: Not classified

Serious Eye Damage/Irritation: Not classified

Respiratory or Skin Sensitization: Not classified

Germ Cell Mutagenicity: Not classified

Carcinogenicity: Suspected of causing cancer.

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): Not classified

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: Harmful if inhaled. Respiratory tract irritation.

Symptoms/Injuries After Skin Contact: Prolonged contact with large amounts of dust may cause mechanical irritation.

Symptoms/Injuries After Eye Contact: Prolonged contact with large amounts of dust may cause mechanical irritation.

Symptoms/Injuries After Ingestion: Toxic if swallowed. May cause nausea, vomiting, and diarrhea.

Chronic Symptoms: Prolonged exposure may cause effects in specific organs such as the liver, kidneys, blood, and nervous system.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

Ecology - General : Toxic to aquatic life with long lasting effects.

12.2. Persistence and Degradability

Antimony	
Persistence and Degradability	May cause long-term adverse effects in the environment.

12.3. Bioaccumulative Potential No additional information available

12.4. Mobility in Soil No additional information available

12.5. Other Adverse Effects

Other Information : Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, national, and international regulations.

Additional Information: The materials contained within this product are hazardous to the environment, do not release into the environment.

SECTION 14: TRANSPORT INFORMATION

14.1 In Accordance with DOT

Proper Shipping Name : ANTIMONY POWDER
Hazard Class : 6.1
Identification Number : UN2871
Label Codes : 6.1
Packing Group : III
Marine Pollutant : Marine pollutant
ERG Number : 170

14.2 In Accordance with IMDG

Proper Shipping Name : ANTIMONY POWDER
Hazard Class : 6.1
Identification Number : UN2871
Packing Group : III
Label Codes : 6.1
EmS-No. (Fire) : F-A
EmS-No. (Spillage) : S-A
MFAG Number : 171

14.3 In Accordance with IATA

Proper Shipping Name : ANTIMONY POWDER
Packing Group : III
Identification Number : UN2871
Hazard Class : 6
Label Codes : 6.1
ERG Code (IATA) : 6L

SECTION 15: REGULATORY INFORMATION

15.1 US Federal Regulations

Antimony	
SARA Section 311/312 Hazard Classes	Delayed (chronic) health hazard Immediate (acute) health hazard

Antimony (7440-36-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Listed on SARA Section 313 (Specific toxic chemical listings)	
SARA Section 313 - Emission Reporting	1.0 %

15.2 US State Regulations

Antimony (7440-36-0)
U.S. - California - Priority Toxic Pollutants - Human Health Criteria
U.S. - California - Toxic Air Contaminant List (AB 1807, AB 2728)
U.S. - Colorado - Primary Drinking Water Regulations - Maximum Contaminant Level Goals (MCLGs)
U.S. - Colorado - Primary Drinking Water Regulations - Maximum Contaminant Levels (MCLs)
U.S. - Connecticut - Drinking Water Quality Standards - Maximum Contaminant Levels
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (30 min)
U.S. - Connecticut - Hazardous Air Pollutants - HLVs (8 hr)
U.S. - Connecticut - Water Quality Standards - Consumption of Organisms Only
U.S. - Connecticut - Water Quality Standards - Consumption of Water and Organisms
U.S. - Connecticut - Water Quality Standards - Health Designations
U.S. - Delaware - Pollutant Discharge Requirements - Reportable Quantities
U.S. - Florida - Drinking Water Standards - Inorganic Contaminants - Maximum Contaminant Levels (MCLs)
U.S. - Georgia - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations
U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Emission Levels (ELs)
U.S. - Idaho - Occupational Exposure Limits - TWAs

U.S. - Illinois - Toxic Air Contaminants
U.S. - Louisiana - Reportable Quantity List for Pollutants
U.S. - Maine - Air Pollutants - Hazardous Air Pollutants
U.S. - Maryland - Surface Water Quality Standards - Consumption of Organisms Only
U.S. - Maryland - Surface Water Quality Standards - Consumption of Water and Organisms
U.S. - Massachusetts - Allowable Ambient Limits (AALs)
U.S. - Massachusetts - Allowable Threshold Concentrations (ATCs)
U.S. - Massachusetts - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 1
U.S. - Massachusetts - Oil & Hazardous Material List - Groundwater Reportable Concentration - Reporting Category 2
U.S. - Massachusetts - Oil & Hazardous Material List - Reportable Quantity
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 1
U.S. - Massachusetts - Oil & Hazardous Material List - Soil Reportable Concentration - Reporting Category 2
U.S. - Massachusetts - Right To Know List
U.S. - Massachusetts - Threshold Effects Exposure Limits (TELs)
U.S. - Massachusetts - Toxics Use Reduction Act
U.S. - Michigan - Occupational Exposure Limits - TWAs
U.S. - Michigan - Polluting Materials List
U.S. - Minnesota - Chemicals of High Concern
U.S. - Minnesota - Groundwater Health Risk Limits
U.S. - Minnesota - Hazardous Substance List
U.S. - Minnesota - Permissible Exposure Limits - TWAs
U.S. - Missouri - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - Nebraska - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - New Hampshire - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - 24-Hour
U.S. - New Hampshire - Regulated Toxic Air Pollutants - Ambient Air Levels (AALs) - Annual
U.S. - New Jersey - Discharge Prevention - List of Hazardous Substances
U.S. - New Jersey - Environmental Hazardous Substances List
U.S. - New Jersey - Primary Drinking Water Standards - Maximum Contaminant Levels - MCLs
U.S. - New Jersey - Right to Know Hazardous Substance List
U.S. - New Jersey - Water Quality - Ground Water Quality Criteria
U.S. - New Jersey - Water Quality - Practical Quantitation Levels (PQLs)
U.S. - New York - Occupational Exposure Limits - TWAs
U.S. - New York - Reporting of Releases Part 597 - List of Hazardous Substances
U.S. - North Dakota - Air Pollutants - Guideline Concentrations - 8-Hour
U.S. - North Dakota - Water Quality Standards - Human Health Value for Class III
U.S. - North Dakota - Water Quality Standards - Human Health Value for Classes I, IA, II
U.S. - Oregon - Permissible Exposure Limits - TWAs
U.S. - Pennsylvania - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List
U.S. - Pennsylvania - RTK (Right to Know) List
U.S. - Rhode Island - Air Toxics - Acceptable Ambient Levels - 24-Hour
U.S. - Rhode Island - Water Quality Standards - Acute Freshwater Aquatic Life Criteria
U.S. - Rhode Island - Water Quality Standards - Chronic Freshwater Aquatic Life Criteria
U.S. - Rhode Island - Water Quality Standards - Human Health Criteria for Consumption of Aquatic Organisms Only
U.S. - Rhode Island - Water Quality Standards - Human Health Criteria for Consumption of Water and Aquatic Organisms
U.S. - South Carolina - Maximum Contaminant Levels (MCLs)
U.S. - Tennessee - Occupational Exposure Limits - TWAs
U.S. - Texas - Drinking Water Standards - Maximum Contaminant Levels (MCLs)
U.S. - Texas - Effects Screening Levels - Long Term
U.S. - Texas - Effects Screening Levels - Short Term
U.S. - Utah - Drinking Water - Maximum Contaminant Levels (MCLs)
U.S. - Vermont - Hazardous Waste - Hazardous Constituents
U.S. - Vermont - Permissible Exposure Limits - TWAs
U.S. - Virginia - Water Quality Standards - Public Water Supply Effluent Limits
U.S. - Virginia - Water Quality Standards - Surface Waters Not Used for the Public Water Supply Effluent Limits

U.S. - Washington - Dangerous Waste - Dangerous Waste Constituents List
U.S. - Washington - Permissible Exposure Limits - STELs
U.S. - Washington - Permissible Exposure Limits - TWAs
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 25 Feet to Less Than 40 Feet
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 40 Feet to Less Than 75 Feet
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights 75 Feet or Greater
U.S. - Wisconsin - Hazardous Air Contaminants - All Sources - Emissions From Stack Heights Less Than 25 Feet

SECTION 16: OTHER INFORMATION

Revision date : 02/12/2014

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

Acute Tox. 3 (Oral)	Acute toxicity (oral) Category 3
Acute Tox. 4 (Inhalation)	Acute toxicity (inhalation) Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Aquatic Acute 2	Hazardous to the aquatic environment - Acute Hazard Category 2
Aquatic Chronic 2	Hazardous to the aquatic environment - Chronic Hazard Category 2
Carc. 2	Carcinogenicity Category 2
Comb. Dust	Combustible Dust
	May form combustible dust concentrations in air
H301	Toxic if swallowed
H332	Harmful if inhaled
H351	Suspected of causing cancer
H401	Toxic to aquatic life
H411	Toxic to aquatic life with long lasting effects

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SDS US (GHS HazCom) - US

SAFETY DATA SHEET

Version 5.3
Revision Date 06/25/2015
Print Date 05/11/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : AROCLOR 1260

Product Number : CRM48736
Brand : Supelco

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Carcinogenicity (Category 1B), H350

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H350 May cause cancer.

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Hazardous components

Component		Classification	Concentration
Distillates (petroleum), hydrotreated middle			
CAS-No. EC-No. Index-No.	64742-46-7 265-148-2 649-221-00-X	Carc. 1B; H350	>= 90 - <= 100 %
Baseoil - unspecified			
CAS-No. EC-No. Index-No.	64742-53-6 265-156-6 649-466-00-2	Carc. 1B; H350	>= 30 - < 50 %
2,6-di-tert-Butyl-p-cresol			
CAS-No. EC-No.	128-37-0 204-881-4	Aquatic Acute 1; Aquatic Chronic 1; H410	>= 0.1 - < 1 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Nature of decomposition products not known.

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Distillates (petroleum), hydrotreated middle	64742-46-7	TWA	500.000000 ppm 2,000.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	Remarks	The value in mg/m3 is approximate.		

		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	10.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	5 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	5 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	10 mg/m3	USA. NIOSH Recommended Exposure Limits
Baseoil - unspecified	64742-53-6	TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Not classifiable as a human carcinogen		
		TWA	5.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	10.000000 mg/m3	USA. NIOSH Recommended Exposure Limits

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	No data available
f)	Initial boiling point and boiling range	No data available
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	No data available
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC:	3 - Group 3: Not classifiable as to its carcinogenicity to humans (2,6-di-tert-Butyl-p-cresol)
IARC:	3 - Group 3: Not classifiable as to its carcinogenicity to humans (Distillates (petroleum), hydrotreated middle)
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: Not available

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

Nerves. - (Aroclor 1260)

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

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

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

SARA 311/312 Hazards
Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Distillates (petroleum), hydrotreated middle	64742-46-7	1989-08-11
Baseoil - unspecified	64742-53-6	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Distillates (petroleum), hydrotreated middle	64742-46-7	1989-08-11
Baseoil - unspecified	64742-53-6	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Distillates (petroleum), hydrotreated middle	64742-46-7	1989-08-11
Baseoil - unspecified	64742-53-6	1993-04-24

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Aroclor 1260	11096-82-5	2008-08-01
Distillates (petroleum), hydrotreated middle	64742-46-7	2013-12-20

WARNING: This product contains a chemical known to the	CAS-No.	Revision Date

State of California to cause birth defects or other reproductive harm.	11096-82-5	2008-08-01
Aroclor 1260		

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
H350	May cause cancer.
H410	Very toxic to aquatic life with long lasting effects.

HMIS Rating

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

NFPA Rating

Health hazard:	0
Fire Hazard:	0
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.3 Revision Date: 06/25/2015 Print Date: 05/11/2016

SAFETY DATA SHEET

Version 5.3
Revision Date 02/27/2015
Print Date 05/11/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Aroclor 1268 solution

Product Number : 502146
Brand : Supelco

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2), H225
Skin irritation (Category 2), H315
Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336
Aspiration hazard (Category 1), H304
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H410	Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P210	Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ eye protection/ face protection.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P331	Do NOT induce vomiting.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Hazardous components

Component		Classification	Concentration
2,2,4-Trimethylpentane			
CAS-No. EC-No. Index-No.	540-84-1 208-759-1 601-009-00-8	Flam. Liq. 2; Skin Irrit. 2; STOT SE 3; Asp. Tox. 1; Aquatic Acute 1; Aquatic Chronic 1; H225, H304, H315, H336, H410	>= 90 - <= 100 %
PCB- Aroclor 1268			
CAS-No.	11100-14-4	STOT RE 2; Aquatic Acute 1; Aquatic Chronic 1; H373, H410	>= 0.1 - < 1 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

In case of eye contact
Flush eyes with water as a precaution.

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Use explosion-proof equipment.Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
2,2,4-Trimethylpentane	540-84-1	TWA	300.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract irritation		
PCB- Aroclor 1268	11100-14-4	TWA	0.001000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen		

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	-116 °C (-177 °F)
f)	Initial boiling point and boiling range	99 °C (210 °F) at 1,013 hPa (760 mmHg)
g)	Flash point	-12 °C (10 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 6 %(V) Lower explosion limit: 1.1 %(V)
k)	Vapour pressure	55 hPa (41 mmHg)

l)	Vapour density	3.9
m)	Relative density	0.690 g/cm3
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

Relative vapour density 3.9

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Vapours may form explosive mixture with air.

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity

No data available

Carcinogenicity

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

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

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: Not available

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

Liver - Irregularities - Based on Human Evidence
Liver - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence (PCB- Aroclor 1268)

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1262 Class: 3 Packing group: II
Proper shipping name: Octanes, solution
Reportable Quantity (RQ): 1000 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1262 Class: 3 Packing group: II EMS-No: F-E, S-E
Proper shipping name: OCTANES, SOLUTION
Marine pollutant:yes

IATA
UN number: 1262 Class: 3 Packing group: II
Proper shipping name: Octanes, solution

15. REGULATORY INFORMATION

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

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

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
2,2,4-Trimethylpentane	540-84-1	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
2,2,4-Trimethylpentane	540-84-1	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
2,2,4-Trimethylpentane	540-84-1	2007-03-01

California Prop. 65 Components

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

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer. PCB- Aroclor 1268	11100-14-4	2008-08-01
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. PCB- Aroclor 1268	11100-14-4	2008-08-01

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Asp. Tox.	Aspiration hazard
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
Skin Irrit.	Skin irritation
STOT RE	Specific target organ toxicity - repeated exposure
STOT SE	Specific target organ toxicity - single exposure

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.3 Revision Date: 02/27/2015 Print Date: 05/11/2016

Material Safety Data Sheets

Division of Facilities Services

DOD Hazardous Material Information (ANSI Format)
For Cornell University Convenience Only

ARSENIC METAL-MBE CHARGES, ARSENIC CHUNK & GRANULE

Section 1 - Product and Company Identification	Section 9 - Physical & Chemical Properties
Section 2 - Compositon/Information on Ingredients	Section 10 - Stability & Reactivity Data
Section 3 - Hazards Identification Including Emergency Overview	Section 11 - Toxicological Information
Section 4 - First Aid Measures	Section 12 - Ecological Information
Section 5 - Fire Fighting Measures	Section 13 - Disposal Considerations
Section 6 - Accidental Release Measures	Section 14 - MSDS Transport Information
Section 7 - Handling and Storage	Section 15 - Regulatory Information
Section 8 - Exposure Controls & Personal Protection	Section 16 - Other Information

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Cornell University does not in any way warrant or imply the applicability, viability or use of this information to any person or for use in any situation.

Section 1 - Product and Company Identification
ARSENIC METAL-MBE CHARGES, ARSENIC CHUNK & GRANULE

Product Identification: ARSENIC METAL-MBE CHARGES, ARSENIC CHUNK & GRANULE
Date of MSDS: 08/01/1997 **Technical Review Date:** 09/01/1999
FSC: 6810 **NIIN: LIIN:** 00N092040
Submitter: N NF
Status Code: A
MFN: 01
Article: N
Kit Part: N

Manufacturer's Information

Manufacturer's Name: UNITED MINERAL & CHEMICAL CORP
Manufacturer's Address1: 1100 VALLEYBROOK AVE
Manufacturer's Address2: LYNDHURST, NJ 07071
Manufacturer's Country: US
General Information Telephone: 201-507-3300
Emergency Telephone: (800)424-9300
Emergency Telephone: (800)424-9300
Chemtec Telephone: (800)424-9300
Proprietary: N
Reviewed: Y
Published: Y
CAGE: 87730

Contractor Information

Contractor's Name: UNITED MINERAL & CHEMICAL CORP
Contractor's Address1: 1100 VALLEYBROOK AVE
Contractor's Address2: LYNDHURST, NJ 07071
Contractor's Telephone: 201-507-3300
Contractor's CAGE: 87730

Section 2 - Compositon/Information on Ingredients
ARSENIC METAL-MBE CHARGES, ARSENIC CHUNK & GRANULE

Ingredient Name: ARSENIC; (ARSENIC METAL)
Ingredient CAS Number: 7440-38-2 **Ingredient CAS Code:** T
RTECS Number: CG0525000 **RTECS Code:** T
=WT: 100. **=WT Code:** M
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text:
% Enviromental Weight:
Other REC Limits: N/P
OSHA PEL: N/P **OSHA PEL Code:**
OSHA STEL: N/P **OSHA STEL Code:**
ACGIH TLV: 0.01 MG/M3 **ACGIH TLV Code:** T
ACGIH STEL: NOT ESTABLISHED **ACGIH STEL Code:** T
EPA Reporting Quantity: 1 LB
DOT Reporting Quantity: 1 LB
Ozone Depleting Chemical: N

Section 3 - Hazards Identification, Including Emergency Overview
ARSENIC METAL-MBE CHARGES, ARSENIC CHUNK & GRANULE

Health Hazards Acute & Chronic: ARSENIC METAL IS NOT AS READILY AVAIL IN THE BODY AS ARSENIC IN THE FORM OF DUST OR VAP OR WHEN PROCESSED INTO ARSENIC CMPDS (ARSENICALS). INORGANIC ARSENICALS ARE MORE TOXIC THAN ORGANIC ARSENICALS. ACUTE EFTS: ARSENIC IS POISON BY SUBCUTANEOUS, INTRAMUSCULAR & INTRAPERITONEAL ROUTES. ACUTE ARSENIC POISONING FROM INGEST RSLTS IN MARKED IRRIT OF STOMACH & INTESTINES W/NAUS, VOMIT & DIARR. IN SEV C ASES STOOLS & VOMIT ARE BLOODY & PATIENT MAY GO INTO COLLAPSE & SHOCK W/WEAK, RAPID PULSE, COLD SWEATS, COMA & DEATH. INHAL MAY CAUSE ULCERATION OF NASAL SEPTUM, RESP IRRIT. SKIN/EYE CNTCT MAY CAUSE DERM, SKIN & EYE (EFTS OF OVEREXP)

Signs & Symptoms of Overexposure:
HLTH HAZS: IRRIT. CHRONIC EFTS: ARSENIC IS CONFIRMED HUMAN CARCIN PRODUCING LIVER TUMORS & AN EXPERIMENTAL TERATOGEN (MAY CAUSE DMG TO DEVELOPING FETUS). CHRONIC ARSENIC POISONING MAY INCL ANY/ALL OF FOLLOWING: DIGEST SYS DISTURBS, LOSS OFAPPETITE, CRAMPS, NAUS, CONSTIP, DIARR; LIVER DMG WHICH MAY RSLT IN JAUN; DISTURBS OF BLOOD, KIDNEYS & NERVOUS SYS; SKIN ABNORMS INCL ITCHING, PIGMENTATION & POS S CANCEROUS CHGS. TARGET ORGANS FOR INORGANIC CMPDS AS AS): LIVER, KIDNEYS, SKIN, LUNGS, LYMPHATIC SYS. TLV: 0.01 MG/M3 TWA ARSENIC, ELEMENTAL & INORGANIC CMPDS (EXCEPT ARSINE), AS AS. OSHA PEL: (SUPD AT)

Medical Conditions Aggravated by Exposure:
KNOWN EFFECTS ON OTHER ILLNESSES: GASTROINTESTINAL. NERVOUS SYSTEM. SKIN. LIVER & KIDNEY PROBLEMS. AFTER EXPOSURE HAVE URINE TEST.

LD50 LC50 Mixture: LD50: (ORAL, RAT) 763 MG/M3

Route of Entry Indicators:
- **Inhalation:** YES
- **Skin:** YES
- **Ingestion:** YES

Carcenogenicity Indicators
- **NTP:** YES
- **IARC:** YES
- **OSHA:** YES

Carcinogenicity Explanation: ARSENIC: IARC MONOGRAPHS, SUPPLEMENT, VOL 7, PG 100, 1987: GROUP 1. NTP 8TH ANNUAL REPORT ON CARCINOGENS, 1998: KNOWN TO BE CARCINOGEN. OSHA REGULATED: CFR 29 1910.1018.

Section 4 - First Aid Measures
ARSENIC METAL-MBE CHARGES, ARSENIC CHUNK & GRANULE

First Aid:
SKIN: FLUSH WITH SOAP AND WATER. AVOID RUBBING INTO SKIN. CONTACT MD IMMEDIATELY. EYES: FLUSH WITH WATER FOR AT LEAST 15 MINUTES. CONTACT PHYSICIAN IMMEDIATELY. INHALATION: REMOVE TO FRESH AIR. PROVID E OXYGEN IF NECESSARY. CONTACT PHYSICIAN IMMEDIATELY. INGESTION: TREATMENT WITH BAS(DIMERCAPTOL) IS OF QUESTIONABLE EFFECTIVENESS IN TRIVALENT ARSENIC COMPOUNDS. INDUCE VOMITING AND DO GASTRIC LAVAGE. GET PERSONNEL TO HOSPITAL IMMEDIATELY. A PHYSICIAN CAN INITIATE AN EXCHANGE TRANSFUSION AND DIALYSIS. ALSO ABSORPTION AND REMOVAL WITH ANIMAL BONE COAL OR FE(OH)*2 SHOULD BE DONE.

Section 5 - Fire Fighting Measures
ARSENIC METAL-MBE CHARGES, ARSENIC CHUNK & GRANULE

Fire Fighting Procedures:
USE NIOSH APPRVD SCBA & FULL PROT EQUIP (FP N). RESTRICT PERS NOT WEARING PROT EQUIP FROM AREA. TRY TO SNUFF FIRE W/SAND, DRY MEDIA, FOAM OR CO*2. IF NO OTHER OPTIONS AVAILABLE, USE WATER & ALWAYS WEA R NIOSH APPRVD SCBA OR NIOSH TOXIC VAPOR RESP. POISONOUS GASES ARE PRODUCED IN FIRE, INCLUDING ARSENIC OXIDES.
Unusual Fire or Explosion Hazard:
ARSENIC, WHEN HEATED OR IN CONTACT W/ACID OR ACID FUMES, CAN PRODUCE HIGHLY TOXIC FUMES. ARSENIC REACTS VIGOROUSLY W/OXIDIZING MATLS. ARSENIC IS FLAMMABLE IN FORM OF DUST WHEN EXPOSED TO HEAT OR FLAME OR BY CHEMICAL RXN W/POWERFUL OXIDIZERS. SLIGHT EXPLOSION HAZ EXISTS IN FORM OF DUST WHEN EXPOSED TO (ECOLOGICAL INFO)
Extinguishing Media:
FOAM, CARBON DIOXIDE, DRY CHEMICAL.
Flash Point: Flash Point Text: NONE

Autoignition Temperature:
Autoignition Temperature Text: N/K
Lower Limit(s): N/A
Upper Limit(s): N/A

Section 6 - Accidental Release Measures
ARSENIC METAL-MBE CHARGES, ARSENIC CHUNK & GRANULE

Spill Release Procedures:
RESTRICT PERSONS NOT WEARING PROTECTIVE EQUIPMENT FROM AREA UNTIL CLEANUP IS COMPLETE. WEARING NIOSH APPROVED RESPIRATOR, GLOVES, GOGGLES, LAB COAT, GATHER UP CHUNKS, RODS OR GRANULES WITH VACUUM OR U TENSILS RESERVED FOR POISONOUS SOLIDS. AVOID RAISING DUST. VENTILATE THE AREA AFTER CLEANUP IS COMPLETE.

Section 7 - Handling and Storage
ARSENIC METAL-MBE CHARGES, ARSENIC CHUNK & GRANULE

Handling and Storage Precautions:

Other Precautions:

Section 8 - Exposure Controls & Personal Protection
ARSENIC METAL-MBE CHARGES, ARSENIC CHUNK & GRANULE

Repiratory Protection:
NIOSH APPROVED, AIR PURIFYING, TOXIC VAPOR RESPIRATOR TO PARTICULATE AND FUME AIR LEVEL. FOR INORGANIC ARSENIC APPLICATIONS, SEE 29 CFR 1910.1018 FOR PROPER RESPIRATOR SELECTION.
Ventilation:
LOC EXHST/MECH (GEN) SCRUBBER OR TRAP IF POSS TO MAINTAIN EXPOS TO LESS THAN PERMISSIBLE LIMITS FOR ELEMENTAL ARSENIC & ANY CMPDS BEING GENERATED.

Protective Gloves:
NEOPRENE OR PLASTIC.
Eye Protection: ANSI APPROVED CHEMICAL WORKERS GOGGLES (FP N).
Other Protective Equipment: ANSI APPROVED EYE WASH AND DELUGE SHOWER (FP N). LAB COAT.
Work Hygenic Practices: N/P
Supplemental Health & Safety Information: EFTS OF OVEREXP: 0.01 MG/M3 AS AS & INORGANIC CMPDS; 0.5 AS AS ORGANIC CMPDS. ACGIH TLV: 0.01 MG/M3 TWA ARSENIC, ELEMENTAL & INORGANIC CMPDS (EXCEPT ARSINE), AS AS. ALSO SEE TOXICOLOGICAL INFO. WASTE DISP METH: HAZ DEPENDING ON LEVEL OF TOX CHARACT OF ARSENIC. SEE 40 CFR 261.24 FOR DETERMINATION. (OTHER INFO)

Section 9 - Physical & Chemical Properties
ARSENIC METAL-MBE CHARGES, ARSENIC CHUNK & GRANULE

HCC:
NRC/State License Number:
Net Property Weight for Ammo:
Boiling Point: =612.C, 1133.6F **Boiling Point Text:** SUBLIMES
Melting/Freezing Point: =814.C, ######F **Melting/Freezing Text:** @ 36 ATM. FP:N/A
Decomposition Point: Decomposition Text: N/P
Vapor Pressure: 1 MMHG @ 372C **Vapor Density:** N/A
Percent Volatile Organic Content:
Specific Gravity: 5.727
Volatile Organic Content Pounds per Gallon:
pH: NONE-0% IN H*2O
Volatile Organic Content Grams per Liter:
Viscosity: N/P
Evaporation Weight and Reference: N/A
Solubility in Water: INSOLUBLE
Appearance and Odor: SILVER GRAY CRYSTALLINE CHUNKS, RODS OR GRANULES; NO ODOR AS (ECOLOGICAL INFO)
Percent Volatiles by Volume: N/A (BY WT)
Corrosion Rate: N/P

Section 10 - Stability & Reactivity Data
ARSENIC METAL-MBE CHARGES, ARSENIC CHUNK & GRANULE

Stability Indicator: YES
Materials to Avoid:
INCOMPATIBLE W/BROMINE AZIDE, DIRUBIDIUM ACETYLIDE, HALOGENS, PALLADIUM ZINC, PLATINUM, NCL*3, AGNO*3, CRO*3, NA*2O*2, HEXAFLUOROISOPROPYLIDENEAMINO LITHIUM. CAN REACT W/ACIDS OR ACID FUMES & POWERFUL OXIDIZERS SUCH AS BROM
Stability Condition to Avoid:
AVOID OPEN CONTAINERS AND CONTACT WITH INCOMPATIBLE MATERIALS.
Hazardous Decomposition Products:
ARSENIC FUMES, ARSINE, OTHER ARSENIC COMPOUNDS.
Hazardous Polymerization Indicator: NO
Conditions to Avoid Polymerization:
N/P

Section 11 - Toxicological Information

ARSENIC METAL-MBE CHARGES, ARSENIC CHUNK & GRANULE

Toxicological Information:
LD50: TDLO 605 ?G/KG. ORAL-MAN TDLO 7857 MG/KG/55Y SKIN. DERMAL IRRITATION-RABBIT: UNKNOWN; SUBCUTANEOUS IMPLANT RABBIT LTLO 75 MG/KG. EYE IRRITATION-RABBIT: UNKNOWN.

Section 12 - Ecological Information
ARSENIC METAL-MBE CHARGES, ARSENIC CHUNK & GRANULE

Ecological Information:
N/P. EXPLO HAZ: FLAME. IN EVENT OF A FIRE OR SPILL CONTACT THE STATE DEPARTMENT OF THE ENVIRONMENT & YOUR REGIONAL OFFICE OF THE FEDERAL EPA. PHYSICAL DATA - APPEAR/ODOR: METAL AS COMPOUND, ASH*3, HAS GARLIC ODOR. ODOR THRESHOLD: N/A. MATLS TO AVOID: CHLORATES, IODATES, PEROXIDES, LITHIUM, NACL*3, KMNO*3, RB*2C*2, AGNO*4, NOCL, IF*5, CRO*3, CLF*3, CLO, BRF*3, BRF*5, BRN*3, RBC*3BCH, CSC*3BCH.

Section 13 - Disposal Considerations
ARSENIC METAL-MBE CHARGES, ARSENIC CHUNK & GRANULE

Waste Disposal Methods:
SOLID WASTES SHOULD BE VITRIFIED, PLACED IN LABELED CNTNR & BURIED IN EPA SUPERVISED FACILITY. ETCHING SOLNS & CUTTING WASTES SHOULD BE PRECIPITATED, CEMENTED/VITRIFIED & PLACED IN METAL/PLASTIC LABEL ED CNTNRS & BURIED IN EPA SUPERVISED FACILITY. PASS GAS THRU POTASSIUM PERMANGANATE, PRECIPITATE & T REAT AS ABOVE. WASTE MAY BE CONSIDERED (SUPDAT)

Section 14 - MSDS Transport Information
ARSENIC METAL-MBE CHARGES, ARSENIC CHUNK & GRANULE

Transport Information:
DOT REGULATED: YES. RQ: (NA - PIECES ARE LARGER THAN 100 MICROMETERS IN DIAMETER). IF REGULATED, PROPER SHIPPING NAME: ARSENIC. HAZARD CLASS: (6.1). IDENTIFICATION NO: (UN1558). PACKING GROUP: (III). LABEL REQUIRED: (POISON). INLAND B/L: ARSENIC, 6.1, UN1558, PACKING GROUP II, POISON. EMERGENCY RESPONSE GUIDE NO: (152).

Section 15 - Regulatory Information
ARSENIC METAL-MBE CHARGES, ARSENIC CHUNK & GRANULE

SARA Title III Information:
SARA TITLE III, SECT 313: LISTED.
Federal Regulatory Information:
TSCA: WE CERTIFY THAT ALL COMPONENTS OF THIS PRODUCT ARE REGISTERED UNDER THE REGULATIONS OF THE TOXIC SUBSTANCES CONTROL ACT. HMIS: HEALTH (4); FLAMMABILITY (0); REACTIVITY (1).
State Regulatory Information:

Section 16 - Other Information
ARSENIC METAL-MBE CHARGES, ARSENIC CHUNK & GRANULE

Other Information:
WASTE DISP METH: HAZARDOUS DEPENDING ON LEVEL OF TOXICITY CHARACTERISTIC OF ARSENIC. SEE 40 CFR 261.24 FOR DETERMINATION. RCRA HAZARDOUS WASTE: YES RCRA @: D004; IF TESTED POSITIVE AS CHARACT OF TOXIC ITY FOR ARSENIC. CERCLA: YES. RQ (1 LB RQ IS APPLICABLE ONLY IF DIAMETER OF PIECES OF SOLID METAL RELEASED IS LESS THAN 100 MICROMETERS OR 0.004 INCH. THIS PROD FORM IS LARGER THAN 100 MICROMETERS & H AS NO RQ IN ITS CURRENT FORM. IF AS HAZ WASTE CHARACT OF ARSENIC, THEN RQ=1LB. FOLLOW ALL LOCAL, STATE AND FEDERAL INFO & REGULATIONS.

HAZCOM Label Information

Product Identification: ARSENIC METAL-MBE CHARGES, ARSENIC CHUNK & GRANULE
CAGE: 87730
Assigned Individual: N
Company Name: UNITED MINERAL & CHEMICAL CORP
Company PO Box:
Company Street Address1: 1100 VALLEYBROOK AVE
Company Street Address2: LYNDHURST, NJ 07071 US
Health Emergency Telephone: (800)424-9300
Label Required Indicator: Y
Date Label Reviewed: 09/01/1999
Status Code: A
Manufacturer's Label Number:
Date of Label:
Year Procured: N/K
Organization Code: F
Chronic Hazard Indicator: Y
Eye Protection Indicator: YES
Skin Protection Indicator: YES
Respiratory Protection Indicator: YES
Signal Word: DANGER
Health Hazard: Severe
Contact Hazard: Severe
Fire Hazard: None
Reactivity Hazard: Slight

8/9/2002 10:40:46 AM

SAFETY DATA SHEET

Version 4.5
Revision Date 03/02/2015
Print Date 05/24/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Barium

Product Number : 237094
Brand : Aldrich

CAS-No. : 7440-39-3

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Substances and mixtures, which in contact with water, emit flammable gases (Category 2), H261
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H261 In contact with water releases flammable gases.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precautionary statement(s)
P223 Keep away from any possible contact with water, because of violent reaction and possible flash fire.
P231 + P232 Handle under inert gas. Protect from moisture.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.

P280	Wear protective gloves/ eye protection/ face protection.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P335 + P334	Brush off loose particles from skin. Immerse in cool water/ wrap in wet bandages.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P402 + P404	Store in a dry place. Store in a closed container.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	Ba
Molecular weight	:	137.33 g/mol
CAS-No.	:	7440-39-3
EC-No.	:	231-149-1

Hazardous components

Component	Classification	Concentration
Barium		
	Water-react. 2; Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3; H261, H315, H319, H335	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

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

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Dry powder

5.2 Special hazards arising from the substance or mixture
Barium oxide

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.Keep away from sources of ignition - No smoking.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Never allow product to get in contact with water during storage.

Store under inert gas.
Storage class (TRGS 510): Hazardous materials, which set free flammable gases upon contact with water

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Barium	7440-39-3	TWA	0.500000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Eye, skin, & Gastrointestinal irritation Muscular stimulation Not classifiable as a human carcinogen		

		TWA	0.500000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.500000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Eye irritation Muscular stimulation Skin irritation Gastrointestinal irritation Not classifiable as a human carcinogen		
		TWA	0.500000 mg/m3	USA. NIOSH Recommended Exposure Limits

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
impervious clothing, Flame retardant protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a) Appearance Form: Rods

		Colour: grey
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 725 °C (1,337 °F) - lit.
f)	Initial boiling point and boiling range	1,640 °C (2,984 °F) - lit.
g)	Flash point	Not applicable
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	3.6 g/mL at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Reacts violently with water.

10.4 Conditions to avoid
Exposure to moisture

10.5 Incompatible materials
Oxidizing agents, Water, acids, Oxygen, Chlorinated solvents, Carbon dioxide (CO2), Halogens, Halogenated hydrocarbon, Alcohols, Sulphur compounds, Hydrogen sulfide gas

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

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

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: CQ8370000

Stomach/intestinal disorders, Nausea, Vomiting, Drowsiness, Dizziness, Gastrointestinal disturbance, Weakness, Tremors, Seizures.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	mortality NOEC - Cyprinodon variegatus (sheepshead minnow) - 500 mg/l - 96 h
	LC50 - Cyprinodon variegatus (sheepshead minnow) - > 500 mg/l - 96 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1400 Class: 4.3 Packing group: II
Proper shipping name: Barium
Reportable Quantity (RQ): 1000 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1400 Class: 4.3 Packing group: II EMS-No: F-G, S-O
Proper shipping name: BARIUM

IATA
UN number: 1400 Class: 4.3 Packing group: II
Proper shipping name: Barium

15. REGULATORY INFORMATION

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

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Barium	7440-39-3	2007-07-01

SARA 311/312 Hazards
Reactivity Hazard, Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Barium	7440-39-3	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Barium	7440-39-3	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date

Barium	7440-39-3	2007-07-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Eye Irrit.	Eye irritation
H261	In contact with water releases flammable gases.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
Skin Irrit.	Skin irritation
STOT SE	Specific target organ toxicity - single exposure
Water-react.	Substances and mixtures, which in contact with water, emit flammable gases

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	
Flammability:	3
Physical Hazard	1

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	1
Special hazard.I:	W

Further information
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Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.5 Revision Date: 03/02/2015 Print Date: 05/24/2016

SAFETY DATA SHEET

Benzene

Section 1. Identification

GHS product identifier : Benzene

Chemical name : benzene

Other means of identification : benzene, purebenzol; cyclohexatriene; phenyl hydride; phene; coal naphtha; pyrobenzol

Product use : Synthetic/Analytical chemistry.

Synonym : benzene, purebenzol; cyclohexatriene; phenyl hydride; phene; coal naphtha; pyrobenzol

SDS # : 001062

Supplier's details : Airgas USA, LLC and its affiliates
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

Emergency telephone number (with hours of operation) : 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 2
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
GERM CELL MUTAGENICITY - Category 1B
CARCINOGENICITY - Category 1
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (bone marrow) - Category 1

GHS label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : Highly flammable liquid and vapor.
May form explosive mixtures with air.
Causes serious eye irritation.
Causes skin irritation.
May cause genetic defects.
May cause cancer.
Causes damage to organs through prolonged or repeated exposure. (bone marrow)

Precautionary statements

General : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

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Section 2. Hazards identification

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Wear protective gloves. Wear eye or face protection. Keep away from heat, sparks, open flames and hot surfaces. - No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Response : Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage : Store locked up. Store in a well-ventilated place. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Substance

Chemical name : benzene

Other means of identification : benzene, purebenzol; cyclohexatriene; phenyl hydride; phene; coal naphtha; pyrobenzol

CAS number/other identifiers

CAS number : 71-43-2

Product code : 001062

Ingredient name	%	CAS number
benzene	100	71-43-2

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

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Section 4. First aid measures

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

Skin contact : Causes skin irritation.

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Ingestion : Harmful if swallowed. Irritating to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

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Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO_2, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapor/gas is heavier than air and will spread along the ground. Vapors may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

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Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
benzene	**ACGIH TLV (United States, 3/2012).** **Absorbed through skin.** STEL: 8 mg/m³ 15 minutes. STEL: 2.5 ppm 15 minutes. TWA: 1.6 mg/m³ 8 hours. TWA: 0.5 ppm 8 hours. **NIOSH REL (United States, 1/2013).** STEL: 1 ppm 15 minutes. TWA: 0.1 ppm 10 hours. **OSHA PEL (United States, 6/2010).** STEL: 5 ppm 15 minutes. TWA: 1 ppm 8 hours. **OSHA PEL 1989 (United States, 3/1989).** STEL: 5 ppm 15 minutes. TWA: 1 ppm 8 hours. **OSHA PEL Z2 (United States, 11/2006).** AMP: 50 ppm 10 minutes. CEIL: 25 ppm TWA: 10 ppm 8 hours.

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Section 8. Exposure controls/personal protection

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Liquid. [Watery liquid.]

Color : Colorless. Yellowish.

Molecular weight : 78.12 g/mole

Molecular formula : C6-H6

Boiling/condensation point : 80.09°C (176.2°F)

Melting/freezing point : 5.49°C (41.9°F)

Critical temperature : 288.95°C (552.1°F)

Odor : Characteristic.

Odor threshold : Not available.

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Section 9. Physical and chemical properties

pH	:	Not available.
Flash point	:	Closed cup: -11°C (12.2°F)
Burning time	:	Not applicable.
Burning rate	:	Not applicable.
Evaporation rate	:	3.5 (butyl acetate = 1)
Flammability (solid, gas)	:	Not available.
Lower and upper explosive (flammable) limits	:	Lower: 1.2% Upper: 7.8%
Vapor pressure	:	10 kPa (75.006094245 mm Hg) [room temperature]
Vapor density	:	2.7 (Air = 1)
Specific Volume (ft^3/lb)	:	1.1403
Gas Density (lb/ft^3)	:	0.877 (20°C / 68 to °F)
Relative density	:	0.88
Solubility	:	Not available.
Solubility in water	:	1.88 g/l
Partition coefficient: n-octanol/water	:	2.13
Auto-ignition temperature	:	498°C (928.4°F)
Decomposition temperature	:	Not available.
SADT	:	Not available.
Viscosity	:	Dynamic (room temperature): 0.604 mPa·s (0.604 cP)

Section 10. Stability and reactivity

Reactivity	:	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	:	The product is stable.
Possibility of hazardous reactions	:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	:	Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapor to accumulate in low or confined areas.
Incompatibility with various substances	:	Highly reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products	:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hazardous polymerization	:	Under normal conditions of storage and use, hazardous polymerization will not occur.

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Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
benzene	LC50 Inhalation Gas. LD50 Oral	Rat Rat	10000 ppm 930 mg/kg	7 hours -

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
benzene	Eyes - Moderate irritant Eyes - Severe irritant Skin - Mild irritant Skin - Mild irritant Skin - Moderate irritant	Rabbit Rabbit Rat Rabbit Rabbit	- - - - -	88 milligrams 24 hours 2 milligrams 8 hours 60 microliters 24 hours 15 milligrams 24 hours 20 milligrams	- - - - -

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP
benzene	+	1	Known to be a human carcinogen.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
benzene	Category 1	Not determined	bone marrow

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : No known significant effects or critical hazards.

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Section 11. Toxicological information

Skin contact : Causes skin irritation.

Ingestion : Harmful if swallowed. Irritating to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : Causes damage to organs through prolonged or repeated exposure.

Carcinogenicity : May cause cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : May cause genetic defects.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

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Section 12. Ecological information

Product/ingredient name	$LogP_{ow}$	BCF	Potential
benzene	2.13	11	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

United States - RCRA Toxic hazardous waste "U" List

Ingredient	CAS #	Status	Reference number
Benzene (I,T)	71-43-2	Listed	U019

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1114	UN1114	UN114	UN1114	UN1114
UN proper shipping name	BENZENE	BENZENE	BENZENE	BENZENE	BENZENE
Transport hazard class(es)	3	3	3	3	3
Packing group	II	II	II	II	II
Environment	No.	No.	No.	No.	No.
Additional information	**Reportable quantity** 10 lbs / 4.54 kg [1.3675 gal / 5.1767 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.	**Explosive Limit and Limited Quantity Index** 1 **Passenger Carrying Road or Rail Index** 5	-	-	**Passenger and Cargo Aircraft**Quantity limitation: 5 L **Cargo Aircraft Only** Quantity limitation: 60 L **Limited Quantities - Passenger Aircraft** Quantity limitation: 1 L

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Section 14. Transport information

	Limited quantity Yes. **Packaging instruction** **Passenger aircraft** Quantity limitation: 5 L **Cargo aircraft** Quantity limitation: 60 L **Special provisions** IB2, T4, TP1				

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined

United States inventory (TSCA 8b): This material is listed or exempted.

Clean Water Act (CWA) 307: benzene

Clean Water Act (CWA) 311: benzene

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Fire hazard
Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

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Section 15. Regulatory information

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
benzene	100	Yes.	No.	No.	Yes.	Yes.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	benzene	71-43-2	100
Supplier notification	benzene	71-43-2	100

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : This material is listed.

New York : This material is listed.

New Jersey : This material is listed.

Pennsylvania : This material is listed.

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
benzene	Yes.	Yes.	6.4 µg/day (ingestion) 13 µg/day (inhalation)	24 µg/day (ingestion) 49 µg/day (inhalation)

Canada inventory : This material is listed or exempted.

International regulations

International lists : **Australia inventory (AICS)**: This material is listed or exempted.
China inventory (IECSC): This material is listed or exempted.
Japan inventory: This material is listed or exempted.
Korea inventory: This material is listed or exempted.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): This material is listed or exempted.
Philippines inventory (PICCS): This material is listed or exempted.
Taiwan inventory (CSNN): Not determined.

Chemical Weapons Convention List Schedule I Chemicals : Not listed

Chemical Weapons Convention List Schedule II Chemicals : Not listed

Chemical Weapons Convention List Schedule III Chemicals : Not listed

Canada

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Section 15. Regulatory information

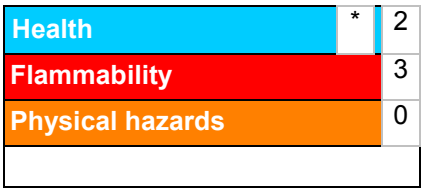
WHMIS (Canada) : Class B-2: Flammable liquid
Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

CEPA Toxic substances: This material is listed.
Canadian ARET: This material is not listed.
Canadian NPRI: This material is listed.
Alberta Designated Substances: This material is not listed.
Ontario Designated Substances: This material is not listed.
Quebec Designated Substances: This material is not listed.

Section 16. Other information

Canada Label requirements : Class B-2: Flammable liquid
Class D-2A: Material causing other toxic effects (Very toxic).
Class D-2B: Material causing other toxic effects (Toxic).

Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Reprinted with permission from NFPA 704-2001, Identification of the Hazards of Materials for Emergency Response Copyright ©1997, National Fire Protection Association, Quincy, MA 02269. This reprinted material is not the complete and official position of the National Fire Protection Association, on the referenced subject which is represented only by the standard in its entirety.

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of printing : 4/26/2015.

Date of issue/Date of revision : 4/26/2015.

Date of previous issue : 10/16/2014.

Version : 0.03

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Section 16. Other information

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United NationsACGIH – American Conference of Governmental Industrial Hygienists
AIHA – American Industrial Hygiene Association
CAS – Chemical Abstract Services
CEPA – Canadian Environmental Protection Act
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act (EPA)
CFR – United States Code of Federal Regulations
CPR – Controlled Products Regulations
DSL – Domestic Substances List
GWP – Global Warming Potential
IARC – International Agency for Research on Cancer
ICAO – International Civil Aviation Organisation
Inh – Inhalation
LC – Lethal concentration
LD – Lethal dosage
NDSL – Non-Domestic Substances List
NIOSH – National Institute for Occupational Safety and Health
TDG – Canadian Transportation of Dangerous Goods Act and Regulations
TLV – Threshold Limit Value
TSCA – Toxic Substances Control Act
WEEL – Workplace Environmental Exposure Level
WHMIS – Canadian Workplace Hazardous Material Information System

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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SAFETY DATA SHEET

Based on Directive 2001/58/EC et seq. of the Commission of the European Communities

BENZO[b]FLUORANTHENE

1. Identification of the substance/preparation and of the company/undertaking

1.1 Identification of the substance or preparation:

Synonyms: benz[e]acephenanthrylene

CAS No.	: 205-99-2	**BCR number**	: BCR-47
EC index No.	: 601-034-00-4	**NFPA code**	: N.D.
EINECS No.	: 205-911-9	**Molecular weight**	: 252.32
RTECS No.	: CU1400000	**Formula**	: $C_{20}H_{12}$

1.2 Use of the substance or the preparation:
Certified reference material for laboratory use only

1.3 Company/undertaking identification:
Institute for Reference Materials and Measurements
Retieseweg
B-2440 Geel
Tel. : +32 14 57 12 11
Fax : +32 14 58 42 73

1.4 Telephone number for emergency:
+32 70 245 245
Antigifcentrum
p/a Militair Hospitaal Koningin Astrid, Bruynstraat, B-1120 Brussel

2. Composition/information on ingredients

Hazardous ingredients	CAS No. EINECS No.	Conc. in %	Hazard symbol	Risks (R-phrases)
benzo[b]fluoranthene	205-99-2 205-911-9	100	T;N	45-50/53 (1)

(1) For R-phrases in full: see heading 16

3. Hazards identification

- May cause cancer
- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

4. First aid measures

4.1 Eye contact:
- Consult a doctor/medical service if irritation persists
- Rinse immediately with water
- Do not apply neutralizing agents

4.2 Skin contact:
- Consult a doctor/medical service if irritation persists
- Wash with water and soap
- Remove clothing before washing
-- Do not apply (chemical) neutralizing agents

4.3 After inhalation:
- Consult a doctor/medical service if breathing problems develop
- Remove the victim into fresh air
- Unconscious: maintain adequate airway and respiration

4.4 After ingestion:
- Consult a doctor/medical service if you feel unwell

- Immediately give lots of water to drink
-- Never give water to an unconscious person
- Do not induce vomiting

5. Fire-fighting measures

5.1 Suitable extinguishing media:
- Water spray
- Polymer foam
- ABC powder
- Carbon dioxide

5.2 Unsuitable extinguishing media:
- Solid water jet ineffective as extinguishing medium

5.3 Special exposure hazards:
- Not easily combustible
- Upon combustion CO and CO2 are formed

5.4 Instructions:
- Take account of toxic firefighting water
- Use firefighting water moderately and contain it

5.5 Special protective equipment for firefighters:
- Heat/fire exposure: compressed air/oxygen apparatus
- Dust cloud production: compressed air/oxygen apparatus

6. Accidental release measures

6.1 Personal protection/precautions: see 8.1/8.3/10.3

6.2 Environmental precautions:
- Prevent soil and water pollution
- Substance must not be discharged into the sewer
- Dam up the solid spill

6.3 Methods for cleaning up:
- Stop dust cloud by covering with sand/earth
- Carefully collect the spill/leftovers
- Scoop solid spill into closing containers
- Take collected spill to manufacturer/competent authority
- Clean contaminated surfaces with an excess of water
- Wash clothing and equipment after handling

7. Handling and storage

7.1 Handling:
- Observe strict hygiene
- Avoid prolonged and repeated contact with skin
- Avoid raising dust
- Do not discharge the waste into the drain
- Clean contaminated clothing

7.2 Storage:
- Keep container tightly closed.
- Store in a cool area
- Store in a dry area
- Store in a dark area
- Keep away from: heat sources, ignition sources, oxidizing agents, acids

Storage temperature : N.D. **°C**
Quantity limits : N.D. **kg**
Storage life : N.D.
Materials for packaging : N.D.

7.3 Specific uses: N.D.

8. Exposure controls/Personal protection

8.1 Exposure limit values:

TLV-TWA	:	not listed
TLV-STEL	:	not listed
TLV-Ceiling	:	not listed
OES-LTEL	:	not listed
OES-STEL	:	not listed
MEL-LTEL	:	not listed
MEL-STEL	:	not listed
MAK	:	not listed
TRK	:	not listed
MAC-TGG 8 h	:	not listed
MAC-TGG 15 min.	:	not listed
MAC-Ceiling	:	not listed
VME-8 h	:	not listed
VLE-15 min.	:	not listed
GWBB-8 h	:	not listed
GWK-15 min.	:	not listed
Momentary value	:	not listed

Sampling methods:

- Benzo(b)fluoranthene (Polynuclear aromatic hydrocarbons) NIOSH 5515
- Benzo(b)fluoranthene (Polynuclear aromatic hydrocarbons) NIOSH 5506

8.2 Exposure controls:

8.2.1 Occupational exposure controls:
- Measure the concentration in the air regularly
- Work under local exhaust/ventilation

8.2.2 Environmental exposure controls: see 13

8.3 Personal protection:

8.3.1 respiratory protection:
- Dust production: dust mask with filter type P3
- High dust production: compressed air/oxygen apparatus

8.3.2 hand protection:
- Gloves
  Suitable materials: No data available

- Breakthrough time: N.D.

8.3.3 eye protection:
- Safety glasses
- In case of dust production: protective goggles

8.3.4 skin protection:
- Protective clothing
- In case of dust production: head/neck protection
  Suitable materials: No data available

9. Physical and chemical properties

9.1 General information:

Appearance (at 20°C)	:	Crystalline solid / Needles
Odour	:	Odourless
Colour	:	Colourless to off-white

9.2 Important health, safety and environmental information:

pH value	:	N.D.	
Boiling point/boiling range	:	N.D.	**°C**
Flashpoint	:	N.D.	**°C**
Explosion limits	:	N.D.	**vol%** (**°C**)
Vapour pressure (at 20°C)	:	0.00000067	**hPa**
Vapour pressure (at 50°C)	:	N.D.	**hPa**
Relative density (at 20°C)	:	N.D.	
Water solubility	:	0.00000012	**g/100 ml**
Soluble in	:	Acetone, oils/fats	
Relative vapour density	:	N.D.	
Viscosity	:	N.D.	**Pa.s**
Partition coëfficient n-octanol/water	:	6.57	
Evaporation rate			
ratio butyl acetate	:	N.D.	
ratio ether	:	N.D.	

9.3 Other information:

Melting point/melting range	:	168	**°C**
Auto-ignition point	:	N.D.	**°C**
Saturation concentration	:	N.D.	**g/m^3**

10. Stability and reactivity

10.1 Conditions to avoid/reactivity:
- Stable under normal conditions

10.2 Materials to avoid:
- Keep away from: heat sources, ignition sources, oxidizing agents, acids

10.3 Hazardous decomposition products:
- Upon combustion CO and CO2 are formed
- Reacts violently with (strong) oxidizers
- Decomposes on exposure to (strong) acids

11. Toxicological information

11.1 Acute toxicity:

LD50 oral rat	:	N.D.	**mg/kg**
LD50 dermal rat	:	N.D.	**mg/kg**
LD50 dermal rabbit	:	N.D.	**mg/kg**
LC50 inhalation rat	:	N.D.	**mg/l/4 h**
LC50 inhalation rat	:	N.D.	**ppm/4 h**

11.2 Chronic toxicity:

benzo[b]fluoranthene

EC carc. cat.	:	2
EC muta. cat.	:	not listed
EC repr. cat.	:	not listed
Carcinogenicity (TLV)	:	A2
Carcinogenicity (MAC)	:	K
Carcinogenicity (VME)	:	not listed
Carcinogenicity (GWBB)	:	not listed
Carcinogenicity (MAK)	:	2
Mutagenicity (MAK)	:	not listed
Teratogenicity (MAK)	:	-
IARC classification	:	2B

11.3 Routes of exposure: ingestion, inhalation, eyes and skin
Caution! Substance is absorbed through the skin

11.4 Acute effects/symptoms:

- **AFTER SKIN CONTACT**
  Slight irritation

11.5 Chronic effects:

- Probably human carcinogenic
- Not classified as toxic to reproduction (EC)

- **ON CONTINUOUS/REPEATED EXPOSURE/CONTACT:**
  No specific information available

- SIMILAR PRODUCTS CAUSE FOLLOWING SYMPTOMS:
  Feeling of weakness
  Cracking of the skin
  Skin rash/inflammation
  Photoallergy
  Skin cancer
  Lung tissue affection/degeneration
  Enlargement/affection of the liver
  Affection of the renal tissue

12. Ecological information

12.1 Ecotoxicity:

- - No data available

12.2 Mobility:

- **Volatile organic compounds (VOC):** 0%

- Photolysis in water
- Forming sediments in water
- Insoluble in water

For other physicochemical properties see heading 9.

12.3 Persistence and degradability:

- **biodegradation BOD_5** : N.D. **% ThOD**
- **water** : - Not readily biodegradable in water
  - test: E 1/2 > 100 d.
- **soil** : **T ½:** > 87 **days**

12.4 Bioaccumulative potential:

- **log P_{ow}** : 6.57
- **BCF** : 168 h : 2800 (LAMELLIBRANCHIATA)
- Highly bioaccumulative

12.5 Other adverse effects:

- **WGK** : 3 (Classification based on the R-phrases in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 17 May 1999)
- **Effect on the ozone layer** : Not dangerous for the ozone layer (Council Regulation (EC) No 3093/94, O.J. L333 of 22/12/94)
- **Greenhouse effect** : no data available
- **Effect on waste water purification** : no data available

13. Disposal considerations

13.1 Provisions relating to waste:

- Waste material code (91/689/EEC, Council Decision 201/118/EC, O.J. L47 of 16/2/2001):16 05 06 (laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory)
- Waste material code (Flanders): 001, 045, 691
- Waste code (Germany): 59302
- Hazardous waste (91/689/EEC)

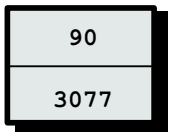
13.2 Disposal methods:

- Dissolve or mix with a combustible solvent
- Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber
- Do not discharge into surface water (2000/60/EEC, Council Decision 2455/2001/EC, O.J. L331 of 15/12/2001)

13.3 Packaging/Container:

- Waste material code packaging (91/689/EEC, Council Decision 2001/118/EC, O.J. L47 of 16/2/2001): 15 01 10 (packaging containing residues of or contaminated by dangerous substances)

14. Transport information



14.1 Classification of the substance in compliance with UN Recommendations

UN number	: 3077
CLASS	: 9
SUB RISKS	: -
PACKING	: III
PROPER SHIPPING NAME	: UN 3077, Environmentally hazardous substance, solid, n.o.s. (benz[e]acephenanthrylene)

14.2 ADR (transport by road)

CLASS	: 9
PACKING	: III
DANGER LABEL TANKS	: 9
DANGER LABEL PACKAGES	: 9

14.3 RID (transport by rail)

CLASS	: 9
PACKING	: III
DANGER LABEL TANKS	: 9
DANGER LABEL PACKAGES	: 9

14.4 ADNR (transport by inland waterways)

CLASS	: 9
PACKING	: III
DANGER LABEL TANKS	: 9
DANGER LABEL PACKAGES	: 9

14.5 IMDG (maritime transport)

CLASS	: 9
SUB RISKS	: -
PACKING	: III
MFAG	: -
EMS	: -
MARINE POLLUTANT	: P

14.6 ICAO (air transport)

CLASS	: 9
SUB RISKS	: -
PACKING	: III
PACKING INSTRUCTIONS PASSENGER AIRCRAFT	:
PACKING INSTRUCTIONS CARGO AIRCRAFT	:

14.7 Special precautions in connection with transport : none

When substances and their packaging meet the conditions established by ADR/RID/ADNR in chapter 3.4, **only** the following prescriptions shall be complied with:
each package shall display a diamond-shaped figure with the following inscription:
- 'UN 3077'
or, in the case of different goods with different identification numbers within a single package:
- the letters 'LQ'

15. Regulatory information

Enumerated in substance list Annex I of directive 67/548/EEC et sequens

Toxic

Dangerous for the environment

R45 : May cause cancer
R50/53 : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

S53 : Avoid exposure - obtain special instructions before use
S45 : In case of accident or if you feel unwell, seek medical advice (show the label where possible)
S60 : This material and/or its container must be disposed of as hazardous waste
S61 : Avoid release to the environment. Refer to special instructions/safety data sheets.

16. Other information

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

N.A. = NOT APPLICABLE
N.D. = NOT DETERMINED
***** = INTERNAL CLASSIFICATION

Full text of any R-phrases referred to under heading 2:

R45 : May cause cancer
R50/53 : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Exposure limits:
TLV : Threshold Limit Value - ACGIH USA 2000
OES : Occupational Exposure Standards - United Kingdom 1999
MEL : Maximum Exposure Limits - United Kingdom 1999
MAK : Maximale Arbeitsplatzkonzentrationen - Germany 2001
TRK : Technische Richtkonzentrationen - Germany 2001
MAC : Maximale aanvaarde concentratie - The Netherlands 2002
VME : Valeurs limites de Moyenne d'Exposition - France 1999
VLE : Valeurs limites d'Exposition à court terme - France 1999
GWBB : Grenswaarde beroepsmatige blootstelling - Belgium 1998
GWK : Grenswaarde kortstondige blootstelling - Belgium 1998
EC : Indicative occupational exposure limit values - directive 2000/39/EC

Chronic toxicity:
K : List of the carcinogenic substances and processes - The Netherlands 2002

Institute for Reference Materials and Measurements

SAFETY DATA SHEET

Based on Regulation (EC) No. 1907/2006 (REACH) Article 31 and Annex II

BCR-048R: benzo[k]fluoranthene

1. Identification of the substance/preparation and of the company/undertaking

1.1 Identification of the substance or preparation:

Product name: BCR-048R: benzo[k]fluoranthene

CAS number	207-08-9
EC index number	601-036-00-5
EINECS number	205-916-6
RTECS number	DF6350000
Molecular mass	252.32 g/mol
Formula	C20H12

1.2 Use of the substance/preparation:

Certified reference material for laboratory use only

1.3 Company/undertaking identification:

Institute for Reference Materials and Measurements
Retieseweg
B-2440 Geel
Tel: +32 14 57 12 11
Fax: +32 14 59 04 06
JRC-IRMM-RM-Sales@ec.europa.eu

1.4 Emergency telephone:

Poison Centre: +32 70 245 245

2. Hazards identification

NFPA: 1-1-2(*)

DSD/DPD

May cause cancer

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Other hazards

Its dust is explosive with air

Dust cloud can be ignited by a spark

Slightly irritant to skin

Slightly irritant to eyes

Caution! Substance is absorbed through the skin

No certainty about human mutagenic properties

Highly bioaccumulative

Not readily biodegradable in water

CLP

Carc. 1B	May cause cancer. (H350)
Aquatic Acute 1	Very toxic to aquatic life. (H400)
Aquatic Chronic 1	Very toxic to aquatic life with long lasting effects. (H410)

Other hazards

Its dust is explosive with air

Dust cloud can be ignited by a spark

Slightly irritant to skin

Slightly irritant to eyes

Caution! Substance is absorbed through the skin

No certainty about human mutagenic properties

Highly bioaccumulative

Not readily biodegradable in water

3. Composition/information on ingredients

Name	CAS No EINECS/ELINCS	Conc.	Classification according to DSD/DPD	Classification according to CLP	Note
benzo[k]fluoranthene	207-08-9 205-916-6		Carc. Cat. 2; R45 N; R50-53	Carc. 1B; H350 Aquatic Acute 1; H400 Aquatic Chronic 1; H410	

4. First aid measures

4.1 After inhalation:

Remove the victim into fresh air

Respiratory problems: consult a doctor/medical service

4.2 Skin contact:

Rinse with water

Do not apply (chemical) neutralizing agents

Take victim to a doctor if irritation persists

4.3 Eye contact:

Rinse with water

Do not apply neutralizing agents

Take victim to an ophthalmologist if irritation persists

4.4 After ingestion:

Rinse mouth with water

Immediately after ingestion: give lots of water to drink

Do not induce vomiting

Consult a doctor/medical service if you feel unwell

5. Fire-fighting measures

5.1 Suitable extinguishing media:

Water spray

Polyvalent foam

ABC powder

Carbon dioxide

5.2 Unsuitable extinguishing media:

No unsuitable extinguishing media known

5.3 Special exposure hazards:

Heating increases the fire hazard

Dust cloud can be ignited by a spark

Upon combustion CO and CO2 are formed

5.4 Instructions:

Take account of toxic fire-fighting water

Use water moderately and if possible collect or contain it

5.5 Special protective equipment for fire-fighters:

Gloves

Protective clothing

Heat/fire exposure: compressed air/oxygen apparatus

6. Accidental release measures

6.1 Personal precautions:

See heading 8.2

6.2 Environmental precautions:

Dam up the solid spill

Prevent soil and water pollution

Prevent spreading in sewers

See heading 13

6.3 Methods for cleaning up:

Scoop solid spill into closing containers
Carefully collect the spill/leftovers
Clean contaminated surfaces with an excess of water
Take collected spill to manufacturer/competent authority
Wash clothing and equipment after handling

7. Handling and storage

7.1 Handling:

Avoid raising dust
Warning! Avoid exposure
Keep away from naked flames/heat
Obtain special instructions before use
Observe strict hygiene
Keep container tightly closed
Do not discharge the waste into the drain

7.2 Storage:

Safe storage requirements:

Store in a cool area
Store in a dry area
Keep container in a well-ventilated place
Keep locked up
Unauthorized persons are not admitted
Meet the legal requirements

Keep away from:

oxidizing agents
(strong) acids

7.3 Specific use(s):

See information supplied by the manufacturer for the identified use(s)

8. Exposure controls/Personal protection

8.1 Exposure limit values:

8.1.1 Occupational exposure:

If limit values are applicable and available these will be listed below.

8.1.2 Sampling methods:

Product name	Test	Number	Sampling method	Remarks
Benz(a)Anthracene	OSHA	CSI		
Benz(a)Anthracene (Polynuclear aromatic hydrocarbons)	NIOSH	5506	adsorption tubes	
Benz(a)Anthracene (Polynuclear aromatic hydrocarbons)	NIOSH	5515	adsorption tubes	

8.2 Exposure controls:

8.2.1 Occupational exposure controls:

Measure the concentration in the air regularly
Carry operations in the open/under local exhaust/ventilation or with respiratory protection
Personal protective equipment:

a) Respiratory protection:

Dust production: dust mask with filter type P3

b) Hand protection:

Gloves

c) Eye protection:

Safety glasses
In case of dust production: protective goggles

d) Skin protection:

Protective clothing

8.2.2 Environmental exposure controls:

See headings 6.2, 6.3 and 13

9. Physical and chemical properties

9.1 General information:

Physical form	Crystalline solid
	Needles
Colour	Light yellow

9.2 Important health, safety and environmental information:

Boiling point	480 °C
Vapour pressure (20°C)	< 0.00001 hPa
Solubility in water	< 0.00001 g/100 ml
Solubility in solvents	Soluble in ethanol
	Soluble in acetic acid
	Soluble in oils/fats
Log Pow	6.84

9.3 Other information:

Melting point	217 °C

10. Stability and reactivity

10.1 Conditions to avoid:

Possible fire hazard

heat sources

ignition sources

Stability

No data available

Reactions

Reacts violently with (strong) oxidizers

10.2 Materials to avoid:

oxidizing agents

(strong) acids

10.3 Hazardous decomposition products:

Upon combustion CO and CO2 are formed

11. Toxicological information

11.1 Acute toxicity:

No (test)data available.

11.2 Chronic toxicity:

Probably human carcinogenic

No certainty about human mutagenic properties

Not classified as toxic to reproduction (EC)

BCR-048R: benzo[k]fluoranthene

EC carc cat	2
Listed in SZW - List of carcinogenic substances	yes
IARC - classification	2B
MAK - Krebserzeugend Kategorie	2
MAK - Keimzellmutagen Kategorie	3B
MAK - Schwangerschaft Gruppe	-
CLP carc cat	category 1B

11.3 Acute effects/symptoms:

Inhalation:

No data available

Skin contact:

Slight irritation

Eye contact:

Slight irritation

Ingestion:

No data available

11.4 Chronic effects:

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT:
No specific information available
SIMILAR PRODUCTS CAUSE FOLLOWING SYMPTOMS:
Feeling of weakness
Cracking of the skin
Skin rash/inflammation
Photoallergy
Skin cancer
Lung tissue affection/degeneration
Enlargement/affection of the liver
Affection of the renal tissue

12. Ecological information

12.1 Ecotoxicity:

No (test)data available.

12.2 Mobility:

Volatile organic compounds (VOC)	0 %
Solubility in/reaction with water	Insoluble in water
Water physicochemical processes	Forming sediments in water
Soil physicochemical processes	Adsorbs into the soil

12.3 Persistence and degradability:

Water abiotic degradation processes	Ozonation in water
Half-life soil	65 - 1400 days

Not readily biodegradable in water

12.4 Bioaccumulative potential:

Log Pow	6.84

Highly bioaccumulative

12.5 Results of PBT assessment:

Not applicable, based on available data

12.6 Other adverse effects:

Not dangerous for the ozone layer (Council Regulation (EC) no 1005/2009)

13. Disposal considerations

13.1 Provisions relating to waste:

Waste material code (Directive 2008/98/EC, decision 2001/118/EC)
16 05 06* : laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals
Depending on branch of industry and production process, also other EURAL codes may be applicable
Hazardous waste according to Directive 2008/98/EC

13.2 Disposal methods:

Dissolve or mix with a combustible solvent
Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber with energy recovery
Remove waste in accordance with local and/or national regulations
Do not discharge into surface water (2000/60/EC, Council decision 2455/2001/EC, O.J. L331 of 15/12/2001)

13.3 Packaging/Container:

Waste material code packaging (Directive 2008/98/EC)
15 01 10* : packaging containing residues of or contaminated by dangerous substances

{13.4 Entsorgung verschmutzter Gebinde:}

14. Transport information

ADR

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Techn./chem. name ADR	benzo[k]fluoranthene
UN number	3077
Class	9
Packing group	III
Hazard identification number	90
Classification code	M7
Labels	9
Environmentally hazardous substance mark	yes

RID

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Techn./chem. name RID	benzo[k]fluoranthene
UN number	3077
Class	9
Packing group	III
Classification code	M7
Labels	9
Environmentally hazardous substance mark	yes

ADNR

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Techn./chem. name ADNR	benzo[k]fluoranthene
UN number	3077
Class	9
Packing group	III
Classification code	M7
Labels	9
Environmentally hazardous substance mark	yes

IMO

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Techn./chem. name IMO	benzo[k]fluoranthene
UN number	3077
Class	9
Packing group	III
Labels	9
Marine pollutant	P
Environmentally hazardous substance mark	yes

ICAO

Proper shipping name	Environmentally hazardous substance, solid, n.o.s.
Techn./chem. name ICAO	benzo[k]fluoranthene
UN number	3077
Class	9
Packing group	III
Labels	9
Environmentally hazardous substance mark	yes

15. Regulatory information

15.1 EU Legislation:

DSD/DPD

Enumerated in substance list Annex I of directive 67/548/EEC et sequens

Dangerous for the environment

R-phrases

45	May cause cancer
50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

S-phrases

53	Avoid exposure - obtain special instructions before use
45	In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)
60	This material and its container must be disposed of as hazardous waste
61	Avoid release to the environment. Refer to special instructions/safety data sheets.

Additional recommendations

	Restricted to professional users.

CLP

Classification and labelling according to Regulation (EC) No 1272/2008 – Annex VI and after evaluation of available test data

Signal word

Dgr	Danger

H-statements

H350	May cause cancer.
H410	Very toxic to aquatic life with long lasting effects.

P-statements

P202	Do not handle until all safety precautions have been read and understood.
P281	Use personal protective equipment as required.
P273	Avoid release to the environment.
P308 + P313	IF exposed or concerned: Get medical advice/attention.
P391	Collect spillage.
P405	Store locked up.

Supplemental information

	Restricted to professional users.

15.2 National provisions:

15.3 Specific community rules:

Enumerated in Annex XVII of Regulation (EC) No. 1907/2006: Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles.

Legislation	Reference legislation
EG/552/2009	See column 1: 28.
EG/552/2009	See column 1: 50. g)

16. Other information

The information in this safety data sheet is based on data and samples provided to BIG. The sheet was written to the best of our ability and according to the state of knowledge at that time. The safety data sheet only constitutes a guideline for the safe handling, use, consumption, storage, transport and disposal of the substances/preparations/mixtures mentioned under point 1. New safety data sheets are written from time to time. Only the most recent versions may be used. Old versions must be destroyed. Unless indicated otherwise word for word on the safety data sheet, the information does not apply to substances/preparations/mixtures in purer form, mixed with other substances or in processes. The safety data sheet offers no quality specification for the substances/preparations/mixtures in question.

Compliance with the instructions in this safety data sheet does not release the user from the obligation to take all measures dictated by common sense, regulations and recommendations or which are necessary and/or useful based on the real applicable circumstances. BIG does not guarantee the accuracy or exhaustiveness of the information provided. Use of this safety data sheet is subject to the licence and liability limiting conditions as stated in your BIG licence agreement. All intellectual property rights to this sheet are the property of BIG and its distribution and reproduction are limited. Consult your BIG licence agreement for details.

(*) = INTERNAL CLASSIFICATION (NFPA)

PBT-substances = persistent, bioaccumulative and toxic substances

DSD Dangerous Substance Directive
DPD Dangerous Preparation Directive
CLP (EU-GHS) Classification, labelling and packaging (Globally Harmonised System in Europe)

Full text of any R-phrases referred to under headings 2 and 3:

R45	May cause cancer
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Full text of any H-statements referred to under headings 2 and 3:

H350	May cause cancer.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Full text of any classes referred to under headings 2 and 3:

Aquatic Acute	Hazardous to the aquatic environment - acute
Aquatic Chronic	Hazardous to the aquatic environment - chronic
Carc.	Carcinogenicity

SAFETY DATA SHEET

Based on Directive 2001/58/EC et seq. of the Commission of the European Communities

BENZ[a]ANTHRACENE

1. Identification of the substance/preparation and of the company/undertaking

1.1 Identification of the substance or preparation:

Synonyms: benzo(a)anthracene

CAS No.	: 56-55-3	**BCR number**	: BCR-271
EC index No.	: 601-033-00-9	**NFPA code**	: N.D.
EINECS No.	: 200-280-6	**Molecular weight**	: 228.30
RTECS No.	: CV9275000	**Formula**	: C18H12

1.2 Use of the substance or the preparation:
Certified reference material for laboratory use only

1.3 Company/undertaking identification:
Institute for Reference Materials and Measurements
Retieseweg
B-2440 Geel
Tel. : +32 14 57 12 11
Fax : +32 14 58 42 73

1.4 Telephone number for emergency:
+32 70 245 245
Antigifcentrum
p/a Militair Hospitaal Koningin Astrid, Bruynstraat, B-1120 Brussel

2. Composition/information on ingredients

Hazardous ingredients	CAS No. EINECS No.	Conc. in %	Hazard symbol	Risks (R-phrases)
Benzo[a]anthracene	56-55-3 200-280-6	100	T;N	45-50/53 (1)

(1) For R-phrases in full: see heading 16

3. Hazards identification

- May cause cancer
- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

4. First aid measures

4.1 Eye contact:
- Consult a doctor/medical service if irritation persists
- Rinse immediately with water

4.2 Skin contact:
- Consult a doctor/medical service if irritation persists
- Wash with water and soap
- Remove clothing before washing

4.3 After inhalation:
- Consult a doctor/medical service if breathing problems develop
- Remove the victim into fresh air
- Unconscious: maintain adequate airway and respiration

4.4 After ingestion:
- Consult a doctor/medical service if you feel unwell
- Immediately give lots of water to drink
- Never give water to an unconscious person

5. Fire-fighting measures

5.1 Suitable extinguishing media:
- Water spray
- Alcohol foam
- Polymer foam
- ABC powder
- Carbon dioxide

5.2 Unsuitable extinguishing media:
- Solid water jet ineffective as extinguishing medium

5.3 Special exposure hazards:
- Not easily combustible
- Upon combustion CO and CO2 are formed

5.4 Instructions:
- Take account of toxic firefighting water
- Use firefighting water moderately and contain it

5.5 Special protective equipment for firefighters:
- Heat/fire exposure: compressed air/oxygen apparatus
- Dust cloud production: compressed air/oxygen apparatus

6. Accidental release measures

6.1 Personal protection/precautions: see heading 8.1/8.3/10.3

6.2 Environmental precautions:
- Prevent soil and water pollution
- Substance must not be discharged into the sewer
- Dam up the solid spill

6.3 Methods for cleaning up:
- Stop dust cloud by covering with sand/earth
- Carefully collect the spill/leftovers
- Scoop solid spill into closing containers
- Take collected spill to manufacturer/competent authority
- Clean contaminated surfaces with an excess of water
- Wash clothing and equipment after handling

7. Handling and storage

7.1 Handling:
- Observe strict hygiene
- Avoid prolonged and repeated contact with skin
- Avoid raising dust
- Do not discharge the waste into the drain
- Remove contaminated clothing immediately

7.2 Storage:
- Keep container tightly closed. Store in a cool area. Store in a dry area.
- Store in a dark area.
- Keep away from: heat sources, ignition sources, oxidizing agents, acids

Storage temperature : N.D. **°C**
Quantity limits : N.D. **kg**
Storage life : N.D.
Materials for packaging :
- suitable : no data available

- to avoid : no data available

7.3 Specific uses:
See information supplied by the manufacturer

8. Exposure controls/Personal protection

8.1 Exposure limit values:

TLV-TWA	:	**mg/m³**	-	**ppm**
TLV-STEL	:	**mg/m³**	-	**ppm**
TLV-Ceiling	:	**mg/m³**		**ppm**
OES-LTEL	:	**mg/m³**		**ppm**
OES-STEL	:	**mg/m³**		**ppm**
MAK	:	**mg/m³**		**ppm**
TRK	:	**mg/m³**		**ppm**
MAC-TGG 8 h	:	**mg/m³**		
MAC-TGG 15 min.	:	**mg/m³**		
MAC-Ceiling	:	**mg/m³**		
VME-8 h	:	**mg/m³**		**ppm**
VLE-15 min.	:	**mg/m³**		**ppm**
GWBB-8 h	:	**mg/m³**		**ppm**
GWK-15 min.	:	**mg/m³**		**ppm**
Momentary value	:	**mg/m³**		**ppm**
EC	:	**mg/m³**		**ppm**
EC-STEL	:	**mg/m³**		**ppm**

Sampling methods:

-	Benz(a)Anthracene (Polynuclear aromatic hydrocarbons)	NIOSH 5506
-	Benz(a)Anthracene (Polynuclear aromatic hydrocarbons)	NIOSH 5515
-	Benz(a)Anthracene	OSHA CSI

8.2 Exposure controls:

8.2.1 Occupational exposure controls:
- Measure the concentration in the air regularly
- Work under local exhaust/ventilation

8.2.2 Environmental exposure controls: see heading 13

8.3 Personal protection:

8.3.1 respiratory protection:
- Dust production: dust mask with filter type P3
- High dust production: compressed air/oxygen apparatus

8.3.2 hand protection:
- Gloves
  Suitable materials: No data available

- Breakthrough time: N.D.

8.3.3 eye protection:
- Safety glasses
- In case of dust production: protective goggles

8.3.4 skin protection:
- Protective clothing
- In case of dust production: head/neck protection
  Suitable materials: No data available

9. Physical and chemical properties

9.1 General information:

Appearance (at 20°C)	:	Crystalline solid / Scales
Odour	:	Odourless
Colour	:	Colourless to fluorescent yellow-green

9.2 Important health, safety and environmental information:

pH value	:	N.D.	
Boiling point/boiling range	:	N.A.	**°C**
Flashpoint	:	N.D.	**°C**
Explosion limits	:	N.D.	**vol%** (**°C**)
Vapour pressure (at 20°C)	:	0.00007	**hPa**
Vapour pressure (at 50°C)	:	N.D.	**hPa**
Relative density (at 20°C)	:	1.3	
Water solubility	:	0.00001	**g/100 ml**
Soluble in	:	Ether, acetone, oils/fats	
Relative vapour density	:	N.D.	
Viscosity	:	N.D.	**Pa.s**
Partition coëfficient n-octanol/water	:	5.61/5.79	
Evaporation rate			
ratio to butyl acetate	:	N.D.	
ratio to ether	:	N.D.	

9.3 Other information:

Melting point/melting range	:	160	**°C**
Auto-ignition point	:	N.D.	**°C**
Saturation concentration	:	N.D.	**g/m^3**

10. Stability and reactivity

10.1 Conditions to avoid/reactivity:
- Stable under normal conditions

10.2 Materials to avoid:
- Keep away from: heat sources, ignition sources, oxidizing agents, acids

10.3 Hazardous decomposition products:
- Upon combustion CO and CO2 are formed
- Reacts violently with (strong) oxidizers
- Decomposes on exposure to (strong) acids

11. Toxicological information

11.1 Acute toxicity:

LD50 oral rat	:	N.D.	**mg/kg**
LD50 dermal rat	:	N.D.	**mg/kg**
LD50 dermal rabbit	:	N.D.	**mg/kg**
LC50 inhalation rat	:	N.D.	**mg/l/4 h**
LC50 inhalation rat	:	N.D.	**ppm/4 h**

11.2 Chronic toxicity:

EC carc. cat.	:	2
EC muta. cat.	:	not listed
EC repr. cat.	:	not listed
Carcinogenicity (TLV)	:	A2
Carcinogenicity (MAC)	:	K
Carcinogenicity (VME)	:	not listed
Carcinogenicity (GWBB)	:	not listed
Carcinogenicity (MAK)	:	2
Mutagenicity (MAK)	:	not listed
Teratogenicity (MAK)	:	-
IARC classification	:	2A

11.3 Routes of exposure: ingestion, inhalation, eyes and skin
Caution! Substance is absorbed through the skin

11.4 Acute effects/symptoms:

AFTER SKIN CONTACT
- Slight irritation

11.5 Chronic effects:

- Probably human carcinogenic
- Mutagenicity: AMES test positive
- Probably human mutagenic

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT:
- No specific information available

SIMILAR PRODUCTS CAUSE FOLLOWING SYMPTOMS:
- Feeling of weakness
- Photoallergy
- Skin rash/inflammation
- Cracking of the skin
- Skin cancer
- Lung tissue affection/degeneration
- Enlargement/affection of the liver
- Affection of the renal tissue

12. Ecological information

12.1 Ecotoxicity:

- LC50 (65 h) : 0.0018 mg/l (PIMEPHALES PROMELAS)
- EC50 (96 h) : 0.01 mg/l (DAPHNIA PULEX)

12.2 Mobility:

- **Volatile organic compounds (VOC):** 0%

- Photolysis in water
- Ozonation in water
- Insoluble in water

For other physicochemical properties see heading 9.

12.3 Persistence and degradability:

- **biodegradation BOD_5** : N.D. **% ThOD**
- **water** : - Not readily biodegradable in water
- **soil** : **T ½:** > 100 **days**

12.4 Bioaccumulative potential:
- **log P_{ow}** : 5.61/5.79
- **BCF** : 72 h : 350 (LEUCISCUS IDUS)
- Highly bioaccumulative

12.5 Other adverse effects:

- **WGK** : 3 (Classification based on the R-phrases in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 17 May 1999)
- **Effect on the ozone layer** : Not dangerous for the ozone layer (Council Regulation (EC) 3093/94)
- **Greenhouse effect** : no data available
- **Effect on waste water purification** : no data available

13. Disposal considerations

13.1 Provisions relating to waste:

- Waste material code (91/689/EEC, Council Decision 2001/118/EC, O.J. L47 of 16/2/2001): 16 05 06 (laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals)
- Waste material code (Flanders): 001, 045, 691
- Waste code (Germany): 59302
- Hazardous waste (91/689/EEC)

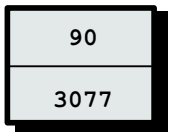
13.2 Disposal methods:

- Dissolve or mix with a combustible solvent
- Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber
- Do not discharge into surface water (2000/60/EEC, Council Decision 2455/2001/EC)

13.3 Packaging/Container:

- Waste material code packaging (91/689/EEC, Council Decision 2001/118/EC, O.J. L47 of 16/2/2001): 15 01 10 (packaging containing residues of or contaminated by dangerous substances)

14. Transport information



14.1 Classification of the substance in compliance with UN Recommendations

UN number	: 3077
CLASS	: 9
SUB RISKS	: -
PACKING	: III
PROPER SHIPPING NAME	: UN 3077, Environmentally hazardous substance, solid, n.o.s. (benzo[a]anthracene)

14.2 ADR (transport by road)

CLASS	: 9
PACKING	: III
DANGER LABEL TANKS	: 9
DANGER LABEL PACKAGES	: 9

14.3 RID (transport by rail)

CLASS	: 9
PACKING	: III
DANGER LABEL TANKS	: 9
DANGER LABEL PACKAGES	: 9

14.4 ADNR (transport by inland waterways)

CLASS	: 9
PACKING	: III
DANGER LABEL TANKS	: 9
DANGER LABEL PACKAGES	: 9

14.5 IMDG (maritime transport)

CLASS	: 9
SUB RISKS	: -
PACKING	: III
MFAG	: -
EMS	: -
MARINE POLLUTANT	: P

14.6 ICAO (air transport)

CLASS	: 9
SUB RISKS	: -
PACKING	: III
PACKING INSTRUCTIONS PASSENGER AIRCRAFT	:
PACKING INSTRUCTIONS CARGO AIRCRAFT	:

14.7 Special precautions in connection with transport : none

14.8 Limited quantities (LQ) :

When substances and their packaging meet the conditions established by ADR/RID/ADNR in chapter 3.4, **only** the following prescriptions shall be complied with:
each package shall display a diamond-shaped figure with the following inscription:
- 'UN 3077'
or, in the case of different goods with different identification numbers within a single package:
- the letters 'LQ'

15. Regulatory information

Enumerated in substance list Annex I of directive 67/548/EEC et sequens

Toxic

Dangerous for the environment

R45 : May cause cancer
R50/53 : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

S53 : Avoid exposure - obtain special instructions before use
S45 : In case of accident or if you feel unwell, seek medical advice (show the label where possible)
S60 : This material and/or its container must be disposed of as hazardous waste
S61 : Avoid release to the environment. Refer to special instructions/safety data sheets.

16. Other information

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

N.A. = NOT APPLICABLE
N.D. = NOT DETERMINED
***** = INTERNAL CLASSIFICATION

Full text of any R-phrases referred to under heading 2:

R45 : May cause cancer
R50/53 : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Exposure limits:
TLV : Threshold Limit Value - ACGIH USA 2000
OES : Occupational Exposure Standards - United Kingdom 1999
MEL : Maximum Exposure Limits - United Kingdom 1999
MAK : Maximale Arbeitsplatzkonzentrationen - Germany 2001
TRK : Technische Richtkonzentrationen - Germany 2001
MAC : Maximale aanvaarde concentratie - The Netherlands 2002
VME : Valeurs limites de Moyenne d'Exposition - France 1999
VLE : Valeurs limites d'Exposition à court terme - France 1999
GWBB : Grenswaarde beroepsmatige blootstelling - Belgium 1998
GWK : Grenswaarde kortstondige blootstelling - Belgium 1998
EC : Indicative occupational exposure limit values - directive 2000/39/EC

Chronic toxicity:
K : List of the carcinogenic substances and processes - The Netherlands 2002

Material Safety Data Sheet

Benzo[a]pyrene, 98%

ACC# 37175

Section 1 - Chemical Product and Company Identification

MSDS Name: Benzo[a]pyrene, 98%
Catalog Numbers: AC105600000, AC105600010, AC105601000, AC377200000, AC377200010, AC377201000 AC377201000
Synonyms: 3,4-Benzopyrene; 3,4-Benzpyrene; Benzo[def]chrysene.
Company Identification:

Acros Organics N.V.
One Reagent Lane
Fair Lawn, NJ 07410

For information in North America, call: 800-ACROS-01
For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
50-32-8	Benzo[a]pyrene	>96	200-028-5

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: yellow to brown powder.
Danger! May cause harm to the unborn child. May impair fertility. May cause eye, skin, and respiratory tract irritation. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Cancer hazard. May cause allergic skin reaction. May cause heritable genetic damage.
Target Organs: Reproductive system, skin.

Potential Health Effects

Eye: May cause eye irritation.
Skin: May cause skin irritation. May be harmful if absorbed through the skin. May cause an allergic reaction in certain individuals.
Ingestion: May cause irritation of the digestive tract. The toxicological properties of this substance have not been fully investigated. May be harmful if swallowed.
Inhalation: May cause respiratory tract irritation. The toxicological properties of this substance have not been fully investigated. May be harmful if inhaled.
Chronic: May cause cancer in humans. May cause reproductive and fetal effects. Laboratory experiments have resulted in mutagenic effects.

Section 4 - First Aid Measures

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

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.
Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or appropriate foam.
Flash Point: Not available.
Autoignition Temperature: Not available.
Explosion Limits, Lower: Not available.
Upper: Not available.
NFPA Rating: (estimated) Health: 2; Flammability: 0; Instability: 0

Section 6 - Accidental Release Measures

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

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Use with adequate ventilation. Minimize dust generation and accumulation. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation.
Storage: Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

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

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs

Benzo[a]pyrene	0.2 mg/m3 TWA (as benzene soluble aerosol) (listed under Coal tar pitches).	0.1 mg/m3 TWA (cyclohexane-extractable fraction) (listed under Coal tar pitches).80 mg/m3 IDLH (listed under Coal tar pitches).	0.2 mg/m3 TWA (as benzene soluble fraction) (listed under Coal tar pitches).

OSHA Vacated PELs: Benzo[a]pyrene: No OSHA Vacated PELs are listed for this chemical.
Personal Protective Equipment
Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin: Wear appropriate protective gloves to prevent skin exposure.
Clothing: Wear appropriate protective clothing to prevent skin exposure.
Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Powder
Appearance: yellow to brown
Odor: faint aromatic odor
pH: Not available.
Vapor Pressure: Not available.
Vapor Density: Not available.
Evaporation Rate: Not available.
Viscosity: Not available.
Boiling Point: 495 deg C @ 760 mm Hg
Freezing/Melting Point:175 - 179 deg C
Decomposition Temperature: Not available.
Solubility: 1.60x10-3 mg/l @25°C
Specific Gravity/Density: Not available.
Molecular Formula:C20H12
Molecular Weight:252.31

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures.
Conditions to Avoid: Dust generation.
Incompatibilities with Other Materials: Strong oxidizing agents.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.
Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:
CAS# 50-32-8: DJ3675000
LD50/LC50:

Not available.

Carcinogenicity:
CAS# 50-32-8:

- **ACGIH:** A2 - Suspected Human Carcinogen
- **California:** carcinogen, initial date 7/1/87
- **NTP:** Suspect carcinogen
- **IARC:** Group 1 carcinogen (listed as Coal tar pitches).

Epidemiology: No information found
Teratogenicity: No information found
Reproductive Effects: Adverse reproductive effects have occurred in experimental animals.
Mutagenicity: Mutagenic effects have occurred in humans.Mutagenic effects have occurred in experimental animals.
Neurotoxicity: No information found
Other Studies:

Section 12 - Ecological Information

No information available.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.
RCRA P-Series: None listed.
RCRA U-Series:
CAS# 50-32-8: waste number U022.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	NOT REGULATED FOR DOMESTIC TRANSPORT	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOL (Benzo{a} pyrene)
Hazard Class:		9
UN Number:		UN3077
Packing Group:		III

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 50-32-8 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 50-32-8: 1 lb final RQ; 0.454 kg final RQ

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 50-32-8: immediate, delayed.

Section 313

This material contains Benzo[a]pyrene (CAS# 50-32-8, >96%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR

Clean Air Act:

This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.
CAS# 50-32-8 is listed as a Priority Pollutant under the Clean Water Act.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 50-32-8 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65

The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:

WARNING: This product contains Benzo[a]pyrene, a chemical known to the state of California to cause cancer.

California No Significant Risk Level: CAS# 50-32-8: 0.06 æg/day NSRL

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:

T N

Risk Phrases:

R 43 May cause sensitization by skin contact.
R 45 May cause cancer.
R 46 May cause heritable genetic damage.
R 60 May impair fertility.
R 61 May cause harm to the unborn child.
R 50/53 Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Safety Phrases:

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

S 53 Avoid exposure - obtain special instructions before use.
S 60 This material and its container must be disposed of as hazardou
s waste.
S 61 Avoid release to the environment. Refer to special instructions
/safety data sheets.

WGK (Water Danger/Protection)
CAS# 50-32-8: No information available.

Canada - DSL/NDSL
CAS# 50-32-8 is listed on Canada's DSL List.

Canada - WHMIS
This product has a WHMIS classification of D2A.
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List
CAS# 50-32-8 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 9/02/1997
Revision #7 Date: 6/30/2006

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

SAFETY DATA SHEET

Revision Date 10-Feb-2015 **Revision Number** 1

1. Identification

Product Name **Benzo[ghi]perylene**

Cat No. : **AC105550000; AC105550050; AC105550250; AC105551000**

Synonyms 1,12-Benzoperylene

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Entity / Business Name
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification
Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Label Elements
None required

Hazards not otherwise classified (HNOC)
Very toxic to aquatic life with long lasting effects

3. Composition / information on ingredients

Component	CAS-No	Weight %
Benzo(ghi)perylene	191-24-2	> 98

4. First-aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Obtain medical attention.

Inhalation Remove from exposure, lie down. Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Obtain medical attention.

Ingestion Clean mouth with water. Get medical attention.

Most important symptoms/effects No information available.
Notes to Physician Treat symptomatically

5. Fire-fighting measures

Unsuitable Extinguishing Media No information available

Flash Point No information available
Method - No information available

Autoignition Temperature No information available
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products
Carbon monoxide (CO) Carbon dioxide (CO_2)
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
0	0	0	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment.
Environmental Precautions See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage.

Methods for Containment and Clean Up Avoid dust formation. Sweep up or vacuum up spillage and collect in suitable container for disposal. Do not let this chemical enter the environment.

7. Handling and storage

Handling Avoid contact with skin and eyes. Do not breathe dust. Do not breathe vapors or spray mist.

Storage Keep in a dry, cool and well-ventilated place. Keep container tightly closed.

8. Exposure controls / personal protection

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/face Protection	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin and body protection	Wear appropriate protective gloves and clothing to prevent skin exposure.
Respiratory Protection	Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Solid
Appearance	Yellow
Odor	Odorless
Odor Threshold	No information available
pH	No information available
Melting Point/Range	276 - 280 °C / 528.8 - 536 °F
Boiling Point/Range	No information available > @ 760 mmHg
Flash Point	No information available
Evaporation Rate	No information available
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available
Vapor Density	No information available
Relative Density	No information available
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	C22 H12
Molecular Weight	276.33

10. Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Stable.
Conditions to Avoid	Excess heat. Exposure to light. Incompatible products.
Incompatible Materials	Strong oxidizing agents
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO_2)
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information	No acute toxicity information is available for this product
Component Information	
Toxicologically Synergistic	No information available

Products

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Benzo(ghi)perylene	191-24-2	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known
STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity

Do not empty into drains.

Persistence and Degradability No information available
Bioaccumulation/ Accumulation No information available.

Mobility .

Component	log Pow
Benzo(ghi)perylene	7.23

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT Not regulated
TDG Not regulated
IATA Not regulated
IMDG/IMO Not regulated

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL

Benzo(ghi)perylene	-	-	-	205-883-8	-		-	-	-	-	-

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Benzo(ghi)perylene	191-24-2	> 98	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Benzo(ghi)perylene	-	-	X	X

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Benzo(ghi)perylene	5000 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Benzo(ghi)perylene	X	X	X	X	-

U.S. Department of Transportation

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class Non-controlled

16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Revision Date 10-Feb-2015
Print Date 10-Feb-2015
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS

Fisher Scientific

Part of Thermo Fisher Scientific

SAFETY DATA SHEET

Creation Date 01-May-2012 **Revision Date** 23-Jan-2015 **Revision Number** 2

1. Identification

Product Name **Benzoic acid**

Cat No. : **A63-500; A65-500; A68-30**

Synonyms Benzenecarboxylic acid; Benzenemethanoic acid; Phenylcarboxylic acid; Phenylformic acid; Benzeneformic acid; Carboxybenzene

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin Corrosion/irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 1
Specific target organ toxicity - (repeated exposure)	Category 1
Target Organs - Lungs.	

Label Elements

Signal Word
Danger

Hazard Statements
Causes skin irritation
Causes serious eye damage
Causes damage to organs through prolonged or repeated exposure

Precautionary Statements
Prevention
Wash face, hands and any exposed skin thoroughly after handling
Wear protective gloves/protective clothing/eye protection/face protection
Do not breathe dust/fume/gas/mist/vapors/spray
Do not eat, drink or smoke when using this product
Response
Get medical attention/advice if you feel unwell
Skin
IF ON SKIN: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
Immediately call a POISON CENTER or doctor/physician
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
May form combustible dust concentrations in air

3. Composition / information on ingredients

Component	CAS-No	Weight %
Benzoic acid	65-85-0	>95

4. First-aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Inhalation Remove from exposure, lie down. Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Obtain medical attention.

Ingestion Do not induce vomiting. Obtain medical attention.

Most important symptoms/effects Causes eye burns. Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Water spray. Carbon dioxide (CO_2). Dry chemical. chemical foam.

Unsuitable Extinguishing Media No information available

Flash Point 121 °C / 249.8 °F
Method - No information available

Autoignition Temperature Not applicable 570 °C / 1058 °F
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Dust can form an explosive mixture in air.

Hazardous Combustion Products
Carbon monoxide (CO) Carbon dioxide (CO_2)
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
3	1	0	N/A

6. Accidental release measures

Personal Precautions Use personal protective equipment. Ensure adequate ventilation.
Environmental Precautions See Section 12 for additional ecological information.

Methods for Containment and Clean Up Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.

7. Handling and storage

Handling Avoid contact with skin and eyes. Avoid ingestion and inhalation. Do not breathe dust.

Storage Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep away from heat and sources of ignition.

8. Exposure controls / personal protection

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Measures Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Solid
Appearance	Off-white
Odor	aromatic
Odor Threshold	No information available
pH	2.5-3.5 2.9 g/l water
Melting Point/Range	121 - 123 °C / 249.8 - 253.4 °F
Boiling Point/Range	249 °C / 480.2 °F @ 760 mmHg
Flash Point	121 °C / 249.8 °F

Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	1.3 hPa @ 96 °C
Vapor Density	Not applicable
Relative Density	No information available
Solubility	soluble
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	Not applicable 570 °C / 1058 °F
Decomposition Temperature	No information available
Viscosity	Not applicable
Molecular Formula	C7 H6 O2
Molecular Weight	122.12

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products. Avoid dust formation.

Incompatible Materials Strong acids, Strong bases, Strong oxidizing agents, Strong reducing agents, Metals

Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO_2)

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions Aqueous solution, May react with metals and lead to the formation of flammable hydrogen gas.

11. Toxicological information

Acute Toxicity

Product Information

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Benzoic acid	1700 mg/kg (Rat) 2565 mg/kg (Rat)	Not listed	26 mg/m³ (Rat) 1 h

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation Irritating to eyes, respiratory system and skin

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Benzoic acid	65-85-0	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects Not mutagenic in AMES Test

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known
STOT - repeated exposure Lungs

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available
Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity

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Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Benzoic acid	5 mg/L EC50 = 3 h	180 mg/L LC50 96 h	EC50 = 16.85 mg/L 30 min EC50 = 16.9 mg/L 15 min	300 mg/L EC50 = 24 h 860 mg/L EC50 = 48 h

Persistence and Degradability Soluble in water Persistence is unlikely based on information available.
Bioaccumulation/ Accumulation No information available.

Mobility Is not likely mobile in the environment due its low water solubility. Will likely be mobile in the environment due to its water solubility.

Component	log Pow
Benzoic acid	1.93

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT Not regulated
TDG Not regulated
IATA Not regulated
IMDG/IMO Not regulated

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Benzoic acid	X	X	-	200-618-2	-		X	X	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313 Not applicable

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Benzoic acid	X	5000 lb	-	-

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Benzoic acid	5000 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Benzoic acid	X	X	X	-	-

U.S. Department of Transportation

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

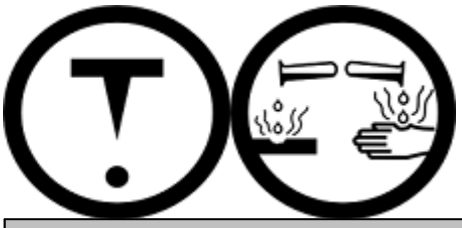
U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class E Corrosive material
D2A Very toxic materials



16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 01-May-2012
Revision Date 23-Jan-2015
Print Date 23-Jan-2015
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS

SAFETY DATA SHEET

Version 5.4
Revision Date 01/02/2015
Print Date 02/18/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Benzyl butyl phthalate

Product Number : 308501
Brand : Aldrich
Index-No. : 607-430-00-3

CAS-No. : 85-68-7

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Reproductive toxicity (Category 1B), H360
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H360 May damage fertility or the unborn child.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P273 Avoid release to the environment.
P281 Use personal protective equipment as required.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P391 Collect spillage.
P405 Store locked up.

P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	$C_{19}H_{20}O_4$
Molecular weight	:	312.36 g/mol
CAS-No.	:	85-68-7
EC-No.	:	201-622-7
Index-No.	:	607-430-00-3

Hazardous components

Component	Classification	Concentration
Benzyl butyl phthalate Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)		
	Repr. 1B; Aquatic Acute 1; Aquatic Chronic 1; H360, H410	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
For personal protection see section 8.

6.2 Environmental precautions

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

6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 480 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

Splash contact
Material: Nature latex/chloroprene
Minimum layer thickness: 0.6 mm
Break through time: 60 min

Material tested:Lapren® (KCL 706 / Aldrich Z677558, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid Colour: colourless
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/freezing point: < -34.99 °C (< -30.98 °F)
f)	Initial boiling point and boiling range	370 °C (698 °F)
g)	Flash point	113.0 °C (235.4 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	19.2 hPa (14.4 mmHg) at 250.0 °C (482.0 °F) 0.3 hPa (0.2 mmHg) at 150.0 °C (302.0 °F)
l)	Vapour density	No data available
m)	Relative density	1.1 g/cm3 at 25 °C (77 °F)
n)	Water solubility	0.00269 g/l at 25 °C (77 °F) - OECD Test Guideline 105 - slightly soluble
o)	Partition coefficient: n-octanol/water	log Pow: 4.91 at 20 °C (68 °F)
p)	Auto-ignition temperature	232.0 °C (449.6 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available

t) Oxidizing properties No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing agents, Strong bases

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - male and female - 2,330 mg/kg
(OECD Test Guideline 401)

Inhalation: No data available

LD50 Dermal - Rabbit - > 10,000 mg/kg

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
- Guinea pig
Result: Does not cause skin sensitisation.

Germ cell mutagenicity
Ames test
S. typhimurium
Result: negative

Carcinogenicity

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

IARC:	3 - Group 3: Not classifiable as to its carcinogenicity to humans (Benzyl butyl phthalate)
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a

carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
Presumed human reproductive toxicant

Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information

Repeated dose toxicity - Rat - male - Oral - No observed adverse effect level - 550 mg/kg
RTECS: TH9990000

May cause endocrine disruption.

pancreas -

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Lepomis macrochirus (Bluegill) - 1.7 mg/l - 96.0 h
	NOEC - Oncorhynchus mykiss (rainbow trout) - 0.48 mg/l - 96.0 h
	flow-through test LC50 - Pimephales promelas (fathead minnow) - 2.1 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	static test LC50 - Daphnia magna (Water flea) - 1.8 mg/l - 48 h
Toxicity to algae	Growth inhibition EC50 - Desmodesmus subspicatus (green algae) - 0.31 mg/l - 72 h (OECD Test Guideline 201)

12.2 Persistence and degradability

Biodegradability	aerobic - Exposure time 14 d Result: 81 % - Readily biodegradable

12.3 Bioaccumulative potential

Bioaccumulation	Lepomis macrochirus (Bluegill) - 21 d - 0.00973 mg/l
	Bioconcentration factor (BCF): 663

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

Avoid release to the environment.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3082 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (Benzyl butyl phthalate)
Reportable Quantity (RQ): 100 lbs
Marine pollutant:yes
Poison Inhalation Hazard: No

IMDG
UN number: 3082 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Benzyl butyl phthalate)
Marine pollutant:yes

IATA
UN number: 3082 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (Benzyl butyl phthalate)

15. REGULATORY INFORMATION

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

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

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Benzyl butyl phthalate	85-68-7	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Benzyl butyl phthalate	85-68-7	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Benzyl butyl phthalate	85-68-7	1993-04-24

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. Benzyl butyl phthalate	85-68-7	2007-09-28

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
H360	May damage fertility or the unborn child.

H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
Repr.	Reproductive toxicity

HMIS Rating

Health hazard:	0
Chronic Health Hazard:	*
Flammability:	1
Physical Hazard	0

NFPA Rating

Health hazard:	1
Fire Hazard:	1
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.4 Revision Date: 01/02/2015 Print Date: 02/18/2016

SAFETY DATA SHEET

Version 4.6
Revision Date 12/29/2015
Print Date 01/29/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Beryllium

Product Number : 378135
Brand : Aldrich

CAS-No. : 7440-41-7

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 3), H301
Acute toxicity, Inhalation (Category 2), H330
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Skin sensitisation (Category 1), H317
Carcinogenicity (Category 1B), H350
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Specific target organ toxicity - repeated exposure (Category 1), H372

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H301 Toxic if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H330 Fatal if inhaled.
H335 May cause respiratory irritation.
H350 May cause cancer.

H372	Causes damage to organs through prolonged or repeated exposure.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P284	Wear respiratory protection.
P301 + P310 + P330	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Rinse mouth.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	Be
Molecular weight	:	9.01 g/mol
CAS-No.	:	7440-41-7
EC-No.	:	231-150-7

Hazardous components

Component	Classification	Concentration
Berylium foil		
	Acute Tox. 3; Acute Tox. 2; Skin Irrit. 2; Eye Irrit. 2A; Skin Sens. 1; Carc. 1B; STOT SE 3; STOT RE 1; H301, H315, H317, H319, H330, H335, H350, H372	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

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

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Beryllium oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

Keep in a dry place.
Storage class (TRGS 510): Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Berylium foil	7440-41-7	TWA	2.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		CEIL	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Peak	25.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		TWA	2.000000microg ram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
	Remarks	Z27.29-1970		
		CEIL	5.000000microg ram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		Peak	25.000000micro gram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		TWA	0.000050 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Beryllium sensitization Chronic beryllium disease (berylliosis) Confirmed human carcinogen Danger of cutaneous absorption Sensitizer		
		C	0.000500 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		
		See Table Z-2		
		TWA	2.000000microg ram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		TWA	2.000000microg ram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		CEIL	5.000000microg ram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		CEIL	5.000000microg ram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		Peak	25.000000micro gram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		Peak	25.000000micro gram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		TWA	0.000050 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Beryllium sensitization		

		Chronic beryllium disease (berylliosis) Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC) Confirmed human carcinogen Danger of cutaneous absorption Sensitizer		
		C	0.000500 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		
		See Table Z-2		
		TWA	2microgram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		CEIL	5microgram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		Peak	25microgram per cubic meter	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z27.29-1970		
		C	0.0005 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		

8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: powder Colour: grey
b)	Odour	odourless
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 1,278 °C (2,332 °F) - lit.
f)	Initial boiling point and boiling range	2,970 °C (5,378 °F) - lit.
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	1.85 g/cm3 at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Alkali metals

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

LD50 Intravenous - Rat - 0.496 mg/kg
Remarks: Liver:Hepatitis (hepatocellular necrosis), zonal.

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
Hamster
Lungs
Result: negative

Carcinogenicity

Carcinogenicity - Rat - Intratracheal
Tumorigenic:Neoplastic by RTECS criteria. Lungs, Thorax, or Respiration:Tumors. Lungs, Thorax, or Respiration:Bronchiogenic carcinoma.

Carcinogenicity - Rabbit - Intravenous
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Musculoskeletal:Tumors.

Possible human carcinogen

IARC:	1 - Group 1: Carcinogenic to humans (Berylium foil)
NTP:	Known to be human carcinogen (Berylium foil)
	Known to be human carcinogenThe reference note has been added by TD based on the background information of the NTP. (Berylium foil)
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: DS1750000

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1567 Class: 6.1 (4.1) Packing group: II
Proper shipping name: Beryllium, powder
Reportable Quantity (RQ): 10 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1567 Class: 6.1 (4.1) Packing group: II EMS-No: F-G, S-G
Proper shipping name: BERYLLIUM POWDER

IATA
UN number: 1567 Class: 6.1 (4.1) Packing group: II
Proper shipping name: Beryllium powder

15. REGULATORY INFORMATION

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

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Berylium foil	7440-41-7	1993-04-24

SARA 311/312 Hazards

Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Berylium foil	7440-41-7	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Berylium foil	7440-41-7	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Berylium foil	7440-41-7	1993-04-24

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Berylium foil	7440-41-7	2008-10-10

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Carc.	Carcinogenicity
Eye Irrit.	Eye irritation
H301	Toxic if swallowed.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H350	May cause cancer.
H372	Causes damage to organs through prolonged or repeated exposure.
Skin Irrit.	Skin irritation
Skin Sens.	Skin sensitisation

HMIS Rating

Health hazard:	4
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	4
Fire Hazard:	3
Reactivity Hazard:	3

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

SAFETY DATA SHEET

Version 5.11
Revision Date 06/18/2015
Print Date 02/11/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Bis(2-ethylhexyl) phthalate

Product Number : 80030
Brand : Sigma-Aldrich
Index-No. : 607-317-00-9

CAS-No. : 117-81-7

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Reproductive toxicity (Category 1B), H360

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H360 May damage fertility or the unborn child.

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P281 Use personal protective equipment as required.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Endocrine disrupting chemical(s)

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	:	'Dioctyl' phthalate Phthalic acid bis(2-ethylhexyl ester) DEHP
Formula	:	$C_{24}H_{38}O_4$
Molecular weight	:	390.56 g/mol
CAS-No.	:	117-81-7
EC-No.	:	204-211-0
Index-No.	:	607-317-00-9
Registration number	:	01-2119484611-38-XXXX

Hazardous components

Component	Classification	Concentration
bis(2-Ethylhexyl) phthalate Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)		
	Repr. 1B; H360	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

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

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

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

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
bis(2-Ethylhexyl) phthalate	117-81-7	TWA	5.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Lower Respiratory Tract irritation Confirmed animal carcinogen with unknown relevance to humans		
		TWA	5.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		
		ST	10.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants

8.2 Exposure controls

Appropriate engineering controls

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

Personal protective equipment

Eye/face protection

Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.2 mm
Break through time: 480 min
Material tested:Dermatril® P (KCL 743 / Aldrich Z677388, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 230 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	-50.0 °C (-58.0 °F)
f)	Initial boiling point and boiling range	386 °C (727 °F) - lit.
g)	Flash point	207.0 °C (404.6 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Lower explosion limit: 0.3 %(V)
k)	Vapour pressure	1.6 hPa (1.2 mmHg) at 93.0 °C (199.4 °F)
l)	Vapour density	No data available
m)	Relative density	0.985 g/cm3 at 20 °C (68 °F)
n)	Water solubility	insoluble

o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	390.0 °C (734.0 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 30,000 mg/kg

Inhalation: No data available

LD50 Dermal - Rabbit - 25,000 mg/kg

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Mild skin irritation - 24 h

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Mild eye irritation - 24 h

Respiratory or skin sensitisation
Maximisation Test (GPMT) - Guinea pig
Result: Does not cause skin sensitisation.
(OECD Test Guideline 406)

Germ cell mutagenicity
No data available

Carcinogenicity

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

IARC: 2B - Group 2B: Possibly carcinogenic to humans (bis(2-Ethylhexyl) phthalate)

NTP: Reasonably anticipated to be a human carcinogen (bis(2-Ethylhexyl) phthalate)

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
May cause congenital malformation in the fetus.
Presumed human reproductive toxicant

May cause reproductive disorders.

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: TI0350000

Effects due to ingestion may include:, Gastrointestinal disturbance

Kidney -

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - > 0.67 mg/l - 96 h
	LC50 - Oncorhynchus mykiss (rainbow trout) - > 0.32 mg/l - 96 h
	LC50 - Cyprinodon variegatus (sheepshead minnow) - > 0.17 mg/l - 96 h
	LC50 - Lepomis macrochirus (Bluegill) - > 0.20 mg/l - 96 h
	NOEC - other fish - > 0.3 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	Immobilization EC50 - Daphnia magna (Water flea) - > 0.16 mg/l - 48 h

12.2 Persistence and degradability

Biodegradability	Result: - Readily biodegradable (OECD Test Guideline 301)

12.3 Bioaccumulative potential

Bioaccumulation	Oncorhynchus mykiss (rainbow trout) - 100 d - 0.014 mg/l Bioconcentration factor (BCF): 113 Remarks: Does not bioaccumulate.

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3082 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (bis(2-Ethylhexyl) phthalate)
Reportable Quantity (RQ): 100 lbs

Poison Inhalation Hazard: No

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

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

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
bis(2-Ethylhexyl) phthalate	117-81-7	2007-07-01

SARA 311/312 Hazards
Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
bis(2-Ethylhexyl) phthalate	117-81-7	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
bis(2-Ethylhexyl) phthalate	117-81-7	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
bis(2-Ethylhexyl) phthalate	117-81-7	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer. bis(2-Ethylhexyl) phthalate	CAS-No. 117-81-7	Revision Date 2009-02-01
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. bis(2-Ethylhexyl) phthalate	CAS-No. 117-81-7	Revision Date 2009-02-01

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

H360	May damage fertility or the unborn child.
Repr.	Reproductive toxicity

HMIS Rating

Health hazard:	0
Chronic Health Hazard:	*
Flammability:	1
Physical Hazard	0

NFPA Rating

Health hazard:	0
Fire Hazard:	1
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.11 Revision Date: 06/18/2015 Print Date: 02/11/2016

APG

Analytical Products Group, Inc.

2730 Washington Blvd., Belpre, OH 45714
740-423-4200 800-272-4442 Fax 740-423-5588

Material Safety Data Sheet

Date prepared on: 9/18/95

Last revised on: 1/20/08

Page 1

Section I: Product Identification

CATALOG NUMBER: 2600,4230,4232,4233	PRODUCT NAME: BTEX

Section II - Hazardous Ingredients/Identity Information

Chemical Name	CAS Reg. No.	OSHA PEL (TWA)	% Composition*
Methanol	67-56-1	200ppm	>90%
A table of the compounds possible in this purgeable aromatic analytical standard is attached. Data included in the table are formulas, CAS numbers, oral ld50 values for rats and PEL/TWA values if available. Total concentration of purgeable aromatic compounds in the standard is less than 2% with individual compound concentrations of less than 0.1%.			

Non-Hazardous Ingredients/Identity Information

Chemical Name	CAS Reg. No.	OSHA PEL (TWA)	% Composition*

* Components are calculated on a weight/weight basis.

Section III - Physical/Chemical Characteristics of Hazardous Ingredients

BOILING POINT: 65 C (149 F)	SPECIFIC GRAVITY: (water=1) 0.79	
VAPOR PRESSURE: 97 mmHg @ 20 C	SOLUBILITY IN WATER: Complete	APPEARANCE/ODOR: Clear, colorless liquid with pungent odor (methanol).

Section IV - Fire and Explosion Hazard Data

FLASH POINT (Method used): 12 C (54 F) Closed cup	AUTO IGNITION TEMPERATURE: 463 C (867 F)	FLAMMABLE LIMITS	LEL 6%	UEL 36%
EXTINGUISHING MEDIA: Use extinguisher media appropriate for surrounding fire since sample size is small. Alcohol foam, dry chemical or carbon dioxide (water may be ineffective in most laboratory situations.)				
SPECIAL FIRE FIGHTING PROCEDURES: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Move containers from fire area if it can be done without risk. Use water to keep fire exposed containers cool.				
UNUSUAL FIRE AND EXPLOSION HAZARDS: Vapors may flow along surfaces to distant ignition sources and flash back. Closed containers exposed to heat may explode. Contact with strong oxidizers may cause fire. Burns with a clear, almost invisible flame.				

Section V - Reactivity Data

STABILITY:	Unstable ☐	Stable ☒	Conditions to Avoid: Heat , flame and other sources of ignition.
INCOMPATIBILITY (Materials to avoid): String oxidizing agents, strong acids, zinc, aluminum and magnesium.			
HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide, carbon dioxide and formaldehyde.			
HAZARDOUS POLYMERIZATION:	May Occur ☐	Will Not Occur ☒	Conditions to Avoid: N/A

Section VI - Health Hazard Data

ROUTES OF ENTRY	Inhalation? YES	Skin? YES	Ingestion? YES
HEALTH HAZARDS (Acute and Chronic): ACUTE: Yes, see chronic symptoms. CHRONIC: Yes, methanol ingestion may be fatal or cause blindness, headache, nausea, vomiting, dizziness, gastrointestinal irritation, central nervous system depression or hearing loss.			
COMPONENTS LISTED AS CARCINOGENS OR POTENTIAL CARCINOGENS: No, not listed in IARC monograph.			
SIGNS AND SYMPTOMS OF EXPOSURE: Irritation of skin, eyes, nose, throat and headache. Prolonged contact may cause dermatitis. Exposure effects may differ between individuals			
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Eye disorders, skin disorders, liver and kidney disorders			
EMERGENCY AND FIRST AID PROCEDURES: Seek medical assistance for treatment, observation and support if necessary. EYE CONTACT: Flush with water, obtain medical attention. SKIN CONTACT: Wash with soap and water, use protective creams. INHALATION: Remove to fresh air, if not breathing give artificial respiration. If breathing is difficult, give oxygen and obtain medical attention. INGESTION: If conscious, give water and baking soda and induce vomiting. Obtain medical assistance immediately.			

Section VII - Precautions for Safe Handling and Use

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: (Sample) shut off ignition sources. No flares, smoking or flames in area. Take up with sand or other non-combustible absorbent material and place into container for later disposal. Flush area with water.
WASTE DISPOSAL METHOD: Dispose in accordance with all applicable federal, state and local environmental regulations. Excess sample should be placed in a proper waste solvent container.
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Keep container tightly closed, store in a cool, dry, well ventilated, flammable liquid storage area.
OTHER PRECAUTIONS* Do not heat or evaporate sample to dryness.

Section VIII - Control Measures

RESPIRATORY PROTECTION (Please specify): Required if airborne concentration exceeds TWA of 200 ppm.	
VENTILATION: Local exhaust. (general or local exhausts meet TLV regulations).	
PROTECTIVE GLOVES: Rubber gloves recommended.	EYE PROTECTION: Safety glasses or goggles.
OTHER PROTECTIVE EQUIPMENT: N/A	
EMERGENCY WASH FACILITIES: Maintain eye wash and quick drench showers in work area	

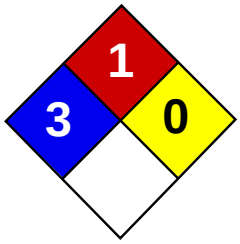
The information stated in this Material Safety Data Sheet (MSDS) is believed to be correct on the date of publication and must not be considered all conclusive. The information has been obtained only by a search of available literature and is only a guide for handling the chemicals. Persons not specifically and properly trained should not handle this chemical or its container. This MSDS is provided without any warranty expressed or implied, including merchantability or fitness for any particular purpose.

This product is furnished for laboratory use ONLY! Our standards may not be used as drugs, cosmetics, agricultural or pesticidal products, food additives or as house hold chemicals.

* Various Government agencies (i.e., Department of Transportation, Occupational Safety and Health Administration, Environmental Protection Agency, and others) may have specific regulations concerning the transportation, handling, storage or use of this product which may not be contained herein. The customer or user of this product should be familiar with these regulations.

Hazardous components of the Volatiles Standard

CHEMICAL	***CAS #***	***% by WEIGHT***	***LD50***
Ethylbenzene	100-41-4	<0.2%	3500 mg/kg
Benzene	71-43-2	<0.2%	4894 mg/kg
Toluene	108-88-3	<0.2%	7000 mg/kg
m-Xylene	108-38-3	<0.2%	5 gm/kg
p-Xylene	106-42-3	<0.2%	5 gm/kg
o-Xylene	95-47-6	<0.2%	1364 mg/kg



Health	3
Fire	1
Reactivity	0
Personal Protection	E

Material Safety Data Sheet
Cadmium MSDS

Section 1: Chemical Product and Company Identification

Product Name: Cadmium

Catalog Codes: SLC3484, SLC5272, SLC2482

CAS#: 7440-43-9

RTECS: EU9800000

TSCA: TSCA 8(b) inventory: Cadmium

CI#: Not applicable.

Synonym:

Chemical Name: Cadmium

Chemical Formula: Cd

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Cadmium	7440-43-9	100

Toxicological Data on Ingredients: Cadmium: ORAL (LD50): Acute: 2330 mg/kg [Rat.]. 890 mg/kg [Mouse]. DUST (LC50): Acute: 50 ppm 4 hour(s) [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of ingestion, of inhalation. Slightly hazardous in case of skin contact (irritant, sensitizer), of eye contact (irritant). Severe over-exposure can result in death.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Classified A2 (Suspected for human.) by ACGIH, 2 (Reasonably anticipated.) by NTP. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance is toxic to kidneys, lungs, liver. Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Eye Contact: No known effect on eye contact, rinse with water for a few minutes.

Skin Contact:
After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

Serious Skin Contact: Not available.

Inhalation: Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:
Do not induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: 570°C (1058°F)

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: Some metallic oxides.

Fire Hazards in Presence of Various Substances:
Non-flammable in presence of open flames and sparks, of heat, of oxidizing materials, of reducing materials, of combustible materials, of moisture.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards:
Material in powder form, capable of creating a dust explosion. When heated to decomposition it emits toxic fumes.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing In case of insufficient ventilation, wear suitable respiratory equipment If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents.

Storage:
Keep container dry. Keep in a cool place. Ground all equipment containing material. Keep container tightly closed. Keep in a cool, well-ventilated place. Highly toxic or infectious materials should be stored in a separate locked safety storage cabinet or room.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 0.01 (ppm) Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Lustrous solid.)

Odor: Not available.

Taste: Not available.

Molecular Weight: 112.4 g/mole

Color: Silvery.

pH (1% soln/water): Not applicable.

Boiling Point: 765°C (1409°F)

Melting Point: 320.9°C (609.6°F)

Critical Temperature: Not available.

Specific Gravity: 8.64 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Insoluble in cold water, hot water, methanol, diethyl ether, n-octanol.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Reactive with oxidizing agents.

Corrosivity: Not considered to be corrosive for metals and glass.

Special Remarks on Reactivity: Reacts violently with potassium.

Special Remarks on Corrosivity: Not available.

Polymerization: No.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals:
WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 890 mg/kg [Mouse]. Acute toxicity of the dust (LC50): 229.9 mg/m3 4 hour(s) [Rat].

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: Classified A2 (Suspected for human.) by ACGIH, 2 (Reasonably anticipated.) by NTP. The substance is toxic to kidneys, lungs, liver.

Other Toxic Effects on Humans:
Hazardous in case of ingestion, of inhalation. Slightly hazardous in case of skin contact (irritant, sensitizer).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: An allergen. 0047 Animal: embryotoxic, passes through the placental barrier.

Special Remarks on other Toxic Effects on Humans: May cause allergic reactions, exzema and/or dehydration of the skin.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are as toxic as the original product.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification:

Identification:

Special Provisions for Transport:

Section 15: Other Regulatory Information

Federal and State Regulations:
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Cadmium California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Cadmium Pennsylvania RTK: Cadmium Massachusetts RTK: Cadmium TSCA 8(b) inventory: Cadmium SARA 313 toxic chemical notification and release reporting: Cadmium CERCLA: Hazardous substances.: Cadmium

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

Other Classifications:

WHMIS (Canada):
CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC):
R26- Very toxic by inhalation. R45- May cause cancer.

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 1

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 3

Flammability: 1

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Safety glasses.

Section 16: Other Information

References:
-Hawley, G.G.. The Condensed Chemical Dictionary, 11e ed., New York N.Y., Van Nostrand Reinold, 1987. -Liste des produits purs tératogènes, mutagènes, cancérogènes. Répertoire toxicologique de la Commission de la Santé et de la Sécurité du Travail du Québec. -Material safety data sheet emitted by: la Commission de la Santé et de la Sécurité du Travail du Québec. -SAX, N.I. Dangerous Properties of Indutrial Materials. Toronto, Van Nostrand Reinold, 6e ed. 1984. -The Sigma-Aldrich Library of Chemical Safety Data, Edition II. -Guide de la loi et du règlement sur le transport des marchandises dangeureuses au canada. Centre de conformité internatinal Ltée. 1986.

Other Special Considerations: Not available.

Created: 10/09/2005 04:29 PM

Last Updated: 11/01/2010 12:00 PM

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Material Safety Data Sheet

Calcium

MSDS# 03840

Section 1 - Chemical Product and Company Identification

MSDS Name:	Calcium
Catalog Numbers:	AC201180000, AC201180050, AC201181000, AC201185000, AC201380000, AC201381000 AC201381000, AC201385000, AC318100000, AC318100050, AC365740000, AC365741000 AC365741000, AC365745000
Synonyms:	Calcium metal, turnings, crystals, granular; Calcicat.
Company Identification:	Fisher Scientific One Reagent Lane Fair Lawn, NJ 07410
For information in the US, call:	201-796-7100
Emergency Number US:	201-796-7100
CHEMTREC Phone Number, US:	800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#:	7440-70-2
Chemical Name:	Calcium
%:	99+
EINECS#:	231-179-5

Hazard Symbols: F

Risk Phrases: 15

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Danger! Flammable solid. Causes burns by all exposure routes. Contact with water liberates extremely flammable gases.
Target Organs: Respiratory system, gastrointestinal system, eyes, skin.

Potential Health Effects

Eye:	Causes eye burns.
Skin:	Causes skin burns. May be harmful if absorbed through the skin.
Ingestion:	Causes gastrointestinal tract burns. May be harmful if swallowed.
Inhalation:	Causes chemical burns to the respiratory tract. May be harmful if inhaled.
Chronic:	No information found.

Section 4 - First Aid Measures

Eyes:	Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.
Skin:	Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Ingestion:	Do not induce vomiting. Get medical aid immediately. Call a poison control center.
	Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance;

Inhalation: induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Notes to Physician:

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Will burn if involved in a fire. Water reactive. Material will react with water and may release a flammable and/or toxic gas. Flammable solid.

Extinguishing Media: Use foam, dry chemical, or carbon dioxide. DO NOT USE WATER!

Autoignition Temperature: Not applicable.

Flash Point: Not applicable.

Explosion Limits: Lower: Not available

Explosion Limits: Upper: Not available

NFPA Rating: ; Special Hazard: -W-

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Wear a self contained breathing apparatus and appropriate personal protection. (See Exposure Controls, Personal Protection section). Avoid generating dusty conditions. Remove all sources of ignition. Use a spark-proof tool. Do not expose spill to water. Place under an inert atmosphere. Do not get water inside containers. Do not let this chemical enter the environment.

Section 7 - Handling and Storage

Handling: Do not allow water to get into the container because of violent reaction. Minimize dust generation and accumulation. Use spark-proof tools and explosion proof equipment. Do not get in eyes, on skin, or on clothing. Keep away from heat, sparks and flame. Do not ingest or inhale. Handle under an inert atmosphere. Do not allow contact with water. Use only in a chemical fume hood.

Storage: Keep away from sources of ignition. Store in a cool, dry place. Store in a tightly closed container. Water free area. Store protected from moisture. Store under an inert atmosphere.

Section 8 - Exposure Controls, Personal Protection

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Calcium	none listed	none listed	none listed

OSHA Vacated PELs: Calcium: None listed

Engineering Controls:

Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use only under a chemical fume hood.

Exposure Limits

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Section 9 - Physical and Chemical Properties

Physical State:	Solid
Color:	grey
Odor:	none reported
pH:	14 (4g/L aq.sol.)
Vapor Pressure:	13 mbar @ 983 deg C
Vapor Density:	Not available
Evaporation Rate:	Not available
Viscosity:	Not available
Boiling Point:	1484 deg C @ 760 mmHg (2,703.20°F)
Freezing/Melting Point:	845 deg C (1,553.00°F)
Decomposition Temperature:	Not available
Solubility in water:	Reacts
Specific Gravity/Density:	Not available.
Molecular Formula:	Ca
Molecular Weight:	40.07

Section 10 - Stability and Reactivity

Chemical Stability:	Reacts with water. Water contact produces hydrogen gas.
Conditions to Avoid:	Incompatible materials, ignition sources, dust generation, excess heat, exposure to moist air or water.
Incompatibilities with Other Materials	Strong oxidizing agents, acids, alcohols, ammonia, halogens, sulfur, oxygen, phosphorus oxide, mercury, alkali hydroxides, metal oxides, alkali halides, nitrogen oxide.
Hazardous Decomposition Products	Hydrogen gas.
Hazardous Polymerization	Has not been reported.

Section 11 - Toxicological Information

RTECS#:	CAS# 7440-70-2: EV8500000
LD50/LC50:	RTECS: Not available.
Carcinogenicity:	Calcium - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Other:	See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Other: Do not empty into drains.

Section 13 - Disposal Considerations

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

Section 14 - Transport Information

US DOT
Shipping Name: CALCIUM
Hazard Class: 4.3
UN Number: UN1401
Packing Group: II
Canada TDG
Shipping Name: CALCIUM
Hazard Class: 4.3
UN Number: UN1401
Packing Group: II

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: F

Risk Phrases:

R 15 Contact with water liberates extremely flammable gases.

Safety Phrases:

S 8 Keep container dry.

S 24/25 Avoid contact with skin and eyes.

S 43C In case of fire, use limestone powder, sodium chloride or dry sand (never use water).

WGK (Water Danger/Protection)

CAS# 7440-70-2: 1

Canada

CAS# 7440-70-2 is listed on Canada's DSL List

Canadian WHMIS Classifications: E, B6

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

CAS# 7440-70-2 is not listed on Canada's Ingredient Disclosure List.

US Federal

TSCA

CAS# 7440-70-2 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date: 5/19/1999

Revision #7 Date 7/20/2009

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

SAFETY DATA SHEET

Version 3.8
Revision Date 10/12/2015
Print Date 01/29/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Carbazole

Product Number : C5132
Brand : Sigma

CAS-No. : 86-74-8

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Carcinogenicity (Category 2), H351
Chronic aquatic toxicity (Category 4), H413

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H351 Suspected of causing cancer.
H413 May cause long lasting harmful effects to aquatic life.

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P273 Avoid release to the environment.
P281 Use personal protective equipment as required.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	$C_{12}H_9N$
Molecular weight	:	167.21 g/mol
CAS-No.	:	86-74-8
EC-No.	:	201-696-0

Hazardous components

Component	Classification	Concentration
Carbazole		
	Carc. 2; Aquatic Chronic 4; H351, H413	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Nitrogen oxides (NOx)

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

Keep in a dry place.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: powder Colour: beige
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 243 - 246 °C (469 - 475 °F)
f)	Initial boiling point and boiling range	355 °C (671 °F)
g)	Flash point	220.0 °C (428.0 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	The product is not flammable.
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	533 hPa (400 mmHg) at 323 °C (613 °F)
l)	Vapour density	No data available
m)	Relative density	1.1 g/cm3 at 18 °C (64 °F)
n)	Water solubility	0.00091 g/l at 25 °C (77 °F)
o)	Partition coefficient: n-octanol/water	log Pow: 3.72 at 22 °C (72 °F)
p)	Auto-ignition temperature	> 600 °C (> 1,112 °F) at 1,013 hPa (760 mmHg)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD0 Oral - Rat - > 16,000 mg/kg
(OECD Test Guideline 401)

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: No eye irritation

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

Carcinogenicity - Mouse - male and female - Oral
hepatocellular carcinoma

Limited evidence of carcinogenicity in animal studies

IARC:	2B - Group 2B: Possibly carcinogenic to humans (Carbazole)
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: FE3150000

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

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - > 0.93 mg/l - 96.0 h Remarks: No toxicity at the limit of solubility
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 2.30 - 4.90 mg/l - 48 h Remarks: No toxicity at the limit of solubility
Toxicity to algae	Growth inhibition NOEC - Scenedesmus acuminatus - > 0.4 mg/l - 96 h Remarks: No toxicity at the limit of solubility

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential

Bioaccumulation	Cyprinus carpio (Carp) - 42 d - 0.05 mg/l Bioconcentration factor (BCF): 241 Cyprinus carpio (Carp) - 42 d - 0.005 mg/l Bioconcentration factor (BCF): 200

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
Not dangerous goods

IMDG
UN number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Carbazole)
Marine pollutant:yes
IATA
UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Carbazole)

Further information
EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

15. REGULATORY INFORMATION

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

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

SARA 311/312 Hazards
Chronic Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Carbazole	86-74-8	2009-07-17

New Jersey Right To Know Components

	CAS-No.	Revision Date
Carbazole	86-74-8	2009-07-17

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Carbazole	86-74-8	2007-09-28

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
H351	Suspected of causing cancer.
H413	May cause long lasting harmful effects to aquatic life.

HMIS Rating

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

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0
Health hazard:	2
Fire Hazard:	1
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 3.8 Revision Date: 10/12/2015 Print Date: 01/29/2016

SAFETY DATA SHEET

Version 5.6
Revision Date 12/10/2015
Print Date 02/09/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Carbon disulfide

Product Number : 180173
Brand : Sigma-Aldrich
Index-No. : 006-003-00-3

CAS-No. : 75-15-0

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2), H225
Acute toxicity, Inhalation (Category 4), H332
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Reproductive toxicity (Category 2), H361
Specific target organ toxicity - repeated exposure, Inhalation (Category 1), H372
Acute aquatic toxicity (Category 2), H401

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H225	Highly flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure if inhaled.

H401	Toxic to aquatic life.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	CS_2
Molecular weight	:	76.14 g/mol
CAS-No.	:	75-15-0
EC-No.	:	200-843-6
Index-No.	:	006-003-00-3

Hazardous components

Component	Classification	Concentration
Carbon disulphide		
	Flam. Liq. 2; Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2A; Repr. 2; STOT RE 1; Aquatic Acute 2; H225, H315, H319, H332, H361, H372, H401	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

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

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Sulphur oxides
Flash back possible over considerable distance., Container explosion may occur under fire conditions., Vapours may form explosive mixture with air., May explode when heated.

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Use explosion-proof equipment.Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

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

Refrigerate before opening.
Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Carbon disulphide	75-15-0	TWA	1 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Peripheral Nervous System impairment Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen Danger of cutaneous absorption		
		TWA	1.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Peripheral Nervous System impairment Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen Danger of cutaneous absorption		
		TWA	20.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.3-1968		
		CEIL	30.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.3-1968		
		Peak	100.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.3-1968		
		TWA	1.000000 ppm 3.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential for dermal absorption		
		ST	10.000000 ppm 30.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential for dermal absorption		
		See Table Z-2		
		TWA	20 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.3-1968		
		CEIL	30 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.3-1968		

		Peak	100 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.3-1968		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Carbon disulphide	75-15-0	2-Thiothiazolidine-4-carboxylix acid (TTCA)	0.5000 mg/g	Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid Colour: colourless
b)	Odour	Stench.
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -112 °C (-170 °F) - lit.
f)	Initial boiling point and boiling range	46 °C (115 °F) - lit.
g)	Flash point	-30 °C (-22 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 50 %(V) Lower explosion limit: 1.3 %(V)
k)	Vapour pressure	394.956 hPa (296.241 mmHg) at 20 °C (68 °F) 1,342.711 hPa (1,007.116 mmHg) at 55 °C (131 °F)
l)	Vapour density	2.63 - (Air = 1.0)
m)	Relative density	1.266 g/mL at 25 °C (77 °F)
n)	Water solubility	2.9 g/l at 20 °C (68 °F) - OECD Test Guideline 105
o)	Partition coefficient: n-octanol/water	log Pow: 2.7 at 25 °C (77 °F)
p)	Auto-ignition temperature	97 - 107 °C (207 - 225 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

Surface tension	71.9 mN/m at 19.5 °C (67.1 °F)
Relative vapour density	2.63 - (Air = 1.0)

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Vapours may form explosive mixture with air.

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Alkali metals, Zinc, Amines, Azides, Oxidizing agents

10.6 Hazardous decomposition products

Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - female - > 2,000 mg/kg
(OECD Test Guideline 423)

LC50 Inhalation - Rat - male and female - 4 h - 10.35 mg/l
(OECD Test Guideline 403)

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
- Mouse
Result: Does not cause skin sensitisation.
(OECD Test Guideline 429)

Germ cell mutagenicity
Laboratory experiments have shown mutagenic effects.

Ames test
Salmonella typhimurium
Result: negative

Carcinogenicity

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

Reproductive toxicity
Suspected human reproductive toxicant

May cause reproductive disorders.

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: FF6650000

May cause convulsions.

Liver - Irregularities - Based on Human Evidence
Liver - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Poecilia reticulata (guppy) - 4 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	Immobilization EC50 - Daphnia magna (Water flea) - 2.1 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	Growth inhibition EC50 - Chlorella pyrenoidosa - 21 mg/l - 96 h (OECD Test Guideline 201)

12.2 Persistence and degradability

Biodegradability: aerobic - Exposure time 28 d
Result: > 80 % - Readily biodegradable
(OECD Test Guideline 301D)

12.3 Bioaccumulative potential

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life.

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1131 Class: 3 (6.1) Packing group: I
Proper shipping name: Carbon disulfide
Reportable Quantity (RQ): 100 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1131 Class: 3 (6.1) Packing group: I EMS-No: F-E, S-D
Proper shipping name: CARBON DISULPHIDE

IATA
UN number: 1131 Class: 3 (6.1)
Proper shipping name: Carbon disulphide
IATA Passenger: Not permitted for transport
IATA Cargo: Not permitted for transport

15. REGULATORY INFORMATION

SARA 302 Components

The following components are subject to reporting levels established by SARA Title III, Section 302:

	CAS-No.	Revision Date
Carbon disulphide	75-15-0	2007-07-01

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Carbon disulphide	75-15-0	2007-07-01

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Carbon disulphide	75-15-0	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Carbon disulphide	75-15-0	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Carbon disulphide	75-15-0	2007-07-01

California Prop. 65 Components

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

	CAS-No.	Revision Date
Carbon disulphide	75-15-0	2008-06-17

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure if inhaled.
H401	Toxic to aquatic life.
Repr.	Reproductive toxicity

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.6 Revision Date: 12/10/2015 Print Date: 02/09/2016

SAFETY DATA SHEET

Version 5.10
Revision Date 01/06/2016
Print Date 03/03/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Carbon tetrachloride

Product Number : 319961
Brand : Sigma-Aldrich
Index-No. : 602-008-00-5

CAS-No. : 56-23-5

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 3), H301
Acute toxicity, Inhalation (Category 3), H331
Acute toxicity, Dermal (Category 3), H311
Skin sensitisation (Sub-category 1B), H317
Carcinogenicity (Category 2), H351
Specific target organ toxicity - repeated exposure, Inhalation (Category 1), Liver, Kidney, H372
Acute aquatic toxicity (Category 3), H402
Chronic aquatic toxicity (Category 3), H412
Hazardous to the ozone layer (Category 1), H420

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H301 + H311 + H331	Toxic if swallowed, in contact with skin or if inhaled
H317	May cause an allergic skin reaction.
H351	Suspected of causing cancer.
H372	Causes damage to organs (Liver, Kidney) through prolonged or repeated exposure if inhaled.

H412	Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P310 + P330	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician. Rinse mouth.
P302 + P352 + P312	IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell.
P304 + P340 + P311	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P333 + P313	If skin irritation or rash occurs: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.
P502	Refer to manufacturer/ supplier for information on recovery/ recycling.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Rapidly absorbed through skin.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	:	Tetrachloromethane
Formula	:	CCl_4CCl_4
Molecular weight	:	153.82 g/mol
CAS-No.	:	56-23-5
EC-No.	:	200-262-8
Index-No.	:	602-008-00-5

Hazardous components

Component	Classification	Concentration
Tetrachloromethane		
	Acute Tox. 3; Skin Sens. 1B; Carc. 2; STOT RE 1; Aquatic Acute 3; Aquatic Chronic 3; Ozone 1; H301 + H311 + H331, H317, H351, H372, H412	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

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

If inhaled

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

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Hydrogen chloride gas

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Storage class (TRGS 510): Non-combustible, acute toxic Cat. 1 and 2 / very toxic hazardous materials

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Tetrachloromethane	56-23-5	TWA	5.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Liver damage Suspected human carcinogen Danger of cutaneous absorption		
		STEL	10.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Liver damage Suspected human carcinogen Danger of cutaneous absorption		
		ST	2.000000 ppm 12.600000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		
		TWA	10.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.17-1967		
		CEIL	25.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.17-1967		
		Peak	200.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.17-1967		
		See Table Z-2		
		TWA	5 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Liver damage Suspected human carcinogen Danger of cutaneous absorption		
		STEL	10 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Liver damage Suspected human carcinogen Danger of cutaneous absorption		
		ST	2 ppm 12.6 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential Occupational Carcinogen See Appendix A		
		See Table Z-2		
		TWA	10 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.17-1967		
		CEIL	25 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.17-1967		
		Peak	200 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.17-1967		
		TWA	2 ppm 12.6 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000

8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 240 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid Colour: colourless
b)	Odour	sweet
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -23 °C (-9 °F) - lit.
f)	Initial boiling point and boiling range	76 - 77 °C (169 - 171 °F) - lit.
g)	Flash point	does not flash
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower	No data available

	flammability or explosive limits	
k)	Vapour pressure	45 hPa (34 mmHg) at 0.3 °C (32.5 °F) 120 hPa (90 mmHg) at 19.8 °C (67.6 °F) 14,549 hPa (10,913 mmHg) at 24 °C (75 °F)
l)	Vapour density	No data available
m)	Relative density	1.594 g/cm3 at 25 °C (77 °F)
n)	Water solubility	0.8461 g/l at 20 °C (68 °F)
o)	Partition coefficient: n-octanol/water	log Pow: 2.83 at 25 °C (77 °F)
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

Surface tension	26.7 mN/m at 20 °C (68 °F) 19.5 mN/m at 80 °C (176 °F)

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 2,350 mg/kg

LC50 Inhalation - Rat - 4 h - 8000 ppm

LD50 Dermal - Rabbit - > 20,000 mg/kg

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Mild skin irritation - 24 h
(Draize Test)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Mild eye irritation - 24 h
(Draize Test)

Respiratory or skin sensitisation
- Mouse
Result: The product is a skin sensitiser, sub-category 1B.
(OECD Test Guideline 429)

Germ cell mutagenicity
No data available

Carcinogenicity

This product is or contains a component that has been reported to be probably carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification. Limited evidence of carcinogenicity in animal studies

IARC:	2B - Group 2B: Possibly carcinogenic to humans (Tetrachloromethane)
NTP:	Reasonably anticipated to be a human carcinogen (Tetrachloromethane)
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
Inhalation - Causes damage to organs through prolonged or repeated exposure. - Liver, Kidney

Aspiration hazard
No data available

Additional Information
RTECS: FG4900000

Vomiting, Diarrhoea, Abdominal pain, Nausea, Dizziness, Headache, Damage to the eyes., Liver injury may occur., Kidney injury may occur., Exposure to and/or consumption of alcohol may increase toxic effects., Contact with skin can cause:, Pain, Erythema, hyperemia

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	mortality LC50 - Danio rerio (zebra fish) - 24.3 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	Immobilization EC50 - Daphnia magna (Water flea) - 35 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	Growth inhibition EC50 - Algae - 20 mg/l - 72 h (OECD Test Guideline 201)

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential

Bioaccumulation	Lepomis macrochirus (Bluegill) - 21 d - 52.3 µg/l
	Bioconcentration factor (BCF): 30

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1846 Class: 6.1 Packing group: II
Proper shipping name: Carbon tetrachloride
Reportable Quantity (RQ): 10 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1846 Class: 6.1 Packing group: II EMS-No: F-A, S-A
Proper shipping name: CARBON TETRACHLORIDE
Marine pollutant: yes

IATA
UN number: 1846 Class: 6.1 Packing group: II
Proper shipping name: Carbon tetrachloride

15. REGULATORY INFORMATION

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

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Tetrachloromethane	56-23-5	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Tetrachloromethane	56-23-5	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Tetrachloromethane	56-23-5	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Tetrachloromethane	56-23-5	2007-07-01

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING! This product contains a chemical known to the State of California to cause cancer.	56-23-5	2007-09-28

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
H301	Toxic if swallowed.
H301 + H311 + H331	Toxic if swallowed, in contact with skin or if inhaled
H311	Toxic in contact with skin.
H317	May cause an allergic skin reaction.
H331	Toxic if inhaled.
H351	Suspected of causing cancer.

HMIS Rating

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

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

Further information

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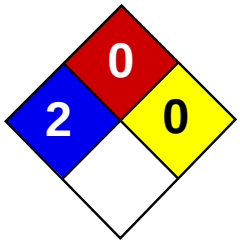
Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.10 Revision Date: 01/06/2016 Print Date: 03/03/2016



Material Safety Data Sheet
Chloroform MSDS

Section 1: Chemical Product and Company Identification

Product Name: Chloroform

Catalog Codes: SLC1888, SLC5044

CAS#: 67-66-3

RTECS: FS9100000

TSCA: TSCA 8(b) inventory: Chloroform

CI#: Not available.

Synonym: Trichloromethane; Methane, trichlor-

Chemical Name: Chloroform

Chemical Formula: CHCl3

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Chloroform	67-66-3	100

Toxicological Data on Ingredients: Chloroform: ORAL (LD50): Acute: 695 mg/kg [Rat]. 36 mg/kg [Mouse]. 820 mg/kg [Guinea pig]. DERMAL (LD50): Acute: >20000 mg/kg [Rabbit]. VAPOR (LC50): Acute: 47702 mg/m 4 hours [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects: Hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

Potential Chronic Health Effects: CARCINOGENIC EFFECTS: Classified + (Proven.) by NIOSH. Classified A3 (Proven for animal.) by ACGIH, 2B (Possible for human.) by IARC. Classified 2 (Some evidence.) by NTP. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to kidneys, liver, heart. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. WARM water MUST be used. Get medical attention.

Skin Contact: In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact: Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek medical attention.

Ingestion: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Non-flammable.

Auto-Ignition Temperature: Not applicable.

Flash Points: Not applicable.

Flammable Limits: Not applicable.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances: Not applicable.

Explosion Hazards in Presence of Various Substances: Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions: Not applicable.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: May explode if it comes in contact with aluminum powder, lithium, perchlorate, pentoxide, bis(dimethylamino)dimethylstannane, potassium, potassium-sodium alloy, sodium (or sodium hydroxide or sodium methoxide), and methanol

Section 6: Accidental Release Measures

Small Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal.

Large Spill: Absorb with an inert material and put the spilled material in an appropriate waste disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions: Do not ingest. Do not breathe gas/fumes/ vapor/spray. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as metals, alkalis.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Sensitive to light. Store in light-resistant containers.

Section 8: Exposure Controls/Personal Protection

Engineering Controls: Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value. Ensure that eyewash stations and safety showers are proximal to the work-station location.

Personal Protection: Splash goggles. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill: Splash goggles. Full suit. Vapor respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: TWA: 10 (ppm) [Australia] Inhalation TWA: 2 (ppm) from OSHA (PEL) [United States] Inhalation STEL: 9.78 (mg/m3) from NIOSH Inhalation STEL: 2 (ppm) from NIOSH Inhalation TWA: 9.78 (mg/m3) from OSHA (PEL) [United States] Inhalation TWA: 10 (ppm) from ACGIH (TLV) [United States] [1999] Inhalation TWA: 2 (ppm) [United Kingdom (UK)] Inhalation TWA: 9.9 (mg/m3) [United Kingdom (UK)] InhalationConsult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Liquid.

Odor: Pleasant. Sweetish. Etheric. Non-irritating

Taste: Burning. Sweet.

Molecular Weight: 119.38 g/mole

Color: Colorless. Clear

pH (1% soln/water): Not available.

Boiling Point: 61°C (141.8°F)

Melting Point: -63.5°C (-82.3°F)

Critical Temperature: 263.33°C (506°F)

Specific Gravity: 1.484 (Water = 1)

Vapor Pressure: 21.1 kPa (@ 20°C)

Vapor Density: 4.36 (Air = 1)

Volatility: Not available.

Odor Threshold: 85 ppm

Water/Oil Dist. Coeff.: The product is more soluble in oil; log(oil/water) = 2

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Very slightly soluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials, Light

Incompatibility with various substances: Reactive with metals, alkalis.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Light Sensitive. Incompatible with triisopropyl phosphine, acetone, disilane, fluorine, strong bases and reactive metals (aluminum, magnesium in powdered form), light.

Special Remarks on Corrosivity: It will attack some forms of plastics, rubber, and coatings.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Eye contact. Inhalation.

Toxicity to Animals: WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 36 mg/kg [Mouse]. Acute dermal toxicity (LD50): >20000 mg/kg [Rabbit]. Acute toxicity of the vapor (LC50): 47702 mg/m 4 hours [Rat]. 3

Chronic Effects on Humans: CARCINOGENIC EFFECTS: Classified + (Proven.) by NIOSH. Classified A3 (Proven for animal.) by ACGIH, 2B (Possible for human.) by IARC. Classified 2 (Some evidence.) by NTP. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. May cause damage to the following organs: kidneys, liver, heart.

Other Toxic Effects on Humans: Hazardous in case of skin contact (irritant), of ingestion, of inhalation. Slightly hazardous in case of skin contact (permeator).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: May affect genetic material (possible mutangen) and cause adverse reproductive effects(embryotoxicity and fetotoxicity) Suspected carcinogen (tumorigenic) and teratogen based on animal data. Human: passes the placental barrier, detected in maternal milk.

Special Remarks on other Toxic Effects on Humans: Acute Potential Health Effects: Skin: Causes skin irritation and may cause chemical burns. Eye: Causes eye irritation, burning pain and reversible injury to corneal epithelium. Inhalation: Causes irritation of the respiratory system (mucous membranes). May affect behavior/Nervous system (CNS depressant, fatigue, dizziness, nervousness, giddiness, euphoria, loss of coordination and judgement, weakness, hallucinations, muscle contraction/spasticity, general anesthetic, spastic paralysis, headache), anorexia (neurological and gastrointestinal symtoms resembling chronic alcoholism), and possibly coma and death. May affect the liver, kidneys and gastrointestinal tract (nausea, vomiting). Ingestion: Causes gastrointestinal tract irritation (nausea, vomiting). May affect the liver, urinary system (kidneys), respiration, behavior/nervous system (symptoms similar to inhalation),and heart. Chronic Potential Health Effects: Inhalation: Prolonged or repeated inhalation may affect the liver (hepatitis, jaundice, hepatocellular necrosis), metabolism (weight loss), respiration (fibrosis, pneumoconoisis), behavior/central nervous system (symptoms similar to acute inhalation), blood, musculoskeletal system, and kidneys. Ingestion: Prolonged or repeated ingestion may affect the liver, kidneys, metabolism (weight loss), endocrine system (spleen), blood (changes in cell count).

Section 12: Ecological Information

Ecotoxicity: Ecotoxicity in water (LC50): 43.8 mg/l 96 hours [Trout].

BOD5 and COD: Not available.

Products of Biodegradation: Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are as toxic as the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal: Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 6.1: Poisonous material.

Identification: : Chloroform UNNA: UN1888 PG: III

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations: California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Chloroform California prop. 65 (no significant risk level): Chloroform: 0.02 mg/day (value) California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Chloroform New York release reporting list: Chloroform Rhode Island RTK hazardous substances: Chloroform Pennsylvania RTK: Chloroform Massachusetts RTK: Chloroform New Jersey: Chloroform California Director's List of Hazardous Subtances (8 CCR 339): Chloroform Tennessee: Chloroform TSCA 8(b) inventory: Chloroform TSCA 8(d) H and S data reporting: Chloroform: effective: 6/1/87; sunset: 6/1/97 SARA 302/304/311/312 extremely hazardous substances: Chloroform SARA 313 toxic chemical notification and release reporting: Chloroform CERCLA: Hazardous substances.: Chloroform: 10 lbs. (4.536 kg)

Other Regulations: OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC): R20/22- Harmful by inhalation and if swallowed. R38- Irritating to skin. R40- Possible risks of irreversible effects. S36/37- Wear suitable protective clothing and gloves.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 0

Reactivity: 0

Personal Protection: h

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 0

Reactivity: 0

Specific hazard:

Protective Equipment: Gloves. Lab coat. Vapor respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 08:16 PM

Last Updated: 05/21/2013 12:00 PM

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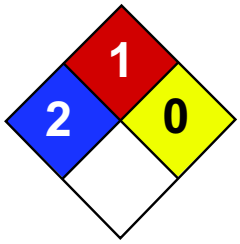

Material Safety Data Sheet
Chromium MSDS

Section 1: Chemical Product and Company Identification

Product Name: Chromium

Catalog Codes: SLC4711, SLC3709

CAS#: 7440-47-3

RTECS: GB4200000

TSCA: TSCA 8(b) inventory: Chromium

CI#: Not applicable.

Synonym: Chromium metal; Chrome; Chromium Metal Chips 2" and finer

Chemical Name: Chromium

Chemical Formula: Cr

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Chromium	7440-47-3	100

Toxicological Data on Ingredients: Chromium LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects:
Hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation. Slightly hazardous in case of ingestion.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by IARC. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to kidneys, lungs, liver, upper respiratory tract. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

Skin Contact:
In case of contact, immediately flush skin with plenty of water. Cover the irritated skin with an emollient. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: 580°C (1076°F)

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: Some metallic oxides.

Fire Hazards in Presence of Various Substances:
Slightly flammable to flammable in presence of open flames and sparks, of heat. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards:
Moderate fire hazard when it is in the form of a dust (powder) and burns rapidly when heated in flame. Chromium is attacked vigorously by fused potassium chlorate producing vivid incandescence. Pyrophoric chromium unites with nitric oxide with incandescence. Incandescent reaction with nitrogen oxide or sulfur dioxide.

Special Remarks on Explosion Hazards:
Powdered Chromium metal +fused ammonium nitrate may react violently or explosively. Powdered Chromium will explode spontaneously in air.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, acids, alkalis.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:
Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 0.5 (mg/m3) from ACGIH (TLV) [United States] TWA: 1 (mg/m3) from OSHA (PEL) [United States] TWA: 0.5 (mg/m3) from NIOSH [United States] TWA: 0.5 (mg/m3) [United Kingdom (UK)] TWA: 0.5 (mg/m3) [Canada]Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Metal solid.)

Odor: Odorless.

Taste: Not available.

Molecular Weight: 52 g/mole

Color: Silver-white to Grey.

pH (1% soln/water): Not applicable.

Boiling Point: 2642°C (4787.6°F)

Melting Point: 1900°C (3452°F) +/- !0 deg. C

Critical Temperature: Not available.

Specific Gravity: 7.14 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility:
Insoluble in cold water, hot water. Soluble in acids (except Nitric), and strong alkalies.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, incompatible materials

Incompatibility with various substances: Reactive with oxidizing agents, acids, alkalis.

Corrosivity: Not available.

Special Remarks on Reactivity:
Incompatible with molten Lithium at 180 deg. C, hydrogen peroxide, hydrochloric acid, sulfuric acid, most caustic alkalies and alkali carbonates, potassium chlorate, sulfur dioxide, nitrogen oxide, bromine pentafluoride. It may react violently or ignite with bromine pentafluoride. Chromium is rapidly attacked by fused sodium hydroxide + potassium nitrate. Potentially hazardous incompatibility with strong oxidizers.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals:
LD50: Not available. LC50: Not available.

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by IARC. May cause damage to the following organs: kidneys, lungs, liver, upper respiratory tract.

Other Toxic Effects on Humans:
Hazardous in case of skin contact (irritant), of inhalation. Slightly hazardous in case of ingestion.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans:
May cause cancer based on animal data. There is no evidence that exposure to trivalent chromium causes cancer in man.

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: May cause skin irritation. Eyes: May cause mechanical eye irritation. Inhalation: May cause irritation of the respiratory tract and mucous membranes of the respiratory tract. Ingestion: May cause gastrointestinal tract irritation with nausea, vomiting, diarrhea. Chronic Potential Health Effects: Inhalation: The effects of chronic exposure include irritation , sneezing, reddness of the throat, bronchospasm, asthma, cough, polyps, chronic inflammation, emphysema, chronic bronchitis, pharyngitis, bronchopneumonia, pneumoconoisis. Effects on the nose from chronic chromium exposure include irritation, ulceration, and perforation of the nasal septum. Inflammation and ulceration of the larynx may also occur. Ingestion or Inhalation: Chronic exposure may cause liver and kidney damage.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations:
Connecticut hazardous material survey.: Chromium Illinois toxic substances disclosure to employee act: Chromium Illinois chemical safety act: Chromium New York release reporting list: Chromium Rhode Island RTK hazardous substances: Chromium Pennsylvania RTK: Chromium Minnesota: Chromium Michigan critical material: Chromium Massachusetts RTK: Chromium Massachusetts spill list: Chromium New Jersey: Chromium New Jersey spill list: Chromium Louisiana spill reporting: Chromium California Director's List of Hazardous Substances: Chromium TSCA 8(b) inventory: Chromium SARA 313 toxic chemical notification and release reporting: Chromium CERCLA: Hazardous substances.: Chromium: 5000 lbs. (2268 kg)

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): Not controlled under WHMIS (Canada).

DSCL (EEC):
R40- Limited evidence of carcinogenic effect S36/37/39- Wear suitable protective clothing, gloves and eye/face protection. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 1

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 1

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 08:16 PM

Last Updated: 11/06/2008 12:00 PM

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SAFETY DATA SHEET

Based on Directive 2001/58/EC of the Commission of the European Communities

CHRYSENE

1. Identification of the substance/preparation and of the company/undertaking

1.1 Identification of the substance or preparation:

Synonyms: none
CAS No. : 218-01-9
EC index No. : 601-048-00-0
EINECS No. : 205-923-4
RTECS No. : GC0700000
BCR number : BCR-269
NFPA code : N.D.
Molecular weight : 228.30
Formula : C18H12

1.2 Use of the substance or the preparation:
Certified reference material for laboratory use only

1.3 Company/undertaking identification:
Institute for Reference Materials and Measurements
Retieseweg
B-2440 Geel
Tel. : +32 14 57 12 11
Fax : +32 14 58 42 73

1.4 Telephone number for emergency:
+32 70 245 245
Antigifcentrum
p/a Militair Hospitaal Koningin Astrid, Bruynstraat, B-1120 Brussel

2. Composition/information on ingredients

Hazardous ingredients	CAS No. EINECS No.	Conc. in %	Hazard symbol	Risks (R-phrases)
chrysene	218-01-9 205-923-4	100	T;N	45-50/53 (1)

(1) For R-phrases in full: see heading 16

3. Hazards identification

- May cause cancer
- Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

4. First aid measures

4.1 Eye contact:
- Consult a doctor/medical service if irritation persists
- Rinse immediately with water

4.2 Skin contact:
- Consult a doctor/medical service if irritation persists
- Wash with water and soap
- Wipe off dry product from skin
- Remove clothing before washing

4.3 After inhalation:
- Consult a doctor/medical service if breathing problems develop
- Remove the victim into fresh air
- Unconscious: maintain adequate airway and respiration

4.4 After ingestion:
- Consult a doctor/medical service if you feel unwell
- Immediately give lots of water to drink
- Never give water to an unconscious person

- Do not induce vomiting

5. Fire-fighting measures

5.1 Suitable extinguishing media:
- Water spray
- Alcohol foam
- Polymer foam
- ABC powder
- Carbon dioxide

5.2 Unsuitable extinguishing media:
- Solid water jet ineffective as extinguishing medium

5.3 Special exposure hazards:
- Not easily combustible
- Upon combustion CO and CO2 are formed

5.4 Instructions:
- Take account of toxic firefighting water
- Use firefighting water moderately and contain it

5.5 Special protective equipment for firefighters:
- Heat/fire exposure: compressed air/oxygen apparatus
- Dust cloud production: compressed air/oxygen apparatus

6. Accidental release measures

6.1 Personal protection/precautions: see heading 8.1/8.3/10.3

6.2 Environmental precautions:
- Prevent soil and water pollution
- Substance must not be discharged into the sewer
- Dam up the solid spill

6.3 Methods for cleaning up:
- Stop dust cloud by covering with sand/earth
- Carefully collect the spill/leftovers
- Scoop solid spill into closing containers
- Spill must not return in its original container
- Take collected spill to manufacturer/competent authority
- Clean contaminated surfaces with an excess of water
- Wash clothing and equipment after handling

7. Handling and storage

7.1 Handling:
- Observe strict hygiene
- Avoid prolonged and repeated contact with skin
- Avoid raising dust
- Do not discharge the waste into the drain
- Remove contaminated clothing immediately

7.2 Storage:
- Keep container tightly closed. Store only in a limited quantity. Store in a dry area. Store in a dark area.
- Keep away from: heat sources, ignition sources, oxidizing agents, acids

Storage temperature	:	N.D.	**°C**
Quantity limits	:	N.D.	**kg**
Storage life	:	N.D.	
Materials for packaging	:		

- suitable : no data available
- to avoid : no data available

7.3 Specific uses:
- See information supplied by the manufacturer

8. Exposure controls/Personal protection

8.1 Exposure limit values:

TLV-TWA	:	not listed
TLV-STEL	:	not listed
TLV-Ceiling	:	not listed
OES-LTEL	:	not listed
OES-STEL	:	not listed
MEL-LTEL	:	not listed
MEL-STEL	:	not listed
MAK	:	not listed
TRK	:	not listed
MAC-TGG 8 h	:	not listed
MAC-TGG 15 min.	:	not listed
MAC-Ceiling	:	not listed
VME-8 h	:	not listed
VLE-15 min.	:	not listed
GWBB-8 h	:	not listed
GWK-15 min.	:	not listed
Momentary value	:	not listed
EC	:	not listed
EC-STEL	:	not listed

Sampling methods:

- Chrysene (Polynuclear aromatic Hydrocarbons)	NIOSH 5515
- Chrysene	OSHA 58
- Chrysene (Polynuclear aromatic Hydrocarbons)	NIOSH 5506

8.2 Exposure controls:

8.2.1 Occupational exposure controls:
- Measure the concentration in the air regularly
- Work under local exhaust/ventilation

8.2.2 Environmental exposure controls: see heading 13

8.3 Personal protection:

8.3.1 respiratory protection:
- Dust production: dust mask with filter type P3
- High dust production: compressed air/oxygen apparatus

8.3.2 hand protection:
- Gloves
  Suitable materials: No data available

- Breakthrough time: N.D.

8.3.3 eye protection:
- Safety glasses
- In case of dust production: protective goggles

8.3.4 skin protection:
- Protective clothing
- In case of dust production: head/neck protection
  Suitable materials: No data available

9. Physical and chemical properties

9.1 General information:

Appearance (at 20°C)	:	Crystalline solid / Flakes
Odour	:	Odourless
Colour	:	White

9.2 Important health, safety and environmental information:

pH value	:	N.D.	
Boiling point/boiling range	:	448	**°C**
Flashpoint	:	N.D.	**°C**
Explosion limits	:	N.D.	**vol%** (**°C**)
Vapour pressure (at 20°C)	:	N.D.	**hPa**
Vapour pressure (at 50°C)	:	N.D.	**hPa**
Relative density (at 20°C)	:	1.27	
Water solubility	:	< 0.001	**g/100 ml**
Soluble in	:	N.D.	
Relative vapour density	:	N.D.	
Viscosity	:	N.D.	**Pa.s**
Partition coëfficient n-octanol/water	:	5.61/5.73	
Evaporation rate			
ratio to butyl acetate	:	N.D.	
ratio to ether	:	N.D.	

9.3 Other information:

Melting point/melting range	:	256	**°C**
Auto-ignition point	:	N.D.	**°C**
Saturation concentration	:	N.D.	**g/m^3**

10. Stability and reactivity

10.1 Conditions to avoid/reactivity:
- Stable under normal conditions

10.2 Materials to avoid:
- Keep away from: heat sources, ignition sources, oxidizing agents, acids

10.3 Hazardous decomposition products:
- Upon combustion CO and CO2 are formed
- Reacts violently with (strong) oxidizers
- Decomposes on exposure to (strong) acids

11. Toxicological information

11.1 Acute toxicity:

LD50 oral rat	:	N.D.	**mg/kg**
LD50 dermal rat	:	N.D.	**mg/kg**
LD50 dermal rabbit	:	N.D.	**mg/kg**
LC50 inhalation rat	:	N.D.	**mg/1/4 h**
LC50 inhalation rat	:	N.D.	**ppm/4 h**

11.2 Chronic toxicity:

EC carc. cat.	:	2
EC muta. cat.	:	3
EC repr. cat.	:	not listed
Carcinogenicity (TLV)	:	A3
Carcinogenicity (MAC)	:	K
Carcinogenicity (VME)	:	not listed
Carcinogenicity (GWBB)	:	not listed
Carcinogenicity (MAK)	:	2
Mutagenicity (MAK)	:	not listed
Teratogenicity (MAK)	:	-
IARC classification	:	3

11.3 Routes of exposure: ingestion, inhalation, eyes and skin
Caution! Substance is absorbed through the skin

11.4 Acute effects/symptoms:

AFTER SKIN CONTACT
- Slight irritation

11.5 Chronic effects:

- Probably human carcinogenic
- No certainty about human mutagenic properties

ON CONTINUOUS/REPEATED EXPOSURE/CONTACT:
- No specific information available

SIMILAR PRODUCTS CAUSE FOLLOWING SYMPTOMS:
- Feeling of weakness
- Photoallergy
- Cracking of the skin
- Skin rash/inflammation
- Skin cancer
- Lung tissue affection/degeneration
- Enlargement/affection of the liver
- Affection of the renal tissue

12. Ecological information

12.1 Ecotoxicity:

- LC50 (24 h) : 0.0007 mg/l (DAPHNIA MAGNA)
- LC50 (24 h) : >6.7 mg/l (RANA SP.)

12.2 Mobility:

- **Volatile organic compounds (VOC):** N.D.%

- Forming sediments in water
- Adsorbs into the soil
- Insoluble in water

For other physicochemical properties see heading 9.

12.3 Persistence and degradability:

- **biodegradation BOD_5** : N.D. **% ThOD**
- **water** : - Not readily biodegradable in water
- **soil** : **T ½:** > 77 **days**

12.4 Bioaccumulative potential:
- **log P_{ow}** : 5.61/5.73
- **BCF** : 4440 (LAMELLIBRANCHIATA)
- Highly bioaccumulative

12.5 Other adverse effects:

- **WGK** : 3 (Classification based on the R-phrases in compliance with Verwaltungsvorschrift wassergefährdender Stoffe (VwVwS) of 17 May 1999)
- **Effect on the ozone layer** : Not dangerous for the ozone layer (Council Regulation (EC) 3093/94)
- **Greenhouse effect** : no data available
- **Effect on waste water purification** : no data available

13. Disposal considerations

13.1 Provisions relating to waste:

- Waste material code (91/689/EEC, Council Decision
- 2001/118/EC, O.J. L47 of 16/2/2001): 16 05 06 (laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory)
- Waste material code (Flanders): 001, 045, 691
- Waste code (Germany): 59302
- Hazardous waste (91/689/EEC)

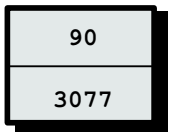
13.2 Disposal methods:

- Dissolve or mix with a combustible solvent
- Remove to an authorized incinerator equipped with an afterburner and a flue gas scrubber
- Do not discharge into surface water (2000/60/EEC, Council

13.3 Packaging/Container:

- Waste material code packaging (91/689/EEC, Council Decision
- 2001/118/EC, O.J. L47 of 16/2/2001): 15 01 10 (packaging containing residues of or contaminated by dangerous substances)

14. Transport information



14.1 Classification of the substance in compliance with UN Recommendations

UN number	: 3077
CLASS	: 9
SUB RISKS	: -
PACKING	: III
PROPER SHIPPING NAME	: UN 3077, Environmentally hazardous substance, solid, n.o.s. (chrysene)

14.2 ADR (transport by road)

CLASS	: 9
PACKING	: III
DANGER LABEL TANKS	: 9
DANGER LABEL PACKAGES	: 9

14.3 RID (transport by rail)

CLASS	: 9
PACKING	: III
DANGER LABEL TANKS	: 9
DANGER LABEL PACKAGES	: 9

14.4 ADNR (transport by inland waterways)

CLASS	: 9
PACKING	: III
DANGER LABEL TANKS	: 9
DANGER LABEL PACKAGES	: 9

14.5 IMDG (maritime transport)

CLASS	: 9
SUB RISKS	: -
PACKING	: III
MFAG	: -
EMS	: -
MARINE POLLUTANT	: P

14.6 ICAO (air transport)

CLASS	: 9
SUB RISKS	: -
PACKING	: III
PACKING INSTRUCTIONS PASSENGER AIRCRAFT	:
PACKING INSTRUCTIONS CARGO AIRCRAFT	:

14.7 Special precautions in connection with transport : none

14.8 Limited quantities (LQ) :

When substances and their packaging meet the conditions established by ADR/RID/ADNR in chapter 3.4, **only** the following prescriptions shall be complied with:
each package shall display a diamond-shaped figure with the following inscription:
- 'UN 3077'
or, in the case of different goods with different identification numbers within a single package:
- the letters 'LQ'

15. Regulatory information

Enumerated in substance list Annex I of directive 67/548/EEC et sequens

Toxic

Dangerous for the environment

R45 : May cause cancer
R50/53 : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

S53 : Avoid exposure - obtain special instructions before use
S45 : In case of accident or if you feel unwell, seek medical advice (show the label where possible)
S60 : This material and/or its container must be disposed of as hazardous waste
S61 : Avoid release to the environment. Refer to special instructions/safety data sheets.

16. Other information

The information provided on this MSDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

N.A. = NOT APPLICABLE
N.D. = NOT DETERMINED
***** = INTERNAL CLASSIFICATION

Full text of any R-phrases referred to under heading 2:

R45 : May cause cancer
R50/53 : Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment

Exposure limits:
TLV : Threshold Limit Value - ACGIH USA 2000
OES : Occupational Exposure Standards - United Kingdom 1999
MEL : Maximum Exposure Limits - United Kingdom 1999
MAK : Maximale Arbeitsplatzkonzentrationen - Germany 2001
TRK : Technische Richtkonzentrationen - Germany 2001
MAC : Maximale aanvaarde concentratie - The Netherlands 2002
VME : Valeurs limites de Moyenne d'Exposition - France 1999
VLE : Valeurs limites d'Exposition à court terme - France 1999
GWBB : Grenswaarde beroepsmatige blootstelling - Belgium 1998
GWK : Grenswaarde kortstondige blootstelling - Belgium 1998
EC : Indicative occupational exposure limit values - directive 2000/39/EC

Chronic toxicity:
K : List of the carcinogenic substances and processes - The Netherlands 2002

SAFETY DATA SHEET

Version 5.4
Revision Date 12/01/2015
Print Date 03/03/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : *cis*-1,2-Dichloroethylene

Product Number : D62004
Brand : Aldrich
Index-No. : 602-026-00-3

CAS-No. : 156-59-2

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2), H225
Acute toxicity, Inhalation (Category 4), H332
Acute aquatic toxicity (Category 3), H402
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H225 Highly flammable liquid and vapour.
H332 Harmful if inhaled.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.

P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312	Call a POISON CENTER or doctor/ physician if you feel unwell.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P403 + P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	:	cis-Acetylene dichloride
Formula	:	$C_2H_2Cl_2$
Molecular weight	:	96.94 g/mol
CAS-No.	:	156-59-2
EC-No.	:	205-859-7
Index-No.	:	602-026-00-3

Hazardous components

Component	Classification	Concentration
cis-Dichloroethylene		
	Flam. Liq. 2; Acute Tox. 4; Aquatic Acute 3; Aquatic Chronic 3; H225, H332, H412	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

In case of eye contact
Flush eyes with water as a precaution.

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Hydrogen chloride gas

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Use explosion-proof equipment.Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Handle and store under inert gas. Air and moisture sensitive. Light sensitive.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
cis-Dichloroethylene	156-59-2	TWA	200 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Central Nervous System impairment Eye irritation		

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid Colour: light yellow
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -80 °C (-112 °F) - lit.
f)	Initial boiling point and boiling range	60 °C (140 °F) - lit.
g)	Flash point	6.0 °C (42.8 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	1.284 g/cm3 at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available

p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Vapours may form explosive mixture with air.

10.4 Conditions to avoid
Heat, flames and sparks. Extremes of temperature and direct sunlight.

10.5 Incompatible materials
Oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LC50 Inhalation - Rat - 13700 ppm
Remarks: Behavioral:Somnolence (general depressed activity). Liver:Fatty liver degeneration.

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

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

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: KV9420000

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

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1150 Class: 3 Packing group: II
Proper shipping name: 1,2-Dichloroethylene

Poison Inhalation Hazard: No

IMDG
UN number: 1150 Class: 3 Packing group: II EMS-No: F-E, S-D
Proper shipping name: 1,2-DICHLOROETHYLENE

IATA
UN number: 1150 Class: 3 Packing group: II
Proper shipping name: 1,2-Dichloroethylene

15. REGULATORY INFORMATION

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

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

SARA 311/312 Hazards
Fire Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
cis-Dichloroethylene	156-59-2	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
cis-Dichloroethylene	156-59-2	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
cis-Dichloroethylene	156-59-2	1993-04-24

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H332	Harmful if inhaled.
H402	Harmful to aquatic life.

HMIS Rating

Health hazard:	1
Chronic Health Hazard:	*
Flammability:	3
Physical Hazard	1

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	0

Further information
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Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.4 Revision Date: 12/01/2015 Print Date: 03/03/2016

Material Safety Data Sheet

Product Name: COBALT-BASED ALLOYS **ID: 1147**

* * * Section 1 - Chemical Product and Company Identification * * *

Chemical Formula: Cobalt (Co), chromium (Cr) and other alloying elements
Product Use: Cast aerospace parts
Other Designations: 694, 98M2, CoCrNiMoFe, ECY 768, F75, FSX 414, G34, How 1, How 3, How 6, How 12, How 19, How 21, How 25 (L605), How 31 (X40), How 36, How F, How J, Mar-M 302, Mar-M 509, Mar-M 918, Merle 72, MP35N, S 816, PT1377, PT1508, WI 52, X 45 and other Cobalt-Based Alloys

Alcoa Inc.
201 Isabella Street
Pittsburgh, PA 15212-5858

Phone: Health and Safety: 1-412-553-4649

Emergency Information: USA: Chemtrec: 1-800-424-9300 or 1-703-527-3887 Alcoa: 1-412-553-4001
Website: For a current MSDS, refer to Alcoa websites: www.alcoa.com or Internally at my.alcoa.com EHS Community

* * * Section 2 - Hazards Identification * * *

EMERGENCY OVERVIEW

Solid. Metallic appearance. Odorless. Non-combustible as supplied.

Explosion/fire hazards may be present when (See Sections 5, 7 and 10 for additional information):
***** Molten metal is in contact with water/moisture.
***** Heavily concentrated dust clouds are dispersed in the air.

Dust and fume from processing can cause irritation of eyes, skin and upper respiratory tract.

POTENTIAL HEALTH EFFECTS

The following statements summarize the health effects generally expected in cases of overexposures. User specific situations should be assessed by a qualified individual. Additional health information can be found in Section 11.
The health effects listed below are not likely to occur unless processing or recycling/combustion generate dusts or fumes.

Eyes Dust or fume from processing: Can cause irritation.

Skin Dust or fume from processing: Can cause irritation, sensitization and allergic contact dermatitis.

Inhalation Health effects from mechanical processing (e.g., cutting, grinding): Can cause upper respiratory tract irritation. **Chronic overexposures:** Can cause asthma, respiratory sensitization, scarring of the lungs (pulmonary fibrosis), central nervous system damage, secondary Parkinson's disease and reproductive harm in males.

Additional health effects from elevated temperature processing (e.g., welding, melting): **Acute overexposures:** Can cause nausea, fever, chills, shortness of breath and malaise (metal fume fever). **Chronic overexposures:** Can cause the accumulation of fluid in the lungs (pulmonary edema) and lung cancer.

Carcinogenicity and Reproductive Hazard

Product as shipped: Does not present any cancer or reproductive hazards.
Dust and fumes from mechanical processing: Can present a cancer hazard (nickel, cobalt). Can present a reproductive hazard for males (manganese).
Dust and fumes from welding or elevated temperature processing: Can present a cancer hazard (hexavalent chromium compounds, nickel compounds, welding fumes, cobalt compounds). Can present a reproductive hazard for males (manganese).

Medical Conditions Aggravated By Exposure to Product, Components or Compounds Formed During Processing

Dust or fume from processing: Asthma, chronic lung disease, skin rashes and secondary Parkinson's disease.

* * * Section 3 - Composition / Information on Ingredients * * *

Complete composition is provided below and may include some components classified as non-hazardous.

CAS #	Component	Percent
7440-48-4	Cobalt	35-65
7440-47-3	Chromium	15-35
7440-02-0	Nickel	0-35
7440-33-7	Tungsten	0-25
7439-89-6	Iron	0-20
7439-98-7	Molybdenum	0-15
7440-25-7	Tantalum	0-10
7440-62-2	Vanadium	0-5
7439-96-5	Manganese	0-5
7429-90-5	Aluminum	0-5
7440-03-1	Niobium	0-5
7440-21-3	Silicon	0-5
7440-44-0	Carbon	0-5

Component Information

Additional compounds which may be formed during processing are listed in Section 8.

* * * Section 4 - First Aid Measures * * *

First Aid: Eyes

Dust or fume from processing: Flush eyes with plenty of water or saline for at least 15 minutes. Consult a physician.

First Aid: Skin

Dust or fume from processing: Wash skin with soap and water for at least 15 minutes. Consult a physician if irritation persists.

First Aid: Inhalation

Dust or fume from processing: Remove to fresh air. If unconscious or severely injured, check for clear airway, breathing and presence of pulse. Perform CPR if there is no pulse or respiration. Consult a physician.

* * * Section 5 - Fire Fighting Measures * * *

Flammable/Combustible Properties

This product does not present fire or explosion hazards as shipped. Dust and fines may be ignitable.

Fire/Explosion

May be a potential hazard under the following conditions:

***** Molten metal in contact with water/moisture. Moisture entrapped by molten metal can be explosive. ***** Dust or fines dispersed in the air can be explosive. Heavily concentrated dusts in air can be explosive if subjected to a strong ignition source.

Extinguishing Media

Use a Class D agent, fluxing salts, graphite or dry sand on dust or fine fires. Otherwise, use fire fighting methods and materials that are appropriate for surrounding fire.

Unsuitable Extinguishing Media

DO NOT USE:

***** Water around molten metal.

These agents will react with the burning material.

Fire Fighting Equipment/Instructions

Fire fighters should wear NIOSH approved, positive pressure, self-contained breathing apparatus and full protective clothing when appropriate.

* * * Section 6 - Accidental Release Measures * * *

Small/Large Spill: Avoid generating dust. Recover using mechanical means. Collect scrap for recycling.

* * * Section 7 - Handling and Storage * * *

Handling/Storage

Avoid generating dust. Avoid contact with sharp edges or heated metal. Product should be kept dry. Do not eat, drink, apply cosmetics, or smoke when handling or using.

Requirements for Remelting of Scrap Material and/or Ingot

Molten metal and water can be an explosive combination. The risk is greatest when there is sufficient molten metal to entrap or seal off the water. Water and other forms of contamination on or contained in scrap or remelt ingot are known to have caused explosions in melting operations. While the products may have minimal surface roughness and internal voids, there remains the possibility of moisture contamination or entrapment. If confined, even a few drops of water can lead to violent explosions.

During melting operations, the following minimum guidelines should be observed:
***** Inspect all materials prior to furnace charging and completely remove surface contamination such as water, ice, snow, deposits of grease and oil or other surface contamination resulting from weather exposure, shipment, or storage.
***** Store materials in dry, heated areas with any cracks or cavities pointed downwards.
***** Preheat and dry large or heavy items such as ingot adequately before charging into a furnace containing molten metal. This is typically done by use of a drying oven or homogenizing furnace. The drying cycle should bring the internal metal temperature of the coldest item of the batch to 400°F and then hold at that temperature for 6 hours.

* * * Section 8 - Exposure Controls / Personal Protection * * *

Engineering Controls

If dust or fumes are generated through processing: Use with adequate ventilation to meet the limits listed in Section 8, Exposure Guidelines.

Personal Protective Equipment

Respiratory Protection

If dust or fumes are generated through processing: Use NIOSH-approved respiratory protection as specified by an Industrial Hygienist or other qualified professional if concentrations exceed the limits listed in Section 8, Exposure Guidelines. Suggested respiratory protection: N95

Eye Protection Wear safety glasses/goggles to avoid eye injury.

Skin Protection Wear appropriate gloves to avoid any skin injury.

General

Personnel who handle and work with **molten metal** should utilize primary protective clothing like polycarbonate face shields, fire resistant tapper's jackets, neck shades (snoods), leggings, spats and similar equipment to prevent burn injuries. In addition to primary protection, secondary or day-to-day work clothing that is fire resistant and sheds metal splash is recommended for use with molten metal. Synthetic materials should never be worn even as secondary clothing (undergarments).

Exposure Guidelines

A: General Product Information

No Occupational Exposure Limit has been developed specifically for this product.
Alcoa recommends an Occupational Exposure Limit for **Cobalt** of 0.02 mg/m3 TWA.
Alcoa recommends an Occupational Exposure Limit for **Chromium (VI) Compounds [both soluble and insoluble forms]** of 0.25 ug/m3 TWA as chromium.
Alcoa recommends an Occupational Exposure Limit for **Nickel Compounds** of 0.1 mg/m3 TWA.
Alcoa recommends Occupational Exposure Limits for **Manganese** of 0.05 mg/m3 TWA (total particulate) and 0.02 mg/m3 TWA (respirable fraction).

B: Component Exposure Limits

Cobalt (7440-48-4)
ACGIH 0.02 mg/m3 TWA
OSHA 0.1 mg/m3 TWA (dust and fume)

Chromium (7440-47-3)
ACGIH 0.5 mg/m3 TWA
OSHA 1 mg/m3 TWA

Nickel (7440-02-0)
ACGIH 1.5 mg/m3 TWA (inhalable fraction)
OSHA 1 mg/m3 TWA

Tungsten (7440-33-7)
ACGIH 5 mg/m3 TWA
ACGIH 10 mg/m3 STEL

Molybdenum (7439-98-7)
ACGIH 10 mg/m3 TWA (inhalable fraction); 3 mg/m3 TWA (respirable fraction)
OSHA 15 mg/m3 TWA (total dust)

Tantalum (7440-25-7)
ACGIH 5 mg/m3 TWA (dust)
OSHA 5 mg/m3 TWA

Vanadium (7440-62-2)
OSHA 0.5 mg/m3 Ceiling (respirable dust, as V2O5); 0.1 mg/m3 Ceiling (fume, as V2O5)

Manganese (7439-96-5)
ACGIH 0.2 mg/m3 TWA
OSHA 5 mg/m3 Ceiling (fume)

Aluminum (7429-90-5)
ACGIH 10 mg/m3 TWA (metal dust)
OSHA 15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)

Silicon (7440-21-3)
OSHA 15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)

C: Exposure Limits for Additional Compounds Which May Be Formed During Processing

Chromium (II) compounds (Not Available)
OSHA 0.5 mg/m3 TWA (as Cr)

Chromium (III) Compounds (Not Available)
ACGIH 0.5 mg/m3 TWA (as Cr)
OSHA 0.5 mg/m3 TWA (as Cr)

Chromium (VI) compounds- water soluble (Not Available)
ACGIH 0.05 mg/m3 TWA (as Cr)

Chromium (VI) compounds (certain water insoluble forms) (Not Available)
ACGIH 0.01 mg/m3 TWA (as Cr)

Chromium (VI) (18540-29-9)
OSHA 2.5 µg/m3 Action Level; 5 µg/m3 TWA (Cancer hazard - See 29 CFR 1910.1026)

Nickel insoluble compounds (Not Available)
ACGIH 0.2 mg/m3 TWA (inhalable fraction, as Ni)
OSHA 1 mg/m3 TWA (as Ni)

Tungsten, insoluble compounds (Not Available)
ACGIH 5 mg/m3 TWA (as W)
ACGIH 10 mg/m3 STEL (as W)

Iron oxide (1309-37-1)
ACGIH 5 mg/m3 TWA (respirable fraction)
OSHA 10 mg/m3 TWA

Molybdenum insoluble compounds (Not Available)
ACGIH 10 mg/m3 TWA (inhalable fraction, as Mo); 3 mg/m3 TWA (respirable fraction, as Mo)
OSHA 15 mg/m3 TWA (total dust)

Tantalum oxide (1314-61-0)
ACGIH 5 mg/m3 TWA (dust, as Ta)
OSHA 5 mg/m3 TWA (dust)

Vanadium pentoxide (1314-62-1)
ACGIH 0.05 mg/m3 TWA (dust or fume, respirable fraction)
OSHA 0.5 mg/m3 Ceiling (respirable dust, as V2O5); 0.1 mg/m3 Ceiling (fume, as V2O5)

Manganese compounds, inorganic (Not Available)
ACGIH 0.2 mg/m3 TWA (as Mn)
OSHA 5 mg/m3 Ceiling (as Mn) (related to Manganese compounds)

Aluminum oxide (1344-28-1)
ACGIH 10 mg/m3 TWA (particulate matter containing no asbestos and <1% crystalline silica)
OSHA 15 mg/m3 TWA (total dust); 5 mg/m3 TWA (respirable fraction)

* * * Section 9 - Physical & Chemical Properties * * *

Physical State:	Solid	**Appearance:**	Metallic appearance
Boiling Point:	Not determined	**Melting Point:**	2719ºF (1493ºC) Cobalt
Vapor Pressure:	Not applicable	**Vapor Density:**	Not applicable
Solubility in Water:	Not soluble	**Specific Gravity:**	See Density
Density:	550 lb/ft3 (8.8 g/cm3)	**pH Level:**	Not applicable
Odor:	Odorless	**Odor Threshold:**	Not applicable
Octanol-Water Coefficient:	Not applicable		

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Stability Stable under normal conditions of use, storage, and transportation.

Conditions to Avoid

In powder form, can react with strong oxidizers such as concentrated nitric acid. Molten metal can react violently/explosively with water or moisture, particularly when the water is entrapped.

* * * Section 11 - Toxicological Information * * *

Health Effects Associated with Individual Ingredients

Cobalt Can cause irritation of eyes, skin and respiratory tract. Skin contact: Can cause allergic reactions. Acute and chronic overexposures: Can cause respiratory sensitization, asthma, scarring of the lungs (pulmonary fibrosis) and damage to the heart muscle (cardiomyopathy). **Cobalt and certain cobalt compounds** IARC/NTP: Listed as possibly carcinogenic to humans by IARC (Group 2B)*.

Chromium dust and mist Can cause irritation of eyes, skin and respiratory tract. **Chromium and trivalent chromium** IARC/NTP: Listed as "unclassifiable as to carcinogenicity in humans" by IARC (Group 3).

Nickel dust and fumes Can cause irritation of eyes, skin and respiratory tract. Eye contact: Can cause inflammation of the eyes and eyelids (conjunctivitis). Skin contact: Can cause sensitization and allergic contact dermatitis. Chronic overexposures: Can cause perforation of the nasal septum, inflammation of the nasal passages (sinusitis), respiratory sensitization, asthma and scarring of the lungs (pulmonary fibrosis). **Nickel alloys** IARC/NTP: Reviewed but not recommended for listing by the NTP. Listed as possibly carcinogenic to humans by IARC (Group 2B)*.

Tungsten dust Can cause irritation of eyes, skin and upper respiratory tract.

Molybdenum dust and fumes Can cause irritation of mucous membranes, skin and respiratory tract. Acute overexposures: Can cause headache, backache and sore joints. Chronic overexposures: Can cause deformities of the joints, blood disorders, kidney damage, lung damage and liver damage.

Tantalum and tantalum oxide Can cause mechanical irritation of eyes, skin and upper respiratory tract. Generally of low toxicity.

Manganese dust or fumes Chronic overexposures: Can cause inflammation of the lung tissue, scarring of the lungs (pulmonary fibrosis), central nervous system damage, secondary Parkinson's disease and reproductive harm in males.

Aluminum dust, fines and fumes Low health risk by inhalation. Generally considered to be biologically inert.

Niobium dust and fumes Acute overexposures: Generally of low toxicity. Chronic overexposures: Can cause lung damage.

Silicon, inert dusts Chronic overexposures: Can cause chronic bronchitis and narrowing of the airways.

Health Effects Associated with Individual Compounds Formed During Processing

(The following could be expected if welded, remelted or otherwise processed at elevated temperatures.)

Hexavalent chromium (Chrome VI) Can cause irritation of eyes, skin and respiratory tract. Skin contact: Can cause irritant dermatitis, allergic reactions and skin ulcers. Chronic overexposures: Can cause perforation of the nasal septum, respiratory sensitization, asthma, the accumulation of fluid in the lungs (pulmonary edema), lung damage, kidney damage, lung cancer, nasal cancer and cancer of the gastrointestinal tract. IARC/NTP: Listed as "known to be a human carcinogen" by the NTP. Listed as carcinogenic to humans by IARC (Group 1)*.

Nickel compounds Associated with lung cancer, cancer of the vocal cords and nasal cancer. IARC/NTP: Listed as "known to be a human carcinogen" by the NTP. Listed as carcinogenic to humans by IARC (Group 1)*.

Iron oxide Chronic overexposures: Can cause benign lung disease (siderosis). Ingestion: Can cause irritation of gastrointestinal tract, bleeding, changes in the pH of the body fluids (metabolic acidosis) and liver damage.

Molybdenum trioxide Can cause irritation of eyes, mucous membranes and upper respiratory tract. Chronic overexposures: Can cause reduction in the number of red blood cells (anemia), predisposition to gout, thyroid function changes, liver damage and lung damage. Additional information: Studies with experimental animals by inhalation have found lung cancer.

Vanadium pentoxide Can cause irritation of eyes, skin and respiratory tract. Skin contact (prolonged or repeated): Can cause sensitization and dermatitis. Acute overexposures: Can cause inflammation of the eyes and eyelids (conjunctivitis), bronchitis and the accumulation of fluid in the lungs (pulmonary edema). Effects can be delayed for several days. Chronic overexposures: Can cause kidney damage, blindness, asthma and emphysema. IARC/NTP: Listed as possibly carcinogenic to humans by IARC (Group 2B)*.

Manganese oxide fumes Can cause irritation of eyes, skin and respiratory tract. Acute overexposures: Can cause nausea, fever, chills, shortness of breath and malaise (metal fume fever).

Alumina (aluminum oxide) Low health risk by inhalation. Generally considered to be biologically inert.

Silica, amorphous Acute overexposures: Can cause dryness of eyes, nose and upper respiratory tract.

Acute Toxicity of Ingredients/Formed Compounds

A: General Product Information No information available for product.

B: Component Analysis - LD50/LC50

Cobalt (7440-48-4) Inhalation LC50 Rat: >10 mg/L/1H; Oral LD50 Rat:6170 mg/kg

Nickel (7440-02-0) Oral LD50 Rat: >9000 mg/kg
Iron (7439-89-6) Oral LD50 Rat: 984 mg/kg
Manganese (7439-96-5) Oral LD50 Rat: 9 g/kg
Silicon (7440-21-3) Oral LD50 Rat: 3160 mg/kg
Carbon (7440-44-0) Oral LD50 Rat: >10000 mg/kg

C: Formed Compound Toxicity - LD50s/LC50s

Iron oxide (1309-37-1) Oral LD50 Rat: >10000 mg/kg
Tantalum oxide (1314-61-0) Oral LD50 Rat: 8 g/kg
Vanadium pentoxide (1314-62-1)
Inhalation LC50 Rat: 2.21 mg/L/4H; Oral LD50 Rat:10 mg/kg; Dermal LD50 Rat:>2500 mg/kg
Aluminum oxide (1344-28-1) Oral LD50 Rat: >5000 mg/kg
Silicon dioxide (amorphous) (69012-64-2)
Oral LD50 Rat: >5000 mg/kg; Inhalation LC50 Rat:>2.2 mg/L/1H; Dermal LD50 Rabbit:>2000 mg/kg (related to Silica, amorphous)

Carcinogenicity of Ingredients
A: Ingredient Carcinogenicity - IARC/NTP

Component	CAS	IARC 1	IARC 2A	IARC 2B	IARC 3	IARC 4	NTP K	NTP RA
Cobalt	7440-48-4	No	No	Yes	No	No	No	No
Chromium	7440-47-3	No	No	No	Yes	No	No	No
Nickel	7440-02-0	No	No	Yes	No	No	No	No

B: Ingredient Carcinogenicity - ACGIH

Cobalt (7440-48-4)
ACGIH A3 - Confirmed animal carcinogen with unknown relevance to humans
Chromium (7440-47-3)
ACGIH A4 - Not Classifiable as a Human Carcinogen
Nickel (7440-02-0)
ACGIH A5 - Not Suspected as a Human Carcinogen

C: Ingredient References

Cobalt (7440-48-4)
IARC Monograph 86 [2006] (without tungsten carbide), Monograph 52 [1991]
Chromium (7440-47-3)
IARC Monograph 49 [1990] (listed under Chromium and Chromium compounds), Supplement 7 [1987]
Nickel (7440-02-0)
IARC Monograph 49 [1990], Supplement 7 [1987]

Carcinogenicity of Compounds Formed During Processing
A: Formed Compound Carcinogenicity - IARC/NTP

Component	CAS	IARC 1	IARC 2A	IARC 2B	IARC 3	IARC 4	NTP K	NTP RA
Chromium (III) Compounds	Not Available	No	No	No	Yes	No	No	No
Chromium (VI) compounds (certain water insoluble forms)	Not Available	Yes	No	No	No	No	Yes	No
Nickel compounds	Not Available	Yes	No	No	No	No	Yes	No
Iron oxide	1309-37-1	No	No	No	Yes	No	No	No
Vanadium pentoxide	1314-62-1	No	No	Yes	No	No	No	No
Silicon dioxide (amorphous) (related to Silica, amorphous)	69012-64-2	No	No	No	Yes	No	No	No

B: Formed Compound Carcinogenicity - ACGIH

Chromium (III) Compounds (Not Available)
ACGIH A4 - Not Classifiable as a Human Carcinogen

Chromium (VI) compounds- water soluble (Not Available)
ACGIH A1 - Confirmed Human Carcinogen

Chromium (VI) compounds (certain water insoluble forms) (Not Available)
ACGIH A1 - Confirmed Human Carcinogen

Nickel insoluble compounds (Not Available)
ACGIH A1 - Confirmed Human Carcinogen

Iron oxide (1309-37-1)
ACGIH A4 - Not Classifiable as a Human Carcinogen

Vanadium pentoxide (1314-62-1)
ACGIH A4 - Not Classifiable as a Human Carcinogen (dust and fume)

Aluminum oxide (1344-28-1)
ACGIH A4 - Not Classifiable as a Human Carcinogen

C: Formed Compound References

Chromium (III) Compounds (Not Available)
IARC Monograph 49 [1990] (listed under Chromium and Chromium compounds), Supplement 7 [1987]

Chromium (VI) compounds (certain water insoluble forms) (Not Available)
IARC Monograph 49 [1990] (evaluated as a group)

Chromium (VI) (18540-29-9)
IARC Monograph 49 [1990] (evaluated as a group)

Nickel compounds (Not Available)
IARC Monograph 49 [1990] (evaluated as a group)

Iron oxide (1309-37-1)
IARC Supplement 7 [1987], Monograph 1 [1972]

Vanadium pentoxide (1314-62-1)
IARC Monograph 86 [2006]

Silicon dioxide (amorphous) (69012-64-2)
IARC Monograph 68 [1997], Supplement 7 [1987] (related to Silica, amorphous)

Descriptions of IARC and NTP Classifications

IARC 1: The agent is carcinogenic to humans. There is sufficient evidence that a causal relationship existed between exposure to the agent and human cancer.

IARC 2A: The agent is probably carcinogenic to humans. Generally includes agents for which there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.

IARC 2B: The agent is possibly carcinogenic to humans. Generally includes agents for which there is limited evidence in humans and less than sufficient evidence in experimental animals.

IARC 3: The agent is not classifiable as to its carcinogenicity to humans. Generally includes agents for which there is inadequate evidence in humans and inadequate or limited evidence in experimental animals.

IARC 4: The agent is probably not carcinogenic to humans. Generally includes agents for which there is evidence suggesting lack of carcinogenicity in humans and in experimental animals.

NTP K: Known to be a human carcinogen.

NTP RA: Reasonably anticipated to be a human carcinogen.

* * * Section 12 - Ecological Information * * *

Ecotoxicity

A: General Product Information No information available for product.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Cobalt (7440-48-4) 96 Hr LC50 Brachydanio rerio: >100 mg/L [static]

Nickel (7440-02-0)
96 Hr LC50 Oncorhynchus mykiss: 31.7 mg/L (adult); 96 Hr LC50 Pimephales promelas: 3.1 mg/L; 96 Hr LC50 Brachydanio rerio: >100 mg/L
72 Hr EC50 freshwater algae (4 species): 0.1 mg/L; 72 Hr EC50 Selenastrum capricornutum: 0.18 mg/L
96 Hr EC50 water flea: 510 µg/L
Iron (7439-89-6) 96 Hr LC50 Morone saxatilis: 13.6 mg/L [static]

Environmental Fate No information available for product.

* * * Section 13 - Disposal Considerations * * *

Disposal Instructions Reuse or recycle material whenever possible.
US EPA Waste Number & Descriptions
A: General Product Information
If reuse or recycle is not possible, then characterize in accordance with applicable regulations (40 CFR 261 or state equivalent in the U.S.) prior to disposal. TCLP testing is recommended for chromium.
B: Component Waste Numbers
RCRA waste codes other than described under Section A may apply depending on use of product. Refer to 40 CFR 261 or state equivalent in the U.S.

* * * Section 14 - Transportation Information * * *

Special Transportation

	PSN #1	PSN #2	PSN #3	PSN #4
Notes:	(1)			
UN NA Number:	-			
Proper Shipping Name:	Not regulated			
Hazard Class:	-			
Packing Group:	-			
RQ:	-			
Other - Tech Name:	-			
Other - Marine Pollutant:	-			

Notes:
(1) When "Not regulated," enter the proper freight classification, "MSDS Number," and "Product Name" on the shipping paperwork.

Canadian Controlled Products Regulation PIN:	Not regulated

* * * Section 15 - Regulatory Information * * *

US Federal Regulations
A: General Product Information
In reference to Title VI of the Clean Air Act of 1990, this material does not contain nor was it manufactured using ozone-depleting chemicals.
B: Component Analysis
This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65) and/or CERCLA (40 CFR 302.4).
Cobalt (7440-48-4)
SARA 313: 0.1 % de minimis concentration
Chromium (7440-47-3)
SARA 313: 1.0 % de minimis concentration
CERCLA: 5000 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers); 2270 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers)

Nickel (7440-02-0)
SARA 313: 0.1 % de minimis concentration
CERCLA: 100 lb final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers); 45.4 kg final RQ (no reporting of releases of this hazardous substance is required if the diameter of the pieces of the solid metal released is larger than 100 micrometers)

Vanadium (7440-62-2)
SARA 313: 1.0 % de minimis concentration (except when contained in an alloy)

Manganese (7439-96-5)
SARA 313: 1.0 % de minimis concentration

Aluminum (7429-90-5)
SARA 313: 1.0 % de minimis concentration (dust or fume only)

SARA 311/312 Physical and Health Hazard Categories:

Immediate (acute) Health Hazard:	Yes, if particulates/fumes generated during processing
Delayed (chronic) Health Hazard:	Yes, if particulates/fumes generated during processing
Fire Hazard:	No
Sudden Release of Pressure:	No
Reactive:	No

State Regulations

A: General Product Information PENNSYLVANIA "Special Hazardous Substance": Chromium, Nickel
Chemical(s) known to the State of California to cause cancer: Chromium (hexavalent compounds), Cobalt metal powder, Nickel (metallic) and nickel compounds

B: Component Analysis - State

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS #	CA	FL	MA	MN	NJ	PA
Cobalt	7440-48-4	Yes	No	Yes	Yes	Yes	Yes
Chromium	7440-47-3	Yes	No	Yes	Yes	Yes	Yes
Nickel	7440-02-0	Yes	No	Yes	Yes	Yes	Yes
Tungsten	7440-33-7	Yes	No	Yes	Yes	Yes	Yes
Iron	7439-89-6	Yes	No	No	No	No	No
Molybdenum	7439-98-7	Yes	No	Yes	Yes	Yes	Yes
Tantalum	7440-25-7	Yes	No	Yes	Yes	Yes	Yes
Vanadium	7440-62-2	Yes	No	Yes	No	Yes	Yes
Manganese	7439-96-5	Yes	No	Yes	Yes	Yes	Yes
Aluminum	7429-90-5	Yes	No	Yes	Yes	Yes	Yes
Silicon	7440-21-3	No	No	Yes	Yes	Yes	Yes

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):
WARNING! This product contains a chemical known to the state of California to cause cancer.

Other Regulations

A: General Product Information Material meets the criteria for inclusion in WHMIS Class D2A.

B: Component Analysis - WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Component	CAS #	Minimum Concentration
Cobalt	7440-48-4	0.1 %
Chromium	7440-47-3	0.1 %
Nickel	7440-02-0	0.1 %
Tungsten	7440-33-7	1 %
Molybdenum	7439-98-7	1 %
Tantalum	7440-25-7	1 %
Vanadium	7440-62-2	1 %
Manganese	7439-96-5	1 %
Aluminum	7429-90-5	1 %

C: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS	AUST.	MITI
Cobalt	7440-48-4	Yes	Yes	Yes	Yes	No
Chromium	7440-47-3	Yes	Yes	Yes	Yes	No
Nickel	7440-02-0	Yes	Yes	Yes	Yes	No
Tungsten	7440-33-7	Yes	Yes	Yes	Yes	No
Iron	7439-89-6	Yes	Yes	Yes	Yes	No
Molybdenum	7439-98-7	Yes	Yes	Yes	Yes	No
Tantalum	7440-25-7	Yes	Yes	Yes	Yes	No
Vanadium	7440-62-2	Yes	Yes	Yes	Yes	No
Manganese	7439-96-5	Yes	Yes	Yes	Yes	No
Aluminum	7429-90-5	Yes	Yes	Yes	Yes	No
Niobium	7440-03-1	Yes	Yes	Yes	Yes	No
Silicon	7440-21-3	Yes	Yes	Yes	Yes	No
Carbon	7440-44-0	Yes	Yes	Yes	Yes	No

Inventory information

MITI Inventory: Pure metals are not specifically listed by CAS or MITI number on the MITI Inventory. However, the class of compounds for each of these metals is listed.

* * * Section 16 - Other Information * * *

MSDS History

Original: June 18, 2001
Supersedes: October 11, 2004
Revised: April 22, 2008

MSDS Status

04/22/2008: Reviewed on a periodic basis in accordance with Alcoa policy. Changes in Sections 1, 2, 3, 4, 5, 8, 11, 12, 13, 14 & 15.
10/11/2004: Combined with Alcoa MSDS #'s 1148 and 1149. Changes in Sections 1, 2, 3, 8 and 15. Covers some products formerly on Howmet MSDSs 201, 202, 203, 204, 205, 206 and 504.
06/18/2001: New MSDS; covers some products formerly on Howmet MSDS 201.

Prepared By

Hazardous Materials Control Committee
Preparer: Stephanie Williams, 412-553-1479/Jon N. Peace, 412-553-2293

MSDS System Number

159242

Other Information

***** Guide to Occupational Exposure Values-2007, Compiled by the American Conference of Governmental Industrial Hygienists (ACGIH).
***** Documentation of the Threshold Limit Values and Biological Exposure Indices, Sixth Edition, 1991, Compiled by the American Conference of Governmental Industrial Hygienists, Inc. (ACGIH).
***** NIOSH Pocket Guide to Chemical Hazards, U.S. Department of Health and Human Services, February 2004.
***** Patty's Industrial Hygiene and Toxicology: Volume II: Toxicology, 4th ed., 1994, Patty, F. A.; edited by Clayton, G. D. and Clayton, F. E.: New York: John Wiley & Sons, Inc.
***** expub, www.expub.com, Expert Publishing, LLC.

Key-Legend:

ACGIH	American Conference of Governmental Industrial Hygienists
AICS	Australian Inventory of Chemical Substances
CAS	Chemical Abstract Service
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CPR	Cardio-pulmonary Resuscitation
DOT	Department of Transportation
DSL	Domestic Substances List (Canada)
EC	Effective Concentration
ED	Effective Dose
EINECS	European Inventory of Existing Commercial Chemical Substances
EPA	Environmental Protection Act
IARC	International Agency for Research on Cancer
LC_{50}	Lethal concentration (50 percent kill)
LC_{Lo}	Lowest published lethal concentration
LD_{50}	Lethal dose (50 percent kill)
LD_{Lo}	Lowest published lethal dose
LFL	Lower Flammable Limit
MITI	Ministry of International Trade & Industry
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
NORM	Naturally Occurring Radioactive Materials
NTP	National Toxicology Program
OEL	Occupational Exposure Limit
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
PIN	Product Identification Number
PSN	Proper Shipping Name
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
STEL	Short Term Exposure Limit
TCLP	Toxic Chemicals Leachate Program
TDG	Transportation of Dangerous Goods
TLV	Threshold Limit Value
TSCA	Toxic Substance Control Act
TWA	Time Weighted Average
UFL	Upper Flammable Limit
WHMIS	Workplace Hazardous Materials Information System
atm	atmosphere
cm	centimeter
g, gm	gram
in	inch
kg	kilogram
lb	pound
m	meter
mg	milligram
ml, ML	milliliter
mm	millimeter
mppcf	million particles per cubic foot
n.o.s.	not otherwise specified
ppb	parts per billion
ppm	parts per million
psia	pounds per square inch absolute
u	micron
ug	microgram

INFORMATION HEREIN IS GIVEN IN GOOD FAITH AS AUTHORITATIVE AND VALID; HOWEVER, NO WARRANTY, EXPRESS OR IMPLIED, CAN BE MADE.

This is the end of MSDS # 1147

COBALT-BASED ALLOYS

⚠ WARNING

Physical Hazards: Non-combustible as supplied. Dust and fines from processing may be ignitable. Explosion/fire hazards may be present when (1) molten metal is in contact with water or moisture or (2) heavily concentrated dust clouds are dispersed in air.

Health Hazards: Health effects generally expected in cases of overexposures:

EYES: Dust or fume from processing: Can cause irritation.

SKIN: Dust or fume from processing: Can cause irritation, sensitization and allergic contact dermatitis.

INHALATION: Health effects from mechanical processing (e.g., cutting, grinding): Can cause upper respiratory tract irritation. **Chronic overexposures:** Can cause asthma, respiratory sensitization, scarring of the lungs (pulmonary fibrosis), central nervous system damage, secondary Parkinson's disease and reproductive harm in males. Additional health effects from elevated temperature processing (e.g., welding, melting): **Acute overexposures:** Can cause nausea, fever, chills, shortness of breath and malaise (metal fume fever). **Chronic overexposures:** Can cause the accumulation of fluid in the lungs (pulmonary edema) and lung cancer.

WARNING: Cobalt metal powder, Chromium (hexavalent compounds) and nickel (metallic) and nickel compounds are chemicals known to the State of California to cause cancer (Proposition 65).

Precautions: Avoid generating dust. Use with adequate ventilation. Keep material dry. Use appropriate personal protective equipment (safety glasses/gloves) to avoid injury. Use appropriate NIOSH approved respiratory protection (N95) if concentrations exceed the permissible limits.

First Aid (dust or fume from processing): EYES: Flush eyes with plenty of water or saline for at least 15 minutes. Consult a physician. SKIN: Wash skin with soap and water for at least 15 minutes. Consult a physician if irritation persists. INHALATION: Remove to fresh air. If unconscious or severely injured, check for clear airway, breathing and presence of pulse. Perform CPR if there is no pulse or respiration. Consult a physician.

In case of fire: Use a Class D agent, fluxing salts, graphite or dry sand on dust or fine fires. Otherwise, use fire fighting methods and materials that are appropriate for surrounding fire. Do NOT use water around molten metal. This will react with the burning material.

Read Alcoa Material Safety Data Sheet No. 1147 for more information about use and disposal.

Emergency Phone: (412) 553-4001.

INGREDIENTS:	CAS No:	INGREDIENTS:	CAS No:
Cobalt	(7440-48-4)	Vanadium	(7440-62-2)
Chromium	(7440-47-3)	Manganese	(7439-96-5)
Nickel	(7440-02-0)	Aluminum	(7429-90-5)
Tungsten	(7440-33-7)	Niobium	(7440-03-1)
Iron	(7439-89-6)	Silicon	(7440-21-3)
Molybdenum	(7439-98-7)	Carbon	(7440-44-0)
Tantalum	(7440-25-7)		

Alcoa Inc.
201 Isabella Street, Pittsburgh, PA 15212-5858 USA

ALCOA

4/08 1147

```
ERROR: undefined
OFFENDING COMMAND: get

STACK:

/quit
-dictionary-
-mark-
```

SAFETY DATA SHEET

Version 4.8
Revision Date 12/01/2015
Print Date 05/13/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Cumene

Product Number : 36698
Brand : Sigma-Aldrich
Index-No. : 601-024-00-X

CAS-No. : 98-82-8

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 3), H226
Carcinogenicity (Category 2), H351
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Aspiration hazard (Category 1), H304
Acute aquatic toxicity (Category 2), H401
Chronic aquatic toxicity (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H226 Flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P201 Obtain special instructions before use.

P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P331	Do NOT induce vomiting.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

May form explosive peroxides.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	:	Isopropylbenzene
Formula	:	C_9H_{12}
Molecular weight	:	120.19 g/mol
CAS-No.	:	98-82-8
EC-No.	:	202-704-5
Index-No.	:	601-024-00-X

Hazardous components

Component	Classification	Concentration
Cumene		
	Flam. Liq. 3; Carc. 2; STOT SE 3; Asp. Tox. 1; Aquatic Acute 2; Aquatic Chronic 2; H226, H304, H335, H351, H411	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

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

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

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

In case of eye contact
Flush eyes with water as a precaution.

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Cumene	98-82-8	TWA	50.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Central Nervous System impairment Upper Respiratory Tract irritation Eye irritation Skin irritation		
		TWA	50.000000 ppm 245.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Potential for dermal absorption		
		TWA	50.000000 ppm 245.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Skin designation The value in mg/m3 is approximate.		

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 30 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid, clear Colour: colourless
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -96 °C (-141 °F) - lit.
f)	Initial boiling point and boiling range	152 - 154 °C (306 - 309 °F) - lit.
g)	Flash point	31.0 °C (87.8 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 6.5 %(V) Lower explosion limit: 0.9 %(V)
k)	Vapour pressure	10.7 hPa (8.0 mmHg) at 20.0 °C (68.0 °F)
l)	Vapour density	No data available
m)	Relative density	0.864 g/cm3 at 25 °C (77 °F)
n)	Water solubility	0.06 g/l at 25 °C (77 °F) - slightly soluble
o)	Partition coefficient: n-octanol/water	log Pow: 3.55 at 23 °C (73 °F)
p)	Auto-ignition temperature	425.0 °C (797.0 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

Surface tension	27.69 mN/m at 25 °C (77 °F)

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.
Test for peroxide formation before distillation or evaporation. Test for peroxide formation or discard after 1 year.

10.3 Possibility of hazardous reactions
Vapours may form explosive mixture with air.

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - male - 2,260 mg/kg

Inhalation: No data available

Dermal: No data available

NOAEL Feed - Rat - male - > 535.8 mg/kg

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: No eye irritation
(OECD Test Guideline 405)

Respiratory or skin sensitisation
- Guinea pig
Result: Did not cause sensitisation on laboratory animals.
(OECD Test Guideline 406)

Germ cell mutagenicity
in vitro assay
S. typhimurium
Result: negative

Mutagenicity (micronucleus test)
Mouse - male and female
Result: negative

Carcinogenicity

IARC:	2B - Group 2B: Possibly carcinogenic to humans (Cumene)
NTP:	Reasonably anticipated to be a human carcinogen (Cumene)
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
May be fatal if swallowed and enters airways.

Additional Information
RTECS: GR8575000

narcosis, Central nervous system depression, Dermatitis, Gastrointestinal disturbance, Damage to the lungs., Liver injury may occur., Kidney injury may occur.

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 4.8 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia (water flea) - 2.14 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	EC50 - Pseudokirchneriella subcapitata (green algae) - 2.60 mg/l - 72 h

12.2 Persistence and degradability

Biodegradability Result: - According to the results of tests of biodegradability this product is not readily biodegradable.

No data available

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1918 Class: 3 Packing group: III
Proper shipping name: Isopropylbenzene
Reportable Quantity (RQ): 5000 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1918 Class: 3 Packing group: III EMS-No: F-E, S-E
Proper shipping name: ISOPROPYLBENZENE
Marine pollutant:yes
IATA

UN number: 1918 Class: 3 Packing group: III
Proper shipping name: Isopropylbenzene

15. REGULATORY INFORMATION

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

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Cumene	98-82-8	2007-07-01

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Cumene	98-82-8	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Cumene	98-82-8	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Cumene	98-82-8	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Cumene	98-82-8	2010-06-11

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Asp. Tox.	Aspiration hazard
Carc.	Carcinogenicity
Flam. Liq.	Flammable liquids
H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
H401	Toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.8 Revision Date: 12/01/2015 Print Date: 05/13/2016

Click **http://www.guidechem.com/cas-57/57-12-5.html** for suppliers of this product

Cyanide (cas 57-12-5) MSDS

MSDS : Cyanide

CAS : 57-12-5

SYNONYMS : * Carbon nitride ion (CN(sup 1-))

* Cyanide(1-)

* Cyanide, dry (UN1588)

* Cyanide anion

* Cyanide (CN(sup 1-))

* Cyanide ion

* Cyanide(1-) ion

* Cyanure

* Isocyanide

* RCRA waste number P030

Catalog of Chemical Suppliers, Buyers, Custom Synthesis Companies And Equipment Manufacturers
[Cyanide 57-12-5]

*** CHEMICAL IDENTIFICATION ***

RTECS NUMBER : GS7175000

CHEMICAL NAME : Cyanide

CAS REGISTRY NUMBER : 57-12-5

BEILSTEIN REFERENCE NO. : 1900509

LAST UPDATED : 199710

DATA ITEMS CITED : 31

MOLECULAR FORMULA : C-N

MOLECULAR WEIGHT : 26.02

WISWESSER LINE NOTATION : H CN

SYNONYMS/TRADE NAMES :

* Carbon nitride ion (CN(sup 1-))

* Cyanide(1-)

* Cyanide, dry (UN1588)

* Cyanide anion

* Cyanide (CN(sup 1-))

* Cyanide ion

* Cyanide(1-) ion

* Cyanure

* Isocyanide

* RCRA waste number P030

*** HEALTH HAZARD DATA ***

** ACUTE TOXICITY DATA **

TYPE OF TEST : LD50 - Lethal dose, 50 percent kill

ROUTE OF EXPOSURE : Intraperitoneal

SPECIES OBSERVED : Rodent - mouse

DOSE/DURATION : 3 mg/kg

TOXIC EFFECTS :

Behavioral - tremor

Behavioral - convulsions or effect on seizure threshold

Lungs, Thorax, or Respiration - dyspnea

REFERENCE :

NATUAS Nature. (Nature Subscription Dept., POB 1018, Manasguan, NJ 08736) V.1- 1869- Volume(issue)/page/year: 228,1315,1970

*** REVIEWS ***

TOXICOLOGY REVIEW

CLCHAU Clinical Chemistry (Winston-Salem, NC). (American Assoc. for Clinical Chemistry, 1725 K St., NW, Washington, DC 20006) V.1- 1955- Volume(issue)/page/year: 19,361,1973

*** U.S. STANDARDS AND REGULATIONS ***

MSHA STANDARD-air:TWA 5 mg/m3 (skin)

DTLVS* The Threshold Limit Values (TLVs) and Biological Exposure Indices (BEIs) booklet issues by American Conference of Governmental Industrial Hygienists (ACGIH), Cincinnati, OH, 1996 Volume(issue)/page/year: 3,64,1971

OSHA PEL (Gen Indu):8H TWA 5 mg(CN)/m3

CFRGBR Code of Federal Regulations. (U.S. Government Printing Office, Supt. of Documents, Washington, DC 20402) Volume(issue)/page/year: 29,1910.1000,1994

OSHA PEL (Construc):8H TWA 5 mg(CN)/m3

CFRGBR Code of Federal Regulations. (U.S. Government Printing Office, Supt. of Documents, Washington, DC 20402) Volume(issue)/page/year: 29,1926.55,1994

OSHA PEL (Shipyard):8H TWA 5 mg(CN)/m3

CFRGBR Code of Federal Regulations. (U.S. Government Printing Office, Supt. of Documents, Washington, DC 20402) Volume(issue)/page/year: 29,1915.1000,1993

OSHA PEL (Fed Cont):8H TWA 5 mg(CN)/m3

CFRGBR Code of Federal Regulations. (U.S. Government Printing Office, Supt. of Documents, Washington, DC 20402) Volume(issue)/page/year: 41,50-204.50,1994

*** OCCUPATIONAL EXPOSURE LIMITS ***

OEL-ARAB Republic of Egypt:TWA 5 mg/m3;Skin JAN 1993

OEL-AUSTRALIA:TWA 5 mg/m3;Skin JAN 1993

OEL-AUSTRIA:TWA 5 mg/m3;Skin JAN 1993

OEL-DENMARK:TWA 5 mg/m3;Skin JAN 1993

OEL-FINLAND:TWA 5 mg/m3;STEL 10 mg/m3 JAN 1993

OEL-FRANCE:TWA 5 mg/m3;Skin JAN 1993

OEL-GERMANY:TWA 5 mg/m3;Skin JAN 1993

OEL-HUNGARY:TWA 0.3 mg/m3;STEL 0.6 mg/m3;Skin JAN 1993

OEL-INDIA:TWA 4 mg/m3;Skin JAN 1993

OEL-THE NETHERLANDS:TWA 5 mg/m3;Skin JAN 1993

OEL-THE PHILIPPINES:TWA 5 mg/m3;Skin JAN 1993

OEL-POLAND:TWA 0.3 mg/m3 JAN 1993

OEL-SWEDEN:STEL 5 mg/m3;Skin JAN 1993

OEL-SWITZERLAND:TWA 5 mg/m3;STEL 10 mg/m3;Skin JAN 1993

OEL-THAILAND:TWA 5 mg/m3 JAN 1993

OEL-UNITED KINGDOM:TWA 5 mg/m3;Skin JAN 1993

*** NIOSH STANDARDS DEVELOPMENT AND SURVEILLANCE DATA ***

NIOSH RECOMMENDED EXPOSURE LEVEL (REL) :

NIOSH REL TO CYANIDE-air:CL 4.7 ppm(CN)/10M

REFERENCE :

NIOSH* National Institute for Occupational Safety and Health, U.S. Dept. of Health, Education, and Welfare, Reports and Memoranda.

Volume(issue)/page/year: DHHS #92-100,1992

NIOSH OCCUPATIONAL EXPOSURE SURVEY DATA :

NOES - National Occupational Exposure Survey (1983)

NOES Hazard Code - X3010

No. of Facilities: 8 (estimated)

No. of Industries: 1

No. of Occupations: 1

No. of Employees: 367 (estimated)

No. of Female Employees: 120 (estimated)

*** STATUS IN U.S. ***

ATSDR TOXICOLOGY PROFILE

NTIS** National Technical Information Service. (Springfield, VA 22161)

Formerly U.S. Clearinghouse for Scientific & Technical Information.

Volume(issue)/page/year: PB/90/162058/AS

EPA TSCA Section 8(b) CHEMICAL INVENTORY

EPA TSCA Section 8(d) unpublished health/safety studies

On EPA IRIS database

EPA TSCA TEST SUBMISSION (TSCATS) DATA BASE, JUNE 1998

OSHA ANALYTICAL METHOD #ID-120

*** END OF RECORD ***

SAFETY DATA SHEET

Version 5.8
Revision Date 03/07/2015
Print Date 02/23/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Cyclohexane

Product Number : 320633
Brand : Aldrich
Index-No. : 601-017-00-1

CAS-No. : 110-82-7

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2), H225
Skin irritation (Category 2), H315
Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336
Aspiration hazard (Category 1), H304
Acute aquatic toxicity (Category 1), H400

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H225 Highly flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H336 May cause drowsiness or dizziness.
H400 Very toxic to aquatic life.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.

P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ eye protection/ face protection.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P312	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P331	Do NOT induce vomiting.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	C_6H_{12}
Molecular weight	:	84.16 g/mol
CAS-No.	:	110-82-7
EC-No.	:	203-806-2
Index-No.	:	601-017-00-1

Hazardous components

Component	Classification	Concentration
Cyclohexane		
	Flam. Liq. 2; Skin Irrit. 2; STOT SE 3; Asp. Tox. 1; Aquatic Acute 1; H225, H304, H315, H336, H400	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

In case of eye contact
Flush eyes with water as a precaution.

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Use explosion-proof equipment.Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Cyclohexane	110-82-7	TWA	100.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Central Nervous System impairment		
		TWA	300.000000 ppm 1,050.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	300.000000 ppm 1,050.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 480 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 35 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid Colour: colourless
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 4 - 7 °C (39 - 45 °F) - lit.
f)	Initial boiling point and boiling range	80.7 °C (177.3 °F) - lit.
g)	Flash point	-17.99 °C (-0.38 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 9 %(V) Lower explosion limit: 1 %(V)
k)	Vapour pressure	225.0 hPa (168.8 mmHg) at 37.7 °C (99.9 °F) 102.7 hPa (77.0 mmHg) at 20.0 °C (68.0 °F)
l)	Vapour density	No data available
m)	Relative density	0.779 g/cm3 at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	log Pow: 3.44
p)	Auto-ignition temperature	260.0 °C (500.0 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Vapours may form explosive mixture with air.

10.4 Conditions to avoid

Heat, flames and sparks.

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 12,705 mg/kg

LC50 Inhalation - Rat - 4 h - 34,000 mg/l
(OECD Test Guideline 403)

LD50 Dermal - Rabbit - > 2,000 mg/kg

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Mild eye irritation

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

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

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
May be fatal if swallowed and enters airways.

Additional Information
RTECS: GU6300000

Central nervous system depression, Drowsiness, Irritability, Dizziness, Gastrointestinal disturbance, Lung irritation, chest pain, pulmonary edema

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	flow-through test LC50 - Pimephales promelas (fathead minnow) - 4.53 mg/l -

	96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	Immobilization EC50 - Daphnia magna (Water flea) - 0.9 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	EC50 - Pseudokirchneriella subcapitata (green algae) - 3.4 mg/l - 72 h (OECD Test Guideline 201)

12.2 Persistence and degradability

Biodegradability Result: - Readily biodegradable

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 1145 Class: 3 Packing group: II
Proper shipping name: Cyclohexane
Reportable Quantity (RQ): 1000 lbs

Poison Inhalation Hazard: No

IMDG

UN number: 1145 Class: 3 Packing group: II EMS-No: F-E, S-D
Proper shipping name: CYCLOHEXANE
Marine pollutant:yes

IATA

UN number: 1145 Class: 3 Packing group: II
Proper shipping name: Cyclohexane

15. REGULATORY INFORMATION

SARA 302 Components

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

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Cyclohexane	110-82-7	2007-07-01

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Cyclohexane	110-82-7	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Cyclohexane	110-82-7	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Cyclohexane	110-82-7	2007-07-01

California Prop. 65 Components

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

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Asp. Tox.	Aspiration hazard
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H400	Very toxic to aquatic life.
Skin Irrit.	Skin irritation
STOT SE	Specific target organ toxicity - single exposure

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.8 Revision Date: 03/07/2015 Print Date: 02/23/2016

Safety data for dibenz(a,h)anthracene

Glossary of terms on this data sheet.

The information on this web page is provided to help you to work safely, but it is intended to be an overview of hazards, not a replacement for a full Material Safety Data Sheet (MSDS). MSDS forms can be downloaded from the web sites of many chemical suppliers.

General

Synonyms: 1,2:5,6-benzanthracene, 1,2:5,6-dibenzanthracene, dibenzo(a,h) anthracene, DBA, 1,2,5,6-DBA
Use: a common pollutant in smoke and used oils
Molecular formula: $C_{22}H_{14}$
CAS No: 53-70-3
EINECS No: 200-181-8
Annex I Index. No: 601-041-00-2

Physical data

Appearance: white to light yellow crystalline solid
Melting point: 266 - 267 C
Boiling point: 524 C
Vapour density:
Vapour pressure:
Density (g cm^{-3}): 1.28
Flash point:
Explosion limits:
Autoignition temperature:
Water solubility:

Stability

Stable. Combustible. Incompatible with strong oxidizing agents.

Toxicology

Harmful if swallowed or inhaled. Experimental carcinogen, tumorigen and neoplastigen. IARC probable human carcinogen.

Toxicity data

(The meaning of any toxicological abbreviations which appear in this section is given here.)

IVN-MUS LDLO 10 mg kg^{-1}

Risk phrases

(The meaning of any risk phrases which appear in this section is given here.)

R45 R50 R53.

Environmental information

Harmful in the environment - may cause long-term damage.

Transport information

(The meaning of any UN hazard codes which appear in this section is given here.)

Non-hazardous for air, sea and road freight.

Personal protection

Safety glasses, gloves, good ventilation. Handle as a possible carcinogen.

Safety phrases

(The meaning of any safety phrases which appear in this section is given here.)

S45 S53 S60 S61.

[Return to Physical & Theoretical Chemistry Lab. Safety home page.]

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SAFETY DATA SHEET

Version 3.7
Revision Date 11/25/2014
Print Date 01/29/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Dibenzofuran

Product Number : 236373
Brand : Aldrich

CAS-No. : 132-64-9

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 4), H302
Acute aquatic toxicity (Category 2), H401
Chronic aquatic toxicity (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H302 Harmful if swallowed.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
P391 Collect spillage.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms : Diphenylene oxide

Formula : $C_{12}H_8O$
Molecular weight : 168.19 g/mol
CAS-No. : 132-64-9
EC-No. : 205-071-3

Hazardous components

Component	Classification	Concentration
Dibenzofuran		
	Acute Tox. 4; Aquatic Acute 2; Aquatic Chronic 2; H302, H411	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Avoid breathing dust.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): Non Combustible Solids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an

industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator.For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: crystalline Colour: white, beige
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 80 - 82 °C (176 - 180 °F) - lit.
f)	Initial boiling point and boiling range	154 - 155 °C (309 - 311 °F) at 27 hPa (20 mmHg) - lit.
g)	Flash point	130.0 °C (266.0 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	No data available
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	log Pow: 3.77
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
The preceding data, or interpretation of data, was determined using Quantitative Structure Activity Relationship (QSAR) modeling.

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

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

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: HP4430000

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

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	NOEC - Cyprinodon variegatus (sheepshead minnow) - 1 mg/l - 96.0 h
	LC50 - Pimephales promelas (fathead minnow) - 1.05 mg/l - 96.0 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Dibenzofuran)
Reportable Quantity (RQ): 100 lbs
Marine pollutant:yes
Poison Inhalation Hazard: No

IMDG
UN number: 3077 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Dibenzofuran)
Marine pollutant:yes

IATA
UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, solid, n.o.s. (Dibenzofuran)

15. REGULATORY INFORMATION

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

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date

Dibenzofuran	132-64-9	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Dibenzofuran	132-64-9	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Dibenzofuran	132-64-9	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Dibenzofuran	132-64-9	2007-07-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
H302	Harmful if swallowed.
H401	Toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

HMIS Rating

Health hazard:	1
Chronic Health Hazard:	
Flammability:	1
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	1
Reactivity Hazard:	0

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

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 3.7 Revision Date: 11/25/2014 Print Date: 01/29/2016

SAFETY DATA SHEET

Version 3.11
Revision Date 03/03/2015
Print Date 05/01/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Dibutyl phthalate

Product Number : 152439
Brand : Aldrich
Index-No. : 607-318-00-4

CAS-No. : 84-74-2

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Reproductive toxicity (Category 1B), H360
Acute aquatic toxicity (Category 1), H400

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H360 May damage fertility or the unborn child.
H400 Very toxic to aquatic life.

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P273 Avoid release to the environment.
P281 Use personal protective equipment as required.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.
P391 Collect spillage.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	:	n-Butyl phthalate Phthalic acid dibutyl ester DBP
Formula	:	$C_{16}H_{22}O_4$
Molecular weight	:	278.34 g/mol
CAS-No.	:	84-74-2
EC-No.	:	201-557-4
Index-No.	:	607-318-00-4
Registration number	:	01-2119493042-44-XXXX

Hazardous components

Component	Classification	Concentration
Dibutyl phthalate Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)		
	Repr. 1B; Aquatic Acute 1; H360, H400	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
For personal protection see section 8.

6.2 Environmental precautions

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

6.3 Methods and materials for containment and cleaning up

Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Dibutyl phthalate	84-74-2	TWA	5.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract irritation Eye irritation Testicular damage		
		TWA	5 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Eye irritation Testicular damage		
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5.000000 mg/m3	USA. NIOSH Recommended Exposure Limits

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 480 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

Splash contact
Material: Nature latex/chloroprene
Minimum layer thickness: 0.6 mm
Break through time: 120 min
Material tested:Lapren® (KCL 706 / Aldrich Z677558, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid, clear Colour: colourless
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -35 °C (-31 °F) - lit.
f)	Initial boiling point and boiling range	340 °C (644 °F) - lit.
g)	Flash point	171.0 °C (339.8 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower	Lower explosion limit: 0.47 %(V)

	flammability or explosive limits	
k)	Vapour pressure	1.3 hPa (1.0 mmHg) at 147.0 °C (296.6 °F)
l)	Vapour density	No data available
m)	Relative density	1.043 g/cm3 at 25 °C (77 °F)
n)	Water solubility	0.0114 g/l at 25 °C (77 °F) - OECD Test Guideline 105 - slightly soluble
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	402.0 °C (755.6 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	18.8 mm2/s at 20 °C (68 °F) -
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing agents, Nitrates, Bases, acids, Chlorine

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 8,000 mg/kg

LC50 Inhalation - Rat - 4,250 mg/m3

LD50 Dermal - Rabbit - > 20,860 mg/kg

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: No eye irritation
(OECD Test Guideline 405)

Respiratory or skin sensitisation
Maximisation Test (GPMT) - Guinea pig
Result: Does not cause skin sensitisation.
(OECD Test Guideline 406)

Germ cell mutagenicity
No data available

Carcinogenicity

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

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
Presumed human reproductive toxicant

Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: TI0875000

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

Central nervous system -

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 0.85 mg/l - 96.0 h
	NOEC - Pimephales promelas (fathead minnow) - 0.32 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates	LC50 - Daphnia magna (Water flea) - 3.7 mg/l - 48 h

12.2 Persistence and degradability

Biodegradability	Result: 81 % - Readily biodegradable (C.4-C of the COUNCIL REGULATION (EC) No 440/2008)

12.3 Bioaccumulative potential

Bioaccumulation	Pimephales promelas (fathead minnow) - 11 d - 0.0348 mg/l Bioconcentration factor (BCF): 2,165 Remarks: Does not bioaccumulate.

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life.

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 3082 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (Dibutyl phthalate)
Reportable Quantity (RQ): 10 lbs
Marine pollutant:yes
Poison Inhalation Hazard: No

IMDG

UN number: 3082 Class: 9 Packing group: III EMS-No: F-A, S-F
Proper shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Dibutyl phthalate)
Marine pollutant:yes

IATA

UN number: 3082 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (Dibutyl phthalate)

15. REGULATORY INFORMATION

SARA 302 Components

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

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Dibutyl phthalate	84-74-2	2007-07-01

SARA 311/312 Hazards

Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Dibutyl phthalate	84-74-2	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Dibutyl phthalate	84-74-2	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Dibutyl phthalate	84-74-2	2007-07-01

California Prop. 65 Components

	CAS-No.	Revision Date
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.	84-74-2	2008-06-17
Dibutyl phthalate		

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
H360	May damage fertility or the unborn child.
H400	Very toxic to aquatic life.
Repr.	Reproductive toxicity

HMIS Rating

Health hazard:	1
Chronic Health Hazard:	*
Flammability:	1
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	1
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 3.11 Revision Date: 03/03/2015 Print Date: 05/01/2016

SAFETY DATA SHEET

Halocarbon R-12 (Dichlorodifluoromethane)

Section 1. Identification

GHS product identifier : Halocarbon R-12 (Dichlorodifluoromethane)

Chemical name : dichlorodifluoromethane

Other means of identification : ASPEN R-12, Methane, dichlorodifluoro-; Refrigerant 12; Propellant 12; Halon 122; Genetron 12; Freon 12; Fluorocarbon 12; Difluorodichloromethane; DICHLORODIFLUOROMETHANE (FC 12); CFC-12

Product use : Synthetic/Analytical chemistry.

Synonym : ASPEN R-12, Methane, dichlorodifluoro-; Refrigerant 12; Propellant 12; Halon 122; Genetron 12; Freon 12; Fluorocarbon 12; Difluorodichloromethane; DICHLORODIFLUOROMETHANE (FC 12); CFC-12

SDS # : 001018

Supplier's details : Airgas USA, LLC and its affiliates
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

Emergency telephone number (with hours of operation) : 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : GASES UNDER PRESSURE - Liquefied gas
HAZARDOUS TO THE OZONE LAYER - Category 1

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : Contains gas under pressure; may explode if heated.
May cause frostbite.
May displace oxygen and cause rapid suffocation.
Harms public health and the environment by destroying ozone in the upper atmosphere.

Precautionary statements

General : Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction. Always keep container in upright position.

Prevention : Use and store only outdoors or in a well ventilated place.

Response : Not applicable.

Storage : Protect from sunlight. Protect from sunlight when ambient temperature exceeds 52°C/125°F. Store in a well-ventilated place.

Disposal : Refer to manufacturer/supplier for information on recovery/recycling.

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Section 2. Hazards identification

Hazards not otherwise classified : Liquid can cause burns similar to frostbite.

Section 3. Composition/information on ingredients

Substance/mixture : Substance

Chemical name : dichlorodifluoromethane

Other means of identification : ASPEN R-12, Methane, dichlorodifluoro-; Refrigerant 12; Propellant 12; Halon 122; Genetron 12; Freon 12; Fluorocarbon 12; Difluorodichloromethane; DICHLORODIFLUOROMETHANE (FC 12); CFC-12

CAS number/other identifiers

CAS number : 75-71-8

Product code : 001018

Ingredient name	%	CAS number
Methane, dichlorodifluoro-	100	75-71-8

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. In case of contact with liquid, warm frozen tissues slowly with lukewarm water and get medical attention. Do not rub affected area. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if adverse health effects persist or are severe. Ingestion of liquid can cause burns similar to frostbite. If frostbite occurs, get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. As this product rapidly becomes a gas when released, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Liquid can cause burns similar to frostbite.

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

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Section 4. First aid measures

Skin contact : Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Ingestion : Ingestion of liquid can cause burns similar to frostbite.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
frostbite

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
frostbite

Ingestion : Adverse symptoms may include the following:
frostbite

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
halogenated compounds
carbonyl halides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. For incidents involving large quantities, thermally insulated undergarments and thick textile or leather gloves should be worn.

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Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). May be harmful to the environment if released in large quantities.

Methods and materials for containment and cleaning up

Small spill : Immediately contact emergency personnel. Stop leak if without risk.

Large spill : Immediately contact emergency personnel. Stop leak if without risk. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Do not get in eyes or on skin or clothing. Avoid breathing gas. Avoid release to the environment. Refer to special instructions/safety data sheet. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

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Section 8. Exposure controls/personal protection

Ingredient name	Exposure limits
Methane, dichlorodifluoro-	**ACGIH TLV (United States, 3/2012).** TWA: 4950 mg/m³ 8 hours. TWA: 1000 ppm 8 hours. **NIOSH REL (United States, 1/2013).** TWA: 4950 mg/m³ 10 hours. TWA: 1000 ppm 10 hours. **OSHA PEL (United States, 6/2010).** TWA: 4950 mg/m³ 8 hours. TWA: 1000 ppm 8 hours. **OSHA PEL 1989 (United States, 3/1989).** TWA: 4950 mg/m³ 8 hours. TWA: 1000 ppm 8 hours.

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. If contact with the liquid is possible, insulated gloves suitable for low temperatures should be worn. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

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Section 9. Physical and chemical properties

Appearance

Physical state : Gas. [Liquefied gas]

Color : Colorless.

Molecular weight : 120.91 g/mole

Molecular formula : C-Cl2-F2

Boiling/condensation point : -29.8°C (-21.6°F)

Melting/freezing point : -158°C (-252.4°F)

Critical temperature : 111.85°C (233.3°F)

Odor : Characteristic.

Odor threshold : Not available.

pH : Not available.

Flash point : [Product does not sustain combustion.]

Burning time : Not applicable.

Burning rate : Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : 84.9 (psia)

Vapor density : 4.2 (Air = 1)

Specific Volume (ft^3/lb) : 3.1746

Gas Density (lb/ft^3) : 0.315

Relative density : Not applicable.

Solubility : Not available.

Solubility in water : 0.3 g/l

Partition coefficient: n-octanol/water : 2.16

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

SADT : Not available.

Viscosity : Not applicable.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

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Section 10. Stability and reactivity

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Liquid can cause burns similar to frostbite.

Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

Skin contact : Dermal contact with rapidly evaporating liquid could result in freezing of the tissues or frostbite.

Ingestion : Ingestion of liquid can cause burns similar to frostbite.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
frostbite

Inhalation : No specific data.

Skin contact : Adverse symptoms may include the following:
frostbite

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Section 11. Toxicological information

Ingestion : Adverse symptoms may include the following:
frostbite

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Methane, dichlorodifluoro-	2.16	6.17	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

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Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

United States - RCRA Toxic hazardous waste "U" List

Ingredient	CAS #	Status	Reference number
Dichlorodifluoromethane; Methane, dichlorodifluoro-	75-71-8	Listed	U075

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1028	UN1028	UN1028	UN1028	UN1028
UN proper shipping name	DICHLORODIFLUOROMETHANE OR REFRIGERANT GAS R 12	DICHLORODIFLUOROMETHANE; OR REFRIGERANT GAS R 12	DICHLORODIFLUOROMETHANE OR REFRIGERANT GAS R 12	DICHLORODIFLUOROMETHANE (REFRIGERANT GAS R 12)	DICHLORODIFLUOROMETHANE
Transport hazard class(es)	2.2	2.2	2.2	2.2	2.2
Packing group	-	-	-	-	-
Environment	No.	No.	No.	No.	No.
Additional information	**Reportable quantity** 5000 lbs / 2270 kg Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements. **Limited quantity** Yes. **Packaging instruction** **Passenger aircraft** Quantity limitation: 75 kg **Cargo aircraft** Quantity limitation: 150 kg **Special provisions** T50	**Explosive Limit and Limited Quantity Index** 0.125 **Passenger Carrying Road or Rail Index** 75	-	-	**Passenger and Cargo Aircraft** Quantity limitation: 75 kg **Cargo Aircraft Only** Quantity limitation: 150 kg

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

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Section 14. Transport information

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined

TSCA 12(b) annual export notification: dichlorodifluoromethane

United States inventory (TSCA 8b): This material is listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Sudden release of pressure

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Methane, dichlorodifluoro-	100	No.	Yes.	No.	No.	No.

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	dichlorodifluoromethane	75-71-8	100
Supplier notification	dichlorodifluoromethane	75-71-8	100

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : This material is listed.

New York : This material is listed.

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Section 15. Regulatory information

New Jersey : This material is listed.

Pennsylvania : This material is listed.

Canada inventory : This material is listed or exempted.

International regulations

International lists : **Australia inventory (AICS)**: This material is listed or exempted.
China inventory (IECSC): This material is listed or exempted.
Japan inventory: This material is listed or exempted.
Korea inventory: This material is listed or exempted.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): This material is listed or exempted.
Philippines inventory (PICCS): This material is listed or exempted.
Taiwan inventory (CSNN): Not determined.

Chemical Weapons Convention List Schedule I Chemicals : Not listed

Chemical Weapons Convention List Schedule II Chemicals : Not listed

Chemical Weapons Convention List Schedule III Chemicals : Not listed

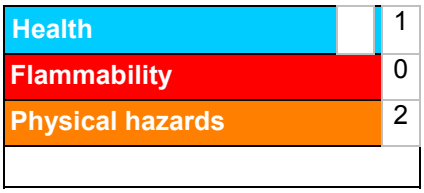
Canada

WHMIS (Canada) : Class A: Compressed gas.
CEPA Toxic substances: This material is listed.
Canadian ARET: This material is not listed.
Canadian NPRI: This material is listed.
Alberta Designated Substances: This material is not listed.
Ontario Designated Substances: This material is not listed.
Quebec Designated Substances: This material is not listed.

Section 16. Other information

Canada Label requirements : Class A: Compressed gas.

Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

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Section 16. Other information

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of printing : 5/21/2015.

Date of issue/Date of revision : 5/21/2015.

Date of previous issue : 5/21/2015.

Version : 2

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United NationsACGIH – American Conference of Governmental Industrial Hygienists
AIHA – American Industrial Hygiene Association
CAS – Chemical Abstract Services
CEPA – Canadian Environmental Protection Act
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act (EPA)
CFR – United States Code of Federal Regulations
CPR – Controlled Products Regulations
DSL – Domestic Substances List
GWP – Global Warming Potential
IARC – International Agency for Research on Cancer
ICAO – International Civil Aviation Organisation
Inh – Inhalation
LC – Lethal concentration
LD – Lethal dosage
NDSL – Non-Domestic Substances List
NIOSH – National Institute for Occupational Safety and Health
TDG – Canadian Transportation of Dangerous Goods Act and Regulations
TLV – Threshold Limit Value
TSCA – Toxic Substances Control Act
WEEL – Workplace Environmental Exposure Level
WHMIS – Canadian Workplace Hazardous Material Information System

References : Not available.

Indicates information that has changed from previously issued version.

Other special considerations : WARNING: Contains (Dichlorodifluoromethane), a substance which harms the public health and environment by destroying ozone in the upper atmosphere.

Notice to reader

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Section 16. Other information

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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MSDS SUMMARY SHEET

Manufacturer:
Name: PHILLIPS PETROLEUM COMPANY
Address 1:
Address 2:
Address 3:
CSZ: BARTLESVILLE **State:** OK **Zipcode:** 74004
Emergency phone: (800) 424-9300
Business phone: 800-762-0942

Product:

Ferndale MSDS#: 1354 **Version # :** 6
Manufacturer MSDS#: 0041
Current? : 2002
Name:

NO. 2 DIESEL FUEL

Synonyms:

CARB **Diesel** TF3
CARB **Diesel**
CARB **Diesel** 10%
Diesel Fuel Oil
EPA Low Sulfur **Diesel** Fuel
EPA Low Sulfur **Diesel** Fuel – Dyed
EPA Off Road High Sulfur **Diesel –** Dyed
Fuel Oil No. 2 – CAS # 68476-30-2
No. 2 **Diesel** Fuel Oil
No. 2 Fuel Oil – Non Hiway – Dyed
No. 2 High Sulfur **Diesel** – Dyed
No. 2 Low Sulfur **Diesel** - Dyed
No. 2 Low Sulfur **Diesel** - Undyed
Crude column 3rd IR
Crude column 3rd side cut
Atmospheric tower 3rd side cut
Ultra Low Sulfur **Diesel** No. 2
Finished **Diesel**
DHT Reactor Feed
Straight Run **Diesel**
Diesel
Middle Distillate

Product/Catalog Numbers:
MSDS Date: 01/01/2002 **(received:** 01/14/2002**)**

NFPA codes:
Health: 0 **Flammability:** 2 **Reactivity:** 0

MATERIAL SAFETY DATA SHEET
No. 2 Diesel Fuel

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: No. 2 Diesel Fuel
Product Code: Multiple
SAP Code:
Synonyms: 1354
CARB Diesel TF3
CARB Diesel
CARB Diesel 10%
Diesel Fuel Oil
EPA Low Sulfur Diesel Fuel
EPA Low Sulfur Diesel Fuel – Dyed
EPA Off Road High Sulfur Diesel – Dyed
Fuel Oil No. 2 – CAS # 68476-30-2
No. 2 Diesel Fuel Oil
No. 2 Fuel Oil – Non Hiway – Dyed
No. 2 High Sulfur Diesel – Dyed
No. 2 Low Sulfur Diesel - Dyed
No. 2 Low Sulfur Diesel – Undyed
No. 2 Ultra Low Sulfur Diesel – Dyed
No. 2 Ultra Low Sulfur Diesel - Undyed
Intended Use: Fuel
Chemical Family:
Responsible Party: Phillip's Petroleum Company
Bartlesville, Oklahoma 74004
For Additional MSDSs: 800-762-0942
Technical Information:

The intended use of this product is indicated above. If any additional use is known, please contact us at the Technical Information number listed.

EMERGENCY OVERVIEW

24 Hour Emergency Telephone Numbers:
Spill, Leak, Fire or Accident
Call CHEMTREC
North America: (800) 424-9300
Others: (703) 527-3887 (collect)

California Poison Control System: 800-356-3120

Health Hazards/Precautionary Measures: Causes severe skin irritation. Aspiration hazard if swallowed. Can enter lungs and cause damage. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Do not taste or swallow. Wash thoroughly after handling.

Physical Hazards/Precautionary Measures: Flammable liquid and vapor. Keep away from heat, sparks, flames, static electricity or other sources of ignition.

Appearance: Straw-colored to dyed red
Physical Form: Liquid
Odor: Characteristic petroleum

HFPA Hazard Class:
Health: 0 (Least)
Flammability: 2 (Moderate)
Reactivity: 0 (Least)

HMIS Hazard Class
Not Evaluated

2. COMPOSITION/INFORMATION ON INGREDIENTS

HAZARDOUS COMPONENTS	% VOLUME		EXPOSURE GUIDELINE	
		Limits	Agency	Type
Diesel Fuel No. 2 CAS# 68476-34-6	100	100* mg/m3	ACGIH	TWA-SKIN
Naphthalene CAS# 91-20-3	<1	10ppm	ACGIH	TWA
		15ppm	ACGIH	STEL
		10ppm	OSHA	TWA
		250ppm	NIOSH	IDLH

All components are listed on the TSCA inventory

Tosco Low Sulfur No. 2 Diesel meets the specifications of 40 CFR 60.41 for low sulfur diesel fuel.

Note: State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

*Proposed ACGIH (1999)

3. HAZARDS IDENTIFICATION

Potential Health Effects:

Eye: Contact may cause mild eye irritation including stinging, watering, and redness.

Skin: Severe skin irritant. Contact may cause redness, itching, burning, and severe skin damage. Prolonged or repeated contact can worsen irritation by causing drying and cracking of the skin, leading to dermatitis (inflammation). Not actually toxic by skin absorption, but prolonged or repeated skin contact may be harmful (see Section 11).

Inhalation (Breathing): No information available. Studies by other exposure routes suggest a low degree of toxicity by inhalation.

Ingestion (Swallowing): Low degree of toxicity by ingestion. ASPIRATION HAZARD – This material can enter lungs during swallowing or vomiting and cause lung inflammation and damage.

Signs and Symptoms: Effects of overexposure may include irritation of the nose and throat, irritation of the digestive tract, nausea, diarrhea and transient excitation followed by signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue).

Cancer: Possible skin cancer hazard (see Sections 11 and 14).

Target Organs: There is limited evidence from animal studies that overexposure may cause injury to the kidney (see Section 11).

Developmental: Inadequate data available for this material.

Pre-Existing Medical Conditions: Conditions aggravated by exposure may include skin disorders and kidney disorders.

4. FIRST AID MEASURES

Eye: If irritation or redness develops, move victim away from exposure and into fresh air. Flush eyes with clean water. If symptoms persist, seek medical attention.

Skin: Immediately remove contaminated shoes, clothing, and constrictive jewelry and flush affected area(s) with large amounts of water. If skin surface is damaged, apply a clean dressing and seek immediate medical attention. If skin surface is not damaged, cleanse affected area(s) thoroughly by washing with mild soap and water. If irritation or redness develops, seek immediate medical attention.

Inhalation (Breathing): If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention. If victim is not breathing, clear airway and immediately begin artificial respiration. If breathing difficulties develop, oxygen should be administered by qualified personnel. Seek immediate medical attention.

Ingestion (Swallowing): Aspiration hazard; Do not induce vomiting or give anything by mouth because this material can enter the lungs and cause severe lung damage. If victim is drowsy or unconscious and vomiting, place on the left side with the head down. If possible, do not leave victim unattended and observe closely for adequacy of breathing. Seek medical attention.

5. FIRE FIGHTING MEASURES

Flammable Properties:

Flash Point: >125°F/>52°
OSHA Flammability Class: Combustible liquid
LEL %: 0.3 / UEL %; 10.0
Autoignition Temperature: 500°F/260°C

Unusual Fire & Explosion Hazards: This material is flammable and can be ignited by heat, sparks, flames, or other sources of ignition (e.g., static electricity, pilot lights, or mechanical/electrical equipment, and electronic devices such as cell phones, computers, calculators, and pagers which have not been certified as intrinsically safe). Vapors may travel considerable distances to a source of ignition where they can ignite, flash back, or explode. May create vapor/air explosion hazard indoors, in confined spaces, outdoors, or in sewers. Vapors are heavier than air and can accumulate in low areas. If container is not properly cooled, it can rupture in the heat of a fire.

Extinguishing Media: Dry chemical, carbon dioxide, or foam is recommended. Water spray is recommended to cool or protect exposed materials or structures. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. Water may be ineffective for extinguishment, unless used under favorable conditions by experienced fire fighters.

Fire Fighting Instructions: For fires beyond the incipient stage, emergency responders in the immediate hazard area should wear bunker gear. When the potential chemical hazard is unknown, in enclosed or confined spaces, or when explicitly required by DOT, a self contained breathing apparatus should be worn. In addition, wear other appropriate protective equipment as conditions warrant (see Section 8).

Isolate immediate hazard area, keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Move undamaged containers from immediate hazard area if it can be done with minimal risk.

Water spray may be useful in minimizing or dispersing vapors and to protect personnel. Cool equipment exposed to fire with water, if it can be done with minimal risk. Avoid spreading burning liquid with water used for cooling purposes.

6. ACCIDENTAL RELEASE MEASURES

Flammable. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof equipment is recommended.

Stay upwind and away from spill/release. Notify persons down wind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Stop spill/release if it can be done with minimal risk. Wear appropriate protective equipment including respiratory protection as conditions warrant (see Section 8).

Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Dike far ahead of spill for later recovery or disposal. Use foam on spills to minimize vapors (see Section 5). Spilled material may be absorbed into an appropriate material.

Notify fire authorities and appropriate federal, state, and local agencies. Immediate cleanup of any spill is recommended. If spill of any amount is made into or upon navigable waters, the contiguous zone, or adjoining shorelines, notify the National Response Center (phone number 800-424-8802).

7. HANDLING AND STORAGE

Handling: Open container slowly to relieve any pressure. Bond and ground all equipment when transferring from one vessel to another. Can accumulate static charge by flow or agitation. Can be ignited by static discharged. The use of explosion-proof equipment is recommended and may be required (see appropriate fire codes). Refer to NFPA-704 and/or API RP 2003 for specific bonding/grounding requirements.

Do not enter confined spaces such as tanks or pits without following proper entry procedures such ASTM D-4276 and 29CFR 1910.146. The use of appropriate respiratory protection is advised when concentrations exceed any established exposure limits (see Sections 2 and 8).

Do not wear contaminated clothing or shoes. Keep contaminated clothing away from sources of ignition such as sparks or open flames. Use good personal hygiene practices.

High pressure injection of hydrocarbon fuels, hydraulic oils or greases under the skin may have serious consequences even though no symptoms or injury may be apparent. This can happen accidentally when using high pressure equipment such as high pressure grease guns, fuel injection apparatus or from pinhole leaks in tubing or high pressure hydraulic oil equipment.

“Empty” containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. “Empty” drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

Before working on or in tanks which contain or have contained this material, refer to OSHA regulations, ANSIZ49.1 and other references pertaining to cleaning, repairing, welding, or other contemplated operations.

Storage: Keep container(s) tightly closed. Use and store this material in cool, dry, well-ventilated areas away from heat, direct sunlight, hot metal surfaces, and all sources of ignition. Post area “No Smoking or Open Flame.” Store only in approved containers. Keep away from incompatible material (see Section 10). Protect container(s) against physical damage. Outdoor or detached storage is preferred. Indoor storage should meet OSHA standards and appropriate fire codes.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering controls: If current ventilation practices are not adequate to maintain airborne concentration below the established exposure limits (see Section 2), additional ventilation or exhaust systems may be required. Where explosive mixtures may be present, electrical systems safe for such locations must be used (see appropriate electrical codes).

Personal Protective Equipment (PPE):

Respiratory: A NIOSH certified air purifying respirator with an organic vapor cartridge maybe used under conditions where airborne concentrations are expected to exceed exposure limits (see Section 2).

Protection provided by air purifying respirators is limited (see manufacturer's respirator selection guide). Use a positive pressure air supplied respirator if there is a potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrants a respirator's use.

Skin: The use of gloves impervious to the specific material handled is advised to prevent skin contact, possible irritation and skin damage (see glove manufacturer literature for information on permeability). Depending on conditions of use, apron and/or arm covers may be necessary.

Eyes/Face: Approved eye protection to safeguard against potential eye contact, irritation, or injury is recommended. Depending on conditions of use, a face shield may be necessary.

Other Protective Equipment: Eye wash and quick-drench shower facilities should be available in the work area. Thoroughly clean shoes and wash contaminated clothing before reuse. It is recommended that impervious clothing be worn when skin contact is possible.

9. PHYSICAL AND CHEMICAL PROPERTIES

Note: Unless otherwise stated, values are determined at 20°C (68°F) and 760 mm Hg (1atm).

Appearance: Straw-colored to dyed red
Physical State: Liquid
Odor: Characteristic petroleum
pH: unavailable
Vapor Pressure (mm Hg): 0.40
Vapor Densisty (air=1):>3
Boiling Point/Range: 320-700°F /160-371°C
Freezing/Melting Point: No Data
Solubility in Water: Negligible
Specific Gravity: 0.81-0.88 @ 60°F
Percent Volatile: Negligible
Evaporation Rate (nBuAc=1): <1
Viscosity: 32.6-40.0 SUS @ 100°F
Bulk Density: 7.08 lbs/gal
Flash Point: >125°F / >52°C
Flammable/Expolsive Limits (%): LEL: 0.3 / UEL: 10.0

10. STABILITY AND REACTIVITY

Stability: Stable under normal ambient and anticipated storage and handling conditions of temperature and pressure. Flammable liquid and vapor. Vapor can cause flash fire.

Conditions To Avoid: Avoid all possible sources of ignition (see Sections 5 and 7).

Materials to Avoid (Incompatible Materials): Avoid contact with strong oxidants such as liquid chlorine, concentrated oxygen, sodium hypochlorite, calcium hypochlorite, etc.

Hazardous Decomposition Products: The use of hydrocarbon fuels in an area without adequate ventilation may result in hazardous levels of combustion products (e.g., oxides of carbon, sulfur and nitrogen, benzene and other hydrocarbons) and/or dangerously low oxygen levels. ACGIH has included a TLV of 0.05 mg/m3 TWA for diesel exhaust particulate on its 1999 Notice of Intended Changes. See Section 11 for additional information on hazards of engine exhaust.

Hazardous Polymerization: Will not occur.

11. TOXICOLOGICAL INFORMATION

Diesel Fuel No. 2 (CAS# 68476-34-6)

Carcinogenicity: Chronic dermal application of certain middle distillate streams contained in diesel fuel No. 2 resulted in an increased incidence of skin tumors in mice. This material has not been identified as carcinogen by NTP, IARC, or OSHA. Diesel exhaust is a probable cancer hazard based on tests with laboratory animals.

Target Organ(s): Limited evidence of renal impairment has been noted from a few case reports involving excessive exposure to diesel fuel No. 2.

Naphthalene (CAS# 91-20-3)

Carcinogenicity: Naphthalene has been evaluated in two year inhalation studies in both rats and mice. The National Toxicology Program (NTP) concluded that there is clear evidence of carcinogenicity in male and female rats based on increased incidences of respiratory epithelial adenomas and olfactory epithelial neuroblastomas of the nose. NTP found some evidence of carcinogenicity in female mice (alveolar adenomas) and no evidence of carcinogenicity in male mice. Naphthalene has not been identified as a carcinogen by IARC or OSHA.

12. ECOLOGICAL INFORMATION

Not evaluated at this time

13. DISPOSAL CONSIDERATIONS

This material, if discarded as produced, would be a RCRA “characteristic” hazardous waste due to the characteristic(s) of ignitability (D001) and benzene (D018). If the material is spilled to soil or water, characteristic testing of the contaminated materials is recommended. Further, this material, once it becomes a waste, is subject to the land disposal restrictions in 40 CFR 268.40 and may require treatment prior to disposal to meet specific standards. Consult state and local regulations to determine whether they are more stringent then the federal requirements.

Container contents should be completely used and containers should be emptied prior to discard. Container ?insate? could be considered a RCRA hazardous waste and must be disposed of with care and in compliance with federal, state and local regulations. Large empty containers, such as drums, should be returned to the distributor or to a drum reconditioner. To assure proper disposal of smaller containers, consult with state and local regulations and disposal authorities.

14. TRANSPORT INFORMATION

DOT Shipping Description: Diesel Fuel, NA1983
Non-Bulk Package Marking: Diesel Fuel, 3, NA 1993, III

15. REGULATORY INFORMATION

EPA SARA 311/312 (Title III Hazard Categories):

Acute Health:	Yes
Chronic Health:	Yes
Fire Hazard:	Yes
Pressure Hazard:	No
Reactive Hazard:	No

SARA 313 and 40 CFR 372:

This material contains the following chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372:

Component	CAS Number	Weight %
-- None known --		

California Proposition 65:

Warning: This material contains the following chemicals which are known to the state of California to cause cancer, birth defects or other reproductive harm, and are subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5):

Component	Effect
Benzene	Cancer, Developmental and Reproductive Toxicant
Toluene	Developmental Toxicant

Diesel engine exhaust, while not a component of this material, is on the Proposition 65 list of chemicals known to the State of California to cause cancer.

Carcinogen Identification:

This material has not been identified as a carcinogen by NTP, IARC, or OSHA. See Section 11 for carcinogenicity information of individual components, if any. Diesel exhaust is a probable cancer hazard based on tests in laboratory animals. It has been identified as carcinogen by IARC.

EPA (CERCLA Reportable Quantity: None

16. OTHER INFORMATION

Issue Date: 01/01/02
Previous Issue Date: 05/15/01
Product Code: Multiple
Revised Sections: None
Previous Product Code: Multiple
MSDS Number: 0041

Disclaimer of Expressed and Implied Warranties:

The information presented in this Material Data Safety Sheet is based on data believed to be accurate as of the date this Material Data Sheet was prepared. HOWEVER, NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY IS EXPRESSED OR IS TO BE IMPLIED REGARDING THE ACCURACY OR COMPLETENESS OF THE INFORMATION PROVIDED ABOVE, THE RESULTS TO BE OBTAINED FROM THE USE OF THIS INFORMATION OR THE PRODUCT, THE SAFETY OF THE PRODUCT, OR THE HAZARDS RELATED TO ITS USE. No responsibility is assumed for any damage or injury resulting from abnormal use or from any failure to adhere to recommended practices. The information provided above, and the product, are furnished on the condition that the person receiving them shall make their own determination as to the suitability of the product for their particular purpose and on the condition that they assume the risk of their use. In addition, no authorization is given nor implied to practice any patented invention without a license.

Tosco Refining Company ***Ferndale Refinery***

UltraLow Sulfur Diesel Product Specification

Ferndale Product Code:34380xx (5) Product Code: ULSD2

(COMETS)

Specification	Unit	Limit	Test Procedure	Typical
Appearance				
Water & Sediment	Vol %	0.05 Max	D 2709	
Color	Number	3.0 Max	D 1500	
Haze Rating	Rating	2 Max	D 4176	
Composition				
Carbon Residue (Ramsbottom)	Wt %	0.35 Max	D 524, D 189	
Volatility				
90% Recovered	Deg; F	540 Min	D 86	
	Deg; F	640 Min	D 86	
Flash Point	Deg; F	125 Min (1)	D 93	130 F
Gravity	API	30 Min	D 287, D4052	
Fluidity				
Pour Point	Deg; F	See Season Table (6)	D 97	
Cloud Point	Deg; F	See Season Table (6)	D 2500	10 F
Viscosity @ 104F	cSt	1.9 Min	D 445	
	cSt	4.1 Max	D 445	
Lubricity, SLBOCLE	grams	3100 Min	D 6078	3300gm
Lubricity, HFRR	mm	.45	D 6079	
Combustion				
Cetane Index or Cetane Number (3,4)	Number	40.0 Min	D 976, D613	47.0
Corrosion				
Copper Strip, 3hr @ 50 deg C	Number	3 Max (2)	D 130	
Aromatics (4)	Vol %	35 Max	D 1319	25 %
Contaminants				
Total Sulfur	PPM	30 Max	D 2622, D4294	15-20ppm
Water & Sediment	Vol %	0.05 Max	D 1796	
Ash	Wt %	0.01 Max	D 482	
Additives				
Cetane Improver	Lb/MBbl	675 Max		
Dye		Undyed		

1. Minimum release specification is 125 deg. F. The refinery should target 135 deg. F.
2. Test result reported as a number and letter (e.g. 1a). Any letter is allowable as long as the number meets the spec shown.
3. Either specification must be met.
4. Either cetane index minimum or aromatics maximum must be met.
5. Winter cloud and pour specifications may be relaxed to the summer specifications by agreement with the customer.
6. Season Table

Month	Product Code	Pour Point	Cloud Point
Jan, Feb, Nov, Dec	WI	0 max (5)	14 max (5)
Mar - Oct	SU	15 max	24 max

SAFETY DATA SHEET

Version 5.9
Revision Date 05/24/2016
Print Date 06/20/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Diethyl phthalate

Product Number : W512206
Brand : Aldrich

CAS-No. : 84-66-2

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute aquatic toxicity (Category 3), H402

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram none

Signal word none

Hazard statement(s)
H402 Harmful to aquatic life.

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

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms : DEP

Formula : $C_{12}H_{14}O_4$
Molecular weight : 222.24 g/mol
CAS-No. : 84-66-2

EC-No. : 201-550-6

Hazardous components

Component	Classification	Concentration
Diethyl phthalate		
	Aquatic Acute 3; H402	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

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

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

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Avoid breathing vapours, mist or gas. Ensure adequate ventilation.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Diethyl phthalate	84-66-2	TWA	5.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract irritation Not classifiable as a human carcinogen		
		TWA	5.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		PEL	5 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Respiratory protection not required. For nuisance exposures use type OV/AG (US) or type ABEK (EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid Colour: light yellow
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 3 °C (37 °F) - lit.
f)	Initial boiling point and boiling range	298 - 299 °C (568 - 570 °F) - lit.
g)	Flash point	156.0 °C (312.8 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Lower explosion limit: 0.75 %(V)
k)	Vapour pressure	< 28 hPa (< 21 mmHg) at 25 °C (77 °F)
l)	Vapour density	7.7 - (Air = 1.0)
m)	Relative density	1.12 g/mL at 25 °C (77 °F)
n)	Water solubility	0.932 g/l at 20 °C (68 °F) - OECD Test Guideline 105 - slightly soluble
o)	Partition coefficient: n-octanol/water	log Pow: 2.2 at 41 °C (106 °F)
p)	Auto-ignition temperature	457.0 °C (854.6 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	11.53 mm2/s at 20 °C (68 °F) -
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

Relative vapour density	7.7 - (Air = 1.0)

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Oxidizing agents, acids

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 8,600 mg/kg
Remarks: Behavioral:Somnolence (general depressed activity).

LC50 Inhalation - Rat - 6 h - > 4,640 mg/m3

LD50 Dermal - Rat - male and female - > 10,000 mg/kg

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation - 24 h

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Moderate eye irritation

Respiratory or skin sensitisation
- Mouse
Result: Did not cause sensitisation on laboratory animals.
(OECD Test Guideline 429)

Germ cell mutagenicity
Mouse
lymphocyte
Result: negative

Ames test
S. typhimurium
Result: negative

Carcinogenicity

Carcinogenicity - Mouse - Skin
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Liver:Tumors.

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

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

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

Reproductive toxicity - Rat - Intraperitoneal
Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).
Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system.

Reproductive toxicity - Mouse - male - Oral
Paternal Effects: Spermatogenesis (including genetic material, sperm morphology,motility, and count). Paternal Effects: Prostate, seminal vessicle, Cowper's gland, accessory glands. Effects on Newborn: Live birth index (# fetuses per litter; measured after birth).

Developmental Toxicity - Rat - Oral
Specific Developmental Abnormalities: Musculoskeletal system.

Developmental Toxicity - Mouse - Skin
Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system.

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information

Repeated dose toxicity	Rat - male and female - Oral - NOAEL : 150 mg/kg

RTECS: TI1050000

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

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	static test LC50 - Oncorhynchus mykiss (rainbow trout) - 12 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	static test LC50 - Daphnia magna (Water flea) - 90 mg/l - 48 h
Toxicity to algae	static test EC50 - Desmodesmus subspicatus (Scenedesmus subspicatus) - 23 mg/l - 72 h (OECD Test Guideline 201)

12.2 Persistence and degradability

Biodegradability	aerobic - Exposure time 28 d Result: 94.6 % - Readily biodegradable

12.3 Bioaccumulative potential

Bioaccumulation	Lepomis macrochirus (Bluegill) - 21 d - 0.00942 mg/l Bioconcentration factor (BCF): 117

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Harmful to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3082 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (Diethyl phthalate)
Reportable Quantity (RQ): 1000 lbs

Poison Inhalation Hazard: No

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

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

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

SARA 311/312 Hazards
No SARA Hazards

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Diethyl phthalate	84-66-2	1994-04-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Diethyl phthalate	84-66-2	1994-04-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Diethyl phthalate	84-66-2	1994-04-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
H402	Harmful to aquatic life.

HMIS Rating
Health hazard: 0
Chronic Health Hazard:

Flammability:	1
Physical Hazard	0

NFPA Rating

Health hazard:	0
Fire Hazard:	1
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.9 Revision Date: 05/24/2016 Print Date: 06/20/2016

SAFETY DATA SHEET

Version 4.10
Revision Date 07/09/2015
Print Date 02/23/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Ethyl Alcohol, pure

Product Number : 459836
Brand : Sigma-Aldrich
Index-No. : 603-002-00-5

CAS-No. : 64-17-5

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2), H225
Eye irritation (Category 2A), H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ eye protection/ face protection.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing.

	Rinse skin with water/shower.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	:	Absolute alcohol
Formula	:	C_2H_6O
Molecular weight	:	46.07 g/mol
CAS-No.	:	64-17-5
EC-No.	:	200-578-6
Index-No.	:	603-002-00-5

Hazardous components

Component	Classification	Concentration
Ethanol		
	Flam. Liq. 2; Eye Irrit. 2A; H225, H319	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

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

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Use explosion-proof equipment.Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Hygroscopic.
Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Ethanol	64-17-5	TWA	1,000.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract irritation Confirmed animal carcinogen with unknown relevance to humans		
		TWA	1,000 ppm 1,900 mg/m3	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	1,000 ppm 1,900 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		
		TWA	1,000.000000 ppm 1,900.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		

		TWA	1,000.000000 ppm 1,900.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		STEL	1,000.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Confirmed animal carcinogen with unknown relevance to humans		

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: butyl-rubber
Minimum layer thickness: 0.3 mm
Break through time: 480 min
Material tested:Butoject® (KCL 897 / Aldrich Z677647, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.2 mm
Break through time: 38 min
Material tested:Dermatril® P (KCL 743 / Aldrich Z677388, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
impervious clothing, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid, clear Colour: colourless
b)	Odour	No data available

c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -114 °C (-173 °F)
f)	Initial boiling point and boiling range	78 °C (172 °F)
g)	Flash point	14.0 °C (57.2 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 19 %(V) Lower explosion limit: 3.3 %(V)
k)	Vapour pressure	59.5 hPa (44.6 mmHg) at 20.0 °C (68.0 °F)
l)	Vapour density	No data available
m)	Relative density	0.789 g/mL at 25 °C (77 °F)
n)	Water solubility	completely soluble
o)	Partition coefficient: n-octanol/water	log Pow: -0.349 at 24 °C (75 °F)
p)	Auto-ignition temperature	363.0 °C (685.4 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Vapours may form explosive mixture with air.

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Alkali metals, Oxidizing agents, Peroxides

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 10,470 mg/kg

LC50 Inhalation - Rat - 4 h - 30,000 mg/l

LD50 Dermal - Rabbit - 15,800 mg/kg

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: No skin irritation - 24 h
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Moderate eye irritation
(OECD Test Guideline 405)

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

Carcinogenicity - Mouse - Oral
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Liver:Tumors. Blood:Lymphomas including Hodgkin's disease.

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

Reproductive toxicity
No data available

Reproductive toxicity - Human - female - Oral
Effects on Newborn: Apgar score (human only). Effects on Newborn: Other neonatal measures or effects. Effects on Newborn: Drug dependence.

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: KQ6300000

Central nervous system depression, narcosis, Damage to the heart., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 14,200 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	LC50 - Ceriodaphnia dubia (water flea) - 5,012 mg/l - 48 h

	NOEC - Daphnia magna (Water flea) - 9.6 mg/l - 9 d
Toxicity to algae	EC50 - Chlorella vulgaris (Fresh water algae) - 275 mg/l - 72 h (OECD Test Guideline 201)

12.2 Persistence and degradability

Biodegradability	Result: 95 % - Readily biodegradable

12.3 Bioaccumulative potential

Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 1170 Class: 3 Packing group: II
Proper shipping name: Ethanol
Reportable Quantity (RQ):

Poison Inhalation Hazard: No

IMDG

UN number: 1170 Class: 3 Packing group: II EMS-No: F-E, S-D
Proper shipping name: ETHANOL

IATA

UN number: 1170 Class: 3 Packing group: II
Proper shipping name: Ethanol

15. REGULATORY INFORMATION

SARA 302 Components

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

SARA 313 Components

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

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Ethanol	64-17-5	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date

Ethanol	64-17-5	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Ethanol	64-17-5	2007-03-01

California Prop. 65 Components

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

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.10 Revision Date: 07/09/2015 Print Date: 02/23/2016

Safety Data Sheets (SDS)

SECTION 1-IDENTIFICATION

Product name: Ethylbenzene

Other names: ─

Proper shipping name: Ethylbenzene

Recommended use of the chemical and restrictions on use:
The main use of ethylbenzene is to manufacture styrene, a compound used to make plastics. Ethylbenzene is also found in gasoline, paints, inks, insecticides, carpet glues and tobacco products.

Manufacturer/Supplier Name: Taiwan SM Corp., Kaohsiung plant
Address: NO.7, Industrial 1st Rd, Lin-Yuan Kaohsiung County 83203, Taiwan, R.O.C.
Phone No.: 886-7-6414511

Emergency phone No./Fax No.: 886-7-6414511 Ext. 221 (on duty), 886-7-6414517 (off duty)/886-7-6423828

SECTION 2-HAZARDS IDENTIFICATION

GHS Classification:

Flammable Liquid Category 2
Acute Toxicity (Inhalation) Category 4
Skin Corrosion/Irritation Category 3
Serious Eye Damage/Eye Irritation Category 2
Carcinogenicity Category 2
Reproductive Toxicity Category 2
Specific Target Organ Toxicity Repeated Exposure Category 2
Aspiration Hazard Category 1

GHS Label elements:

Hazard symbols

Signal word

Danger

Hazard statements

Flammable liquid and vapor
Harmful if inhaled
Causes skin irritation
Causes serious eye irritation
Suspected of causing cancer
May damage the unborn child
May be harmful to organs by prolonged and repeated exposure
May be fatal if swallowed and enters airways

Precautionary statements

Use only in well ventilated area.
Control of exposure by mechanical ventilation in an unventilated or confined space
Avoid breathing vapors and contact with skin and eyes.
Wear breathing apparatus/protective gloves/face protection.
Store in well-ventilated place.
Disposal must be in accordance with applicable federal, state, or local regulations.

Other hazards: ─

SECTION 3-COMPOSITION/INFORMATION ON INGREDIENTS

CAS No.	Chemical Name	wt% by weight	EINECS No.
00100-41-4	Ethylbenzene	99.0 min.	202-849-4
Synonyms	Phenylethane、EB、Ethylbenzol		

SECTION 4-FIRST AID MEASURES

Description of necessary first aid measures

Eye:

1. Flush eye with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids.
2. Get medical aid immediately.

Skin:

1. Washing affected area thoroughly with soap and water for at least 20 minutes.
2. Call a Physician if irritation develops or persists.
3. Removing contaminated clothing, shoes, and leathery wearings, cleaning procedure is available before reused or waste treatment.

Ingestion:

1. If victim is conscious and alert, give 2～4 cupfuls of milk/water to dilute the substance in stomach.
2. Never give anything by mouth to an unconscious person.
3. Don't induce vomiting unless directed to do so by medical person.
4. Then seek for medical attention.

Inhalation:

1. Remove from further exposure and flush thoroughly with air.
2. If not breathing, give artificial respiration. If breathing is difficult, give Oxygen.
3. If respiratory irritation, seek immediate medical assistance and call a physician.

Most important symptoms/effects, acute and delayed

Headaches, dizziness, fatigue, eye, nose and throat irritation. Target organs: Eyes, upper respiratory system, skin, CNS, lung, liver, kidney, skin (dermatitis), eye (conjuntivitis and other eye injuries), upper respiratory system disorders, and central nervous system disorders.

Indication of immediate medical attention and special treatment needed, if necessary

For acute or short term repeated exposures to Ethylbenzene:

Inhalation:

1. Severe exposures should have cardiac monitoring to detect arrhythmia.
2. If bronchospasm and wheezing occur, consider treatment with inhaled sympathomimetic agents.
3. If pulmonary edema (noncardiogenic) occurs, then maintain ventilation and oxygenation with close arterial blood gas monitoring. Early use of PEEP and mechanical ventilation may be needed to maintain pO2 greater than 50 mmHG with FIO2 less than 60%.

Ingestion:

1. Induction of emesis is not recommended.
2. Cautious gastric lavage followed by administration of activated charcoal may be of benefit if the patient is seen soon after the exposure.

SECTION 5-FIRE FIGHTING MEASURES

Extinguishing media

Foam、CO_2、Dry chemical powder、Water spray or fog – Large fires only.

Specific hazards arising from the chemical

1. Liquid and vapor are flammable.
2. Moderate fire hazard when exposed to heat or flame.
3. Vapor forms an explosive mixture with air.
4. Moderate explosion hazard when exposed to heat or flame.
5. Vapor may travel a considerable distance to source of ignition.
6. Heating may cause expansion or decomposition leading to violent rupture of containers.
7. On combustion, may emit toxic fumes of carbon monoxide (CO).

Special protective equipment and precautions for fire-fighters

1. Must wear MSHA/NOISH approved positive self-contained breathing apparatus（SCBA）and protective clothing.
2. Withdrawing and isolation the possible dangerous sources, fire fighting at safe distance and suitable protection area. Keep toxic vapors and decompositions away from inhalation, when standing at upper-wind area as well.
3. Stop leakage before fire extinguishing, otherwise it may explode again because of vapors above leakage. However, it's not well extinguishment at nondangerous circumstance, preferring to burning up.
4. Water spray may not work effectively in terms of lower flash point. Better fire fighting performed by experienced people.
5. In huge fire at larger area, automatic water spray system should be recommended. If extinguishing is not available, evacuating people back as soon as possible.
6. Out off the space immediately, if vessel collapsed or pressure relief valve went pop.

SECTION 6-ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedure

1. Personal protective equipment (specified in Section 8)
   Eyes : Chemical safety goggles are recommended, and a face shield is added when needed.
   Skin : Wear appropriate protective gloves to avoid skin contact.
   Clothing : When direct contact is likely, Use rubberized clothings, apron and boots.
   Respiratory : When limits are exceeded, wear a respirator approved by NIOSH/MSHA for protection against organic dust, mists and vapors.
2. Remove all sources of ignition. No smoking, naked lights or ignition sources. Ventilate area of leak or spill.
3. Keep unnecessary and unprotected personnel from entering. Evacuate personnel from the danger area. Consult with an expert about the emergency procedures.

Environmental precautions

1. Prevent spillage from entering drains, surface, and groundwater.
2. Contain and recover liquid when possible. Use non-sparking tools and equipment.
3. Collect liquid in an appropriate container or absorb with an inert material (e.g. vermiculite, dry sand, earth), and place in a chemical waste container.
4. Report the accidental spill/release to Local/State government.

Methods and materials for containment and cleaning up

Minor spill:

1. Remove all ignition sources.
2. Clean up all spills immediately.
3. Avoid breathing vapors and contact with skin and eyes.
4. Control personal contact by using protective equipment.
5. Contain and absorb small quantities with vermiculite or other absorbent material.
6. Wipe up.
7. Collect residues in a flammable waste container.

Major spill

1. Clear area of personnel and move upwind.
2. Alert emergency responders and tell them location and nature of hazard.
3. May be violently or explosively reactive.
4. Wear breathing apparatus plus protective gloves.
5. Prevent spillage from entering drains or water course.
6. No smoking, naked lights or ignition sources. Increase ventilation.
7. Stop leak if safe to do so.
8. Water spray or fog may be used to disperse/absorb vapor.
9. Contain spill with sand, earth or vermiculite.
10. Use only spark-free shovels and explosion proof equipment.
11. Collect recoverable product into labeled containers for recycling..
12. Absorb remaining product with sand, earth or vermiculite.
13. Collect solid residues and seal in labeled drums for disposal.
14. Wash area and prevent runoff into drains.
15. If contamination of drains or waterways occurs, advise emergency services.

SECTION 7-HANDLING AND STORAGE

Precautions for safe handling

1. Wash thoroughly after handling.
2. Use only in well ventilated area.
3. Ground and bond containers when transferring.
4. Use spark-free tools and explosion proof equipment.
5. Empty containers retain product residue (liquid/vapor), and can be dangerous.
6. Do not pressurize, cut, weld, braze, solder, drill, or expose empty containers to heat, sparks or open flames.

Conditions for safe storage, including any incompatibilities

1. Iron, galvanized iron, and steel are suitable metals for tanks.
2. Storage should be located away from any area subject to fire hazards. Storage tanks located in the open or underground minimize the danger of fire, vapor and health problems.
3. All openings in the system should terminate outdoors and be protected by flash screen.
4. Electrical installation should conform to the National Electrical Code.
5. Storage tanks should be electrically bonded and grounded to prevent dangerous accumulations of static electricity. (see NFPA pamphlet “Static Electricity”)
6. Natural ventilation is all that is needed for outdoor storage installation.
7. For indoor storage : Good natural ventilation may be sufficient. The generally considered maximum allowable concentration is 100 ppm by volume in air for an eight-hour working exposure. If other than natural ventilation is required,

the ventilation equipment should be designed to handle the heavy ethylbenzene vapor. Since ethylbenzene vapor is heavier than air, a down draft mechanical exhaust is indicated in those operation in which general ventilation should be to ensure a substantial air flow away from the work area. All ventilating systems require periodic inspection.

SECTION 8-EXPOSURE CONTROLS, PERSONAL PROTECTION

Control parameters

OSHA- Final PELs : 100 ppm TWA.
ACGIH TLV-TEL : 100 ppm.
ACGIH TLV-STEL : 125 ppm.
Taiwan TWA : 100 ppm (skin).
Taiwan STEL : 125 ppm (skin).
Taiwan Ceiling : -------.
Taiwan BEI : 1 mg/l (before on duty).

Engineering control

1. Process should be located at least 17 meter (50 feet) away from open flames and all high temperature operations likely to cause ignition of the ethylbenzene vapor.
2. In venting ethylbenzene vapors, consideration should be given to possible halogenation of the vapors by low concentrations of free chlorine and bromine with the resultant formation of lacrimations.
3. Process should be designed so that the operator is not exposed to direct contact with ethylbenzene or the vapor. The technical problems of designing equipment, providing adequate ventilation and operating procedures which promise maximum security and economy, can best be handled by competent engineers.
4. It is essential for safety that equipment be used and maintained as recommended by the manufacturer.
5. Tanks used to store or process ethylbenzene should be closed vessels vented to a safe point of discharge in the outside atmosphere away from operating stations, roadways, and at least 17 meter (50 feet) from possible sources of ignitions. All sparks, flames, heated surface, or other sources of ignition should be kept away from all vents. It is advisable, to provide suction on vessels when inspection or observation openings are made, to minimize or eliminate escape of vapors.

Personal protective equipment

Personal respirators (NIOSH Approved):
If the exposure limit is exceeded, a half-face organic vapor respirator may be worn for up to ten times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. A full-face piece organic vapor respirator may be worn up to 50 times the exposure limit or the maximum use concentration specified by the appropriate regulatory agency or respirator supplier, whichever is lowest. For emergencies or instances where the exposure levels are not known, use a full-face piece positive-pressure, air-supplied respirator.
(Warning: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.)

Skin protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

SECTION 9-PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Transparent liquid	Upper/lower explosive limits : 1.0%～6.7%
Odor: Aromatic odor	Vapor Pressure : 7.1 mmHg @20℃/68℉
Odor threshold : 0.092～0.6 ppm	Vapor Density : 3.66 (air=1)
PH : Not available	Relative density : 0.864 (water=1)
Melting/Freezing Point : －94.9℃	Solubility : 0.015 @25℃ in water
Initial boiling point/boiling range : 132.6℃	Partition coefficient : 3.15 (n-octanol/water)
Flash point : 21℃	Auto-ignition temperature : 432℃
Evaporation Rate : 0.84 (BuAc=1)	Decomposition temperature : Not available
Flammability (solid/gas) : Not available	Viscosity : Not available
Molecular Formula : C_8H_{10}	Molecular Weight : 106.7

SECTION 10-STABILITY AND REACTIVITY

Reactivity

The product is stable. Vapor is explosive when exposed to heat or flame.

Chemical stability

Stable under normal temperatures and pressures.

Possibility of hazardous reaction

Has not been reported.

Condition to avoid
Incompatible materials, ignition sources, excess heat.

Incompatible materials
Oxidizing agents.

Hazardous decomposition products
Carbon dioxide and carbon monoxide may form when heated to decomposition.

SECTION 11-TOXICOLOGICAL INFORMATION

Routes of exposure
Eye, Skin, inhalation, Ingestion.

Symptoms (treatments as indicated in Section 4)
Eye:
May cause irritation, redness, pain, and corneal damage.

Skin:
Causes irritation to skin. Symptoms include redness, itching, and pain. May produce blisters. May be absorbed through the skin.

Ingestion:
May cause irritation to the gastrointestinal tract. Symptoms may include nausea, vomiting and diarrhea. May cause central nervous system depression. Symptoms may include giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal.

Inhalation:
Inhalation of high concentrations of gas/vapor causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination. Central nervous system (CNS) depression may include general discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal. If exposure to highly concentrated solvent atmosphere is prolonged this may lead to narcosis, unconsciousness, even coma and possible death.

Chronic exposure:
There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems. Chronic solvent inhalation exposures may result in nervous system impairment and liver and blood changes.

Aggravation of pre-existing conditions:
Persons with pre-existing skin disorders, eye problems, liver disease, central nervous system disorders, or impaired respiratory function may be more susceptible to the effects of the substance.

Toxicity
LD50: 3500 mg/kg (rat, oral)
LC50: 4000 ppm/4h (rat, inhalation)

Irritation
Skin (rabbit): 15 mg/24h Mild
Eye (rabbit): 500 mg- SEVERE

Chronic effect
Carcinogenicity:
ACGIH : A3- Proven for animals.
OSHA : Classified None.
IARC : Group 2B carcinogen.

Epidemiology:
Not available.

Teratogenicity:
Not available.
Reproductive Effects:
Not available.

Neurotoxicity:
Not available

Mutagenicity:
Mutation in mammalian somatic cells（Rodent, mouse）Lymphocyte=80mg/L.

SECTION 12-ECOLOGICAL INFORMATION

Ecotoxicity
LC_{50} (96 hr.) Fish: 32.0～97.1 mg/l
EC_{50} (48 hr.) Water flea: Not available
Biocencentration factor (BCF): Not available

Persistence and degradability

1. In the atmosphere, it exists primarily in the vapor phase based on its vapor pressure. It photochemically degrades by reaction with hydroxyl radicals (half-life 0.5 to 2 days) and partially returns to the earth in rain.
2. Degradation occurs faster under smog conditions. Photooxidation products include ethylphenol, benzaldehyde, acetophenone and m- and p- ethylnitrobenzene.
3. In water, ethylbenzene's concentration decreases by evaporation and biodegradation. The rate of decrease is dependent on the season. Half-lives in water range from several days to 2 weeks.
4. Some ethylbenzene is absorbed by sediment, but bioconcentration in fish is not expected to be significant.

Half-life (Air): 8.56～85.6 hr
Half-life (Surface water): 72～240 hr
Half-life (Ground water): 144～5472 hr
Half-life (Soil): 7.2～240 hr

Bioaccumulative potential
This material is not expected to significantly bioaccumulate.

Mobility in soil
Ethylbenzene is adsorbed moderately by soil. It does not significantly hydrolyze in either water or soil.

Other adverse effects: —

SECTION 13-DISPOSAL CONSIDERATIONS

Residues and spilled material are hazardous waste due to ignitability. Disposal must be in accordance with applicable federal, state, or local regulations.
The container for this product can present explosion or fire hazards, even when emptied. To avoid risk of injury, do not cut, puncture, or weld on or near this container. Since the emptied containers retain product residue, follow label warnings even after container is emptied.

SECTION 14-TRANSPORTATION INFORMATION

US DOT	Shipping Name	ETHYLBENZENE	Hazard Labels	
	Hazard Class	3		
	UN Number	1175		
	Packing Group	II		
Sea(IMO/IMDG)	Shipping Name	ETHYLBENZENE	Hazard Labels	
	Hazard Class	3.2		
	UN Number	1175		
	Packing Group	II		
Air(ICAO/IATA)	Shipping Name	ETHYLBENZENE	Hazard Labels	
	Hazard Class	3		
	Subsidiary Class	1175		
	Packing Group	II		

EUROPEAN RID/ADR (ADR/RID)	Shipping Name	ETHYLBENZENE	Hazard Labels	
	Hazard Class	3		
	UN Number	1175		
Canadian TDG	Shipping Name	ETHYLBENZENE	Hazard Labels	
	Hazard Class	3		
	UN Number	1175		
	Packing Group	II		
	Subsidiary Class	9.2		

SECTION 15-REGULATORY INFORMATION

US FEDERAL

TSCA

CAS# 100-41-4 is listed on the TSCA inventory.

Health & Safety Reporting List

CAS# 100-41-4：Effective Date：June 19, 1987；Sunset Date：June 19, 1997

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA

Section 302 (RQ)

CAS# 100-41-4：final RQ＝1000 pounds（454 kg）

Section 302（TPQ）

None of the chemicals in this product have a TPQ.

SARA Codes

CAS# 100-41-4：acute, chronic, flammable.

Section 313

This material contains Ethylbenzene（CAS# 100-41-4, 99.0% ）,which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 372.

Clean Air Act

CAS# 100-41-4 is listed as a hazardous air pollutant（HAP）.

This material does not contain any class 1 Ozone depletors.

This material does not contain any class 2 Ozone depletors.

Clean Water Act

CAS# 100-41-4 is listed as a hazardous Substance under the CWA.

CAS# 100-41-4 is listed as a Priority Pollutant under the Clean Water Act.

CAS# 100-41-4 is listed as a Toxic Pollutant under the Clean Water Act.

OSHA

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

Ethylbenzene can be found on the following state right to know lists : California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

California No Significant Risk Level：None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols : XN F

Risk Phrases : R 11 Highly flammable.

R 20 Harmful by inhalation.

Safety Phrases : S 16 Keep away form sources of ignition-No smoking.

S 24/25 Avoid contact with skin and eyes.

S 29 Do not empty into drains.

CANADA

CAS# 100-41-4 is listed on Canada’s DSL/NDSL list.

This product has a WHMIS classification of B2, D2B.

CAS# 105-05-5 is not listed on Canada's Ingredient Disclosure List.

SECTION 16-OTHER INFORMATION

References and sources

1. CHEMINFO Data Bank, CCINFO CD, 2005-3
2. HSDB Data Bank, TOMES PLUS CD, Vol.65,2005
3. RETECS Data Bank, TOMES PLUS CD, Vol.65, 2000
4. Hazardous Substance Data Bank, Environment Protection, Administration, Executive Yuan, ROC (Taiwan)
5. Chemwatch Data Bank, 2005-1
6. SDS, GHS in Taiwan, Council of Labor Affairs, Executive Yuan, ROC (Taiwan)

Version	Date	Remark
Version 1	06/01/1998	Original Version.
Version 2	04/20/2001	Updated 10 sections to 16 sections.
Version 3	08/01/2003	Updated "SECTION 9-PHYSICAL AND CHEMICAL PROPERTIES".
Version 4	01/01/2006	Updated "SECTION 14-TRANSPORTATION INFORMATION".
Version 5	08/21/2008	Updated each section by GHS SDS.
Version 6	08/01/2011	Checked each section by SHE
Prepared by	Safety & Environment Protection Section, Taiwan SM Corporation Kaohsiung Plant.	

MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

1. PRODUCT IDENTIFICATION

CHEMICAL NAME; CLASS: NON-FLAMMABLE GAS MIXTURE

Containing One or More of the Following Components in a Nitrogen Balance Gas:Oxygen, 0.0015-23.5%;Methane, 0.0005-2.5%;Carbon Monoxide, 0.0005-1.0%; Hydrogen Sulfide, 0.001-0.025%

SYNONYMS: Not Applicable
CHEMICAL FAMILY NAME: Not Applicable
FORMULA: Not Applicable
Document Number: 50018

Note: The Material Safety Data Sheet is for this gas mixture supplied in cylinders with 33 cubic feet (935 liters) or less gas capacity (DOT - 39 cylinders). This MSDS has been developed for various gas mixtures with the composition of components within the ranges listed in Section 2 (Composition and Information on Ingredients). Refer to the product label for information on the actual composition of the product.

PRODUCT USE:	Calibration of Monitoring and Research Equipment
SUPPLIER/MANUFACTURER'S NAME:	CALGAZ
ADDRESS:	821 Chesapeake Drive Cambridge, MD 21613
EMERGENCY PHONE:	CHEMTREC: 1-800-424-9300
BUSINESS PHONE:	1-410-228-6400
General MSDS Information	1-713/868-0440
Fax on Demand:	1-800/231-1366

2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	mole %	EXPOSURE LIMITS IN AIR					
			ACGIH		OSHA		NIOSH	OTHER
			TLV ppm	STEL ppm	PEL ppm	STEL ppm	IDLH ppm	ppm
Oxygen	7782-44-7	0.0015 - 23.5%	There are no specific exposure limits for Oxygen. Oxygen levels should be maintained above 19.5%.					
Methane	74-82-8	0.0005 - 2.5%	There are no specific exposure limits for Methane. Methane is a simple asphyxiant (SA). Oxygen levels should be maintained above 19.5%.					
Hydrogen Sulfide	7783-06-4	0.001- 0.025 %	10 (NIC = 5)	15	10 (Vacated 1989 PEL)	20 (ceiling); 50 (ceiling, 10 min. peak once per 8-hour shift 15 (vacated 1989 PEL)	100	NIOSH REL: STEL = 10 (ceiling) 10 minutes DFG-MAKs: TWA = 10 PEAK = 2•MAK, 10 min., momentary value
Carbon Monoxide	630-08-0	0.0005 - 1.0%	25	NE	50 35 (Vacated 1989 PEL)	200 [ceiling] (Vacated 1989 PEL)	1200	NIOSH RELS: TWA = 35 STEL = 200 (ceiling) DFG MAKs: TWA = 30 PEAK = 2•MAK, 15 min., average value DFG MAK Pregnancy Risk Classification: B
Nitrogen	7727-37-9	Balance	There are no specific exposure limits for Nitrogen. Nitrogen is a simple asphyxiant (SA). Oxygen levels should be maintained above 19.5%.					

NE = Not Established. NIC = Notice of Intended Change See Section 16 for Definitions of Terms Used.
NOTE (1): ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-1998 format. This gas mixture has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: This gas mixture is a colorless gas which has a rotten-egg odor (due to the presence of Hydrogen Sulfide). The odor cannot be relied on as an adequate warning of the presence of this gas mixture, because olfactory fatigue occurs after over-exposure to Hydrogen Sulfide. Hydrogen Sulfide and Carbon Monoxide (another component of this gas mixture) are toxic to humans in relatively low concentrations. Over-exposure to this gas mixture can cause skin or eye irritation, nausea, dizziness, headaches, collapse, unconsciousness, coma, and death. Additionally, releases of this gas mixture may produce oxygen-deficient atmospheres (especially in small confined spaces or other poorly-ventilated environments); individuals in such atmospheres may be asphyxiated.

SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE: The most significant route of over-exposure for this gas mixture is by inhalation.

INHALATION: Due to the small size of an individual cylinder of this gas mixture, no unusual health effects from over-exposure to the product are anticipated under routine circumstances of use. A potential health hazard associated with this gas mixture is the potential of inhalation of Hydrogen Sulfide, a component of this gas mixture. Such over-exposures may occur if this gas mixture is used in a confined space or other poorly-ventilated area. Over-exposures to Hydrogen Sulfide can cause dizziness, headache, and nausea. Over-exposure to this gas could result in respiratory arrest, coma, or unconsciousness, due to the presence of Hydrogen Sulfide. Continuous inhalation of low concentrations of Hydrogen Sulfide may cause olfactory fatigue, so that the odor is no longer an effective warning of the presence of this gas. A summary of exposure concentrations and observed effects are as follows:

CONCENTRATION OF HYDROGEN SULFIDE	**OBSERVED EFFECT**
0.3-30 ppm	Odor is unpleasant.
50 ppm	Eye irritation. Dryness and irritation of nose, throat.
Slightly higher than 50 ppm	Irritation of the respiratory system.
100-150 ppm	Temporary loss of smell.
200-250 ppm	Headache, vomiting nausea. Prolonged exposure may lead to lung damage. Exposures of 4-8 hours can be fatal.
300-500	Swifter onset of symptoms. Death occurs in 1-4 hours.
500 ppm	Headache, excitement, staggering, and stomach ache after brief exposure. Death occurs within 0.5 - 1 hour of exposure.
> 600 ppm	Rapid onset of unconsciousness, coma, death.
> 1000 ppm	Immediate respiratory arrest.

NOTE: This gas mixture contains a maximum of 250 ppm Hydrogen Sulfide. The higher concentration values here are presented to delineate the complete health effects which have been observed for humans after exposure to Hydrogen Sulfide.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD	(BLUE)	3
FLAMMABILITY HAZARD	(RED)	0
PHYSICAL HAZARD	(YELLOW)	0

PROTECTIVE EQUIPMENT

EYES	RESPIRATORY	HANDS	BODY

See Section 8

For Routine Industrial Use and Handling Applications

3. HAZARD IDENTIFICATION (continued)

Inhalation over-exposures to atmospheres containing more than the Threshold Limit Value of Carbon Monoxide (25 ppm), another component of this gas mixture, can result in serious health consequences. Carbon Monoxide is classified as a chemical asphyxiant, producing a toxic action by combining with the hemoglobin of the blood and replacing the available oxygen. Through this replacement, the body is deprived of the required oxygen, and asphyxiation occurs. Since the affinity of Carbon Monoxide for hemoglobin is about 200-300 times that of oxygen, only a small amount of Carbon Monoxide will cause a toxic reaction to occur. Carbon Monoxide exposures in excess of 50 ppm will produce symptoms of poisoning if breathed for a sufficiently long time. If this gas mixture is released in a small, poorly ventilated area (i.e. an enclosed or confined space), symptoms which may develop include the following:

CONCENTRATION OF CARBON MONOXIDE	**OBSERVED EFFECT**
All exposure levels:	Over-exposure to Carbon Monoxide can be indicated by the lips and fingernails turning bright red.
200 ppm:	Slight symptoms (i.e. headache) after several hours of exposure.
400 ppm:	Headache and discomfort experienced within 2-3 hours of exposure.
1,000 -2000 ppm:	Within 30 minutes, slight palpitations of the heart occurs. Within 1.5 hours, there is a tendency to stagger.
200-2500 ppm:	Within 2 hours, there is mental confusion, headaches, and nausea. Unconsciousness within 30 minutes.
>2500 ppm:	Potential for collapse and death before warning symptoms.

Additionally, if mixtures of this gas mixture contain less than 19.5% Oxygen and are released in a small, poorly ventilated area (i.e. an enclosed or confined space), an oxygen-deficient environment may occur. Individuals breathing such an atmosphere may experience symptoms which include headaches, ringing in ears, dizziness, drowsiness, unconsciousness, nausea, vomiting, and depression of all the senses. Under some circumstances of over-exposure, death may occur. The following effects associated with various levels of oxygen are as follows:

CONCENTRATION OF OXYGEN	**OBSERVED EFFECT**
12-16% Oxygen:	Breathing and pulse rate increased, muscular coordination slightly disturbed.
10-14% Oxygen:	Emotional upset, abnormal fatigue, disturbed respiration.
6-10% Oxygen:	Nausea, vomiting, collapse, or loss of consciousness.
Below 6%:	Convulsive movements, possible respiratory collapse, and death.

SKIN and EYE CONTACT: Hydrogen Sulfide, a component of this gas mixture, may be irritating to the skin. Inflammation and irritation of the eyes can occur at very low airborne concentration of Hydrogen Sulfide (less than 10 ppm). Exposure over several hours may result in "gas eyes" or "sore eyes" with symptoms of scratchiness, irritation, tearing and burning. Above 50 ppm of Hydrogen Sulfide, there is an intense tearing, blurring of vision, and pain when looking at light. Over-exposed individuals may see rings around bright lights. Most symptoms disappear when exposure ceases. However, in serious cases, the eye can be permanently damaged.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. Over-exposure to this gas mixture may cause the following health effects:

ACUTE: Due to the small size of the individual cylinder of this gas mixture, no unusual health effects from exposure to the product are anticipated under routine circumstances of use. However the Hydrogen Sulfide and Carbon Monoxide components of this gas mixture are toxic to humans. Over-exposure to this gas mixture can cause nausea, dizziness, headaches, collapse, unconsciousness, coma, and death. Due to the presence of Hydrogen Sulfide, over-exposures to this gas mixture can also irritate the skin and eyes; severe eye contamination can result in blindness.

CHRONIC: Severe over-exposures to the Hydrogen Sulfide component of this gas mixture, which do not result in death, may cause long-term symptoms such as memory loss, paralysis of facial muscles, or nerve tissue damage. In serious cases of over-exposure, the eyes can be permanently damaged. Skin disorders and respiratory conditions may be aggravated by repeated over-exposures to this gas product. Refer to Section 11 (Toxicology Information) for additional information on the components of this gas mixture. Chronic exposure to oxygen-deficient atmospheres (below 18% oxygen in air) may affect the heart and nervous system.

TARGET ORGANS: ACUTE: Respiratory system, blood system, central nervous system effects, cardiovascular system, skin, eyes. CHRONIC: Neurological system, reproductive system, eyes.

4. FIRST-AID MEASURES

RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO THIS GAS MIXTURE WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. At a minimum, Self-Contained Breathing Apparatus must be worn. Victim(s) who experience any adverse effect after over-exposure to this gas mixture must be taken for medical attention. Rescuers should be taken for medical attention if necessary. Take a copy of the label and the MSDS to physician or other health professional with victim(s).

No unusual health effects are anticipated after exposure to this gas mixture, due to the small cylinder size. If any adverse symptom develops after over-exposure to this gas mixture, remove victim(s) to fresh air as quickly as possible. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation if necessary.

SKIN EXPOSURE: If irritation of the skin develops after exposure to this gas mixture, immediately begin decontamination with running water. Minimum flushing is for 15 minutes. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Victim must seek immediate medical attention.

EYE EXPOSURE: If irritation of the eye develops after exposure to this gas mixture, open victim's eyes while under gentle running water. Use sufficient force to open eyelids. Have victim "roll" eyes. Minimum flushing is for 15 minutes. Seek medical assistance immediately, preferably an ophthalmologist.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing respiratory conditions may be aggravated by over-exposure to this gas mixture. Carbon Monoxide, a component of this gas mixture, can aggravate some diseases of the cardiovascular system, such as coronary artery disease and angina pectoris. Because of the presence of Hydrogen Sulfide, eye disorders or skin problems may be aggravated by over-exposure to this gas mixture.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms and eliminate over-exposure. Hyperbaric oxygen is the most efficient antidote to Carbon Monoxide poisoning, the optimum range being 2-2.5 atm. A special mask, or, preferably, a compression chamber to utilize oxygen at these pressures is required. Avoid administering stimulant drugs. Be observant for initial signs of pulmonary edema in the event of severe inhalation over-exposures.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not applicable.

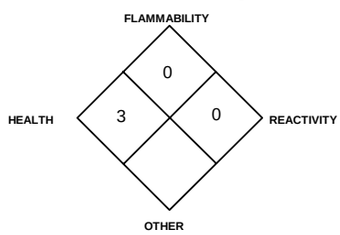
AUTOIGNITION TEMPERATURE: Not applicable.

FLAMMABLE LIMITS (in air by volume, %):

Lower (LEL): Not applicable.

Upper (UEL): Not applicable.

NFPA RATING



FIRE EXTINGUISHING MATERIALS: Non-flammable gas mixture. Use extinguishing media appropriate for surrounding fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS: This gas mixture contains toxic gases, Hydrogen Sulfide and Carbon Monoxide, and presents an health hazard to firefighters. This gas mixture is not flammable; however, containers, when involved in fire, may rupture or burst in the heat of the fire.

Explosion Sensitivity to Mechanical Impact: Not Sensitive.

Explosion Sensitivity to Static Discharge: Not Sensitive.

SPECIAL FIRE-FIGHTING PROCEDURES: Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment.

6. ACCIDENTAL RELEASE MEASURES

LEAK RESPONSE: Due to the small size and content of the cylinder, an accidental release of this gas mixture presents significantly less risk of over-exposure to Hydrogen Sulfide and Carbon Monoxide, the toxic components of this gas mixture, and other safety hazards related to the remaining components of this gas mixture, than a similar release from a larger cylinder. However, as with any chemical release, extreme caution must be used during emergency response procedures. In the event of a release in which the atmosphere is unknown, and in which other chemicals are potentially involved, evacuate immediate area. Such releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a leak, clear the affected area, protect people, and respond with trained personnel. For emergency disposal,

6. ACCIDENTAL RELEASE MEASURES (continued)

secure the cylinder and slowly discharge the gas to the atmosphere in a well-ventilated area or outdoors. Allow the gas mixture to dissipate. If necessary, monitor the surrounding area (and the original area of the release) for Hydrogen Sulfide, Carbon Monoxide, and Oxygen. Hydrogen Sulfide and Carbon Monoxide level must be below exposure level listed in Section 2 (Composition and Information on Ingredients) and Oxygen levels must be above 19.5% before non-emergency personnel are allowed to re-enter area. If leaking incidentally from the cylinder, contact your supplier.

7. HANDLING and USE

WORK PRACTICES AND HYGIENE PRACTICES: Be aware of any signs of dizziness or fatigue, especially if work is done in a poorly ventilated area; exposures to fatal concentrations of this gas mixture could occur without any significant warning symptoms, due to olfactory fatigue or oxygen deficiency. Do not attempt to repair, adjust, or in any other way modify cylinders containing a gas mixture with Hydrogen Sulfide or Carbon Monoxide. If there is a malfunction or another type of operational problem, contact nearest distributor immediately. Eye wash stations/safety showers should be near areas where this gas mixture is used or stored. All work operations should be monitored in such a way that emergency personnel can be immediately contacted in the event of a release. All work practices should minimize releases of Hydrogen Sulfide and Carbon Monoxide-containing gas mixtures.

STORAGE AND HANDLING PRACTICES: Cylinders should be firmly secured to prevent falling or being knocked-over. Cylinders must be protected from the environment, and preferably kept at room temperature (approximately 21°C (70°F). Cylinders should be stored in dry, well-ventilated areas, away from sources of heat, ignition, and direct sunlight. Protect cylinders against physical damage. Full and empty cylinders should be segregated. Use a first-in, first-out inventory system to prevent full containers from being stored for long periods of time. These cylinders are not refillable. **WARNING! Do not refill DOT 39 cylinders. To do so may cause personal injury or property damage.**

SPECIAL PRECAUTIONS FOR HANDLING GAS CYLINDERS: WARNING! Compressed gases can present significant safety hazards. During cylinder use, use equipment designed for these specific cylinders. Ensure all lines and equipment are rated for proper service pressure.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely. Always use product in areas where adequate ventilation is provided.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: No special ventilation systems or engineering controls are needed under normal circumstances of use. As with all chemicals, use this gas mixture in well-ventilated areas. If this gas mixture is used in a poorly-ventilated area, install automatic monitoring equipment to detect the levels of Oxygen, Hydrogen Sulfide, and Carbon Monoxide.

RESPIRATORY PROTECTION: No special respiratory protection is required under normal circumstances of use. Use supplied air respiratory protection if the levels of components exceeds exposure limits presented in Section 2 (Composition and Information of Ingredients) and Oxygen levels are below 19.5%, or unknown, during emergency response to a release of this gas mixture. If respiratory protection is needed, use only protection authorized in the U.S. Federal OSHA Standard (29 CFR 1910.134), applicable U.S. State regulations, or the Canadian CSA Standard Z94.4-93 and applicable standards of Canadian Provinces. Oxygen levels below 19.16.33% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998). The following NIOSH respiratory protection recommendations for Hydrogen Sulfide and Carbon Monoxide are provided for further information.

NIOSH/OSHA RECOMMENDATIONS FOR HYDROGEN SULFIDE CONCENTRATIONS IN AIR:

Up to 100 ppm:	Powered air-purifying respirator with cartridge(s) to protect against hydrogen sulfide; gas mask with canister to protect against hydrogen sulfide; or SAR; or full-facepiece SCBA.
Emergency or Planned Entry into Unknown Concentration or IDLH Conditions:	Positive pressure, full-facepiece SCBA; or positive pressure, full-facepiece SAR with an auxiliary positive pressure SCBA.
Escape:	Gas mask with canister to protect against hydrogen sulfide; or escape-type SCBA
NOTE:	The IDLH concentration for Hydrogen Sulfide is 100 ppm.

NIOSH/OSHA RECOMMENDATIONS FOR CARBON MONOXIDE CONCENTRATIONS IN AIR:

Up to 350 ppm	Supplied Air Respirator (SAR)
Up to 875 ppm	Supplied Air Respirator (SAR) operated in a continuous flow mode.
Up to 1200 ppm	Gas mask with canister to protect against carbon monoxide; or full-facepiece SCBA; or full-facepiece Supplied Air Respirator (SAR).
Emergency or Planned Entry into Unknown Concentration or IDLH Conditions:	Positive pressure, full-facepiece SCBA; or positive pressure, full-facepiece Supplied Air Respirator (SAR) with an auxiliary positive pressure SCBA.
Escape:	Gas mask with canister to protect against carbon monoxide; or escape-type SCBA. **NOTE**: End of Service Life Indicator (ESLI) required for gas masks.
NOTE:	The IDLH concentration for Carbon Monoxide is 1200 ppm.

EYE PROTECTION: Safety glasses. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

HAND PROTECTION: Wear leather gloves when handling cylinders. Chemically resistant gloves should be worn when using this gas mixture. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

BODY PROTECTION: No special protection is needed under normal circumstances of use. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA 29 CFR 1910.136.

9. PHYSICAL and CHEMICAL PROPERTIES

The following information is for Nitrogen, the main component of this gas mixture.

GAS DENSITY @ 32°F (0°C) and 1 atm: .072 lbs/ ft^3 (1.153 kg/m^3)

FREEZING/MELTING POINT @ 10 psig: -345.8°F (-210°C)

SPECIFIC GRAVITY (air = 1) @ 70°F (21.1°C): 0.906

SOLUBILITY IN WATER vol/vol @ 32°F (0°C) and 1 atm: 0.023

EVAPORATION RATE (nBuAc = 1): Not applicable.

VAPOR PRESSURE @ 70°F (21.1°C) (psig): Not applicable.

COEFFICIENT WATER/OIL DISTRIBUTION: Not applicable.

BOILING POINT: -320.4°F (-195.8°C)

pH: Not applicable.

MOLECULAR WEIGHT: 28.01

EXPANSION RATIO: Not applicable.

SPECIFIC VOLUME (ft^3/lb): 13.8

The following information is for this gas mixture.

ODOR THRESHOLD: 0.13 ppm (Hydrogen Sulfide)

APPEARANCE AND COLOR: This gas mixture is a colorless gas which has an rotten egg-like odor, due to the presence of Hydrogen Sulfide.

HOW TO DETECT THIS SUBSTANCE (warning properties): Continuous inhalation of low concentrations of this gas mixture may cause olfactory fatigue, due to the presence of Hydrogen Sulfide, so the odor is not a good warning property of a release of this gas mixture. In terms of leak detection, fittings and joints can be painted with a soap solution to detect leaks, which will be indicated by a bubble formation. Wet lead acetate paper can be used for leak detection. The paper turns black in the presence of Hydrogen Sulfide. Cadmium chloride solutions can also be used. Cadmium solutions will turn yellow upon contact with Hydrogen Sulfide.

10. STABILITY and REACTIVITY

STABILITY: Normally stable in gaseous state.

DECOMPOSITION PRODUCTS: The thermal decomposition products of Methane include carbon oxides. The decomposition products of Hydrogen Sulfide include water and sulfur oxides. The other components of this gas mixture do not decompose, per se, but can react with other compounds in the heat of a fire.

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Titanium will burn in Nitrogen (the main component of this gas mixture). Lithium reacts slowly with Nitrogen at ambient temperatures. Components of this gas mixture (Hydrogen Sulfide, Methane) are also incompatible with strong oxidizers (i.e. chlorine, bromine pentafluoride, oxygen, oxygen difluoride, and nitrogen trifluoride). Carbon Monoxide is mildly corrosive to nickel and iron (especially at high temperatures and pressures). Hydrogen Sulfide is corrosive to most metals, because it reacts with these substances to form metal sulfides.

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Contact with incompatible materials. Cylinders exposed to high temperatures or direct flame can rupture or burst.

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: The following toxicology data are available for the components of this gas mixture:

NITROGEN:

There are no specific toxicology data for Nitrogen. Nitrogen is a simple asphyxiant, which acts to displace oxygen in the environment.

METHANE:

There are no specific toxicology data for Methane. Methane is a simple asphyxiant, which acts to displace oxygen in the environment.

CARBON MONOXIDE:

LC_{50} (Inhalation-Rat) 1807 ppm/4 hours
LC_{50} (Inhalation-Mouse) 2444 ppm/4 hours
LC_{50} (Inhalation-Guinea Pig) 5718 ppm/4 hours
LC_{50} (Inhalation-wild bird species) 1334 ppm
LCLo (Inhalation-Human) 4 mg/m^3/12 hours: Behavioral: coma; Vascular: BP lowering not characterized in autonomic section; Blood: methemoglobinemia-carboxyhemoglobin
LCLo (Inhalation-Man) 4000 ppm/30 minutes
LCLo (Inhalation-Human) 5000 ppm/5 minutes
LCLo (Inhalation-Dog) 4000 ppm/46 minutes
LCLo (Inhalation-Rabbit) 4000 ppm
LCLo (Inhalation-Mammal-species unspecified) 5000 ppm/5 minutes
TCLo (Inhalation-Human) 600 mg/m^3/10 minutes: Behavioral: headache
TCLo (Inhalation-Man) 650 ppm/45 minutes: Blood: methemoglobinemia-carboxyhemoglobin; Behavioral: changes in psychophysiological tests
TCLo (Inhalation-Rat) 1800 ppm/1 hour/14 days-intermittent: Cardiac: other changes
TCLo (Inhalation-Rat) 30 mg/m^3/8 hours/10 weeks-intermittent: Brain and Coverings: other degenerative changes; Behavioral: muscle contraction or spasticity
TCLo (Inhalation-Rat) 96 ppm/24 hours/90 days-continuous: Blood: pigmented or nucleated red blood cells, other changes
TCLo (Inhalation-Rat) 250 ppm/5 hours/20 days-intermittent: Blood :pigmented or nucleated red blood cells, changes in other cell count (unspecified), changes in erythrocyte (RBC) count
TDLo (Subcutaneous-Rat) 5983 mg/kg/18 weeks-intermittent: Blood: changes in serum composition (e.g. TP, bilirubin, cholesterol)
TCLo (Inhalation-Monkey) 200 ppm/24 hours/90 days-continuous: Blood: pigmented or nucleated red blood cells, other changes
TCLo (Inhalation-Rabbit) 200 mg/m^3/3 hours/13 weeks-intermittent: Brain and Coverings: other degenerative changes; Cardiac: other changes; Blood: hemorrhage
TCLo (Inhalation-Guinea Pig) 200 mg/m^3/5 hours/30 weeks-continuous: Cardiac: arrhythmias (including changes in conduction), EKG changes not diagnostic of specified effects, pulse rate increase, without fall in BP

CARBON MONOXIDE (continued):

TCLo (Inhalation-Mouse) 50 ppm/30 days-intermittent: Lungs, Thorax, or Respiration: structural or functional change in trachea or bronchi
TCLo (Inhalation-Guinea Pig) 200 mg/m^3/5 hours/4 weeks-intermittent: Endocrine: hyperglycemia
TCLo (Inhalation-Guinea Pig) 200 ppm/24 hours/90 days-continuous: Blood: pigmented or nucleated red blood cells, other changes
TCLo (Inhalation-Rat) 75 ppm/24 hours: female 0-20 day(s) after conception: Reproductive: Maternal Effects: other effects; Effects on Newborn: behavioral
TCLo (Inhalation-Rat) 150 ppm/24 hours: female 1-22 day(s) after conception: Reproductive: Specific Developmental Abnormalities: cardiovascular (circulatory) system
TCLo (Inhalation-Rat) 150 ppm/24 hours: female 1-22 day(s) after conception: Reproductive: Effects on Newborn: growth statistics (e.g.%, reduced weight gain), behavioral
TCLo (Inhalation-Rat) 1 mg/m^3/24 hours: female 72 day(s) pre-mating: Reproductive: Maternal Effects: menstrual cycle changes or disorders, parturition; Fertility: female fertility index (e.g. # females pregnant per # sperm positive females; # females pregnant per # females mated)
TCLo (Inhalation-Rat) 150 ppm/24 hours: female 0-20 day(s) after conception: Reproductive: Effects on Newborn: behavioral
TCLo (Inhalation-Rat) 75 ppm/24 hours: female 0-20 day(s) after conception: Reproductive: Specific Developmental Abnormalities: immune and reticuloendothelial system
TCLo (Inhalation-Mouse) 65 ppm/24 hours: female 7-18 day(s) after conception: Reproductive: Effects on Newborn: behavioral
TCLo (Inhalation-Mouse) 250 ppm/7 hours: female 6-15 day(s) after conception: Reproductive: Fertility: post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants); Specific Developmental Abnormalities: musculoskeletal system
TCLo (Inhalation-Mouse) 125 ppm/24 hours: female 7-18 day(s) after conception: Reproductive: Effects on Embryo or Fetus: fetotoxicity (except death, e.g., stunted fetus)
TCLo (Inhalation-Mouse) 8 pph/1 hour: female 8 day(s) after conception: Reproductive: Fertility: litter size (e.g. # fetuses per litter; measured before birth); Effects on Embryo or Fetus: fetotoxicity (except death, e.g., stunted fetus), fetal death

CARBON MONOXIDE (continued):

TCLo (Inhalation-Rabbit) 50 ppm/24 hours/8 weeks-continuous: Blood: changes in platelet count
TCLo (Inhalation-Mouse) 8 pph/1 hour: female 8 day(s) after conception: Reproductive: Specific Developmental Abnormalities: Central Nervous System
TCLo (Inhalation-Rabbit) 180 ppm/24 hours: female 1-30 day(s) after conception: Reproductive: Effects on Newborn: stillbirth, viability index (e.g., # alive at day 4 per # born alive)
Micronucleus Test (Inhalation-Mouse)1500 ppm/10 minutes
Sister Chromatid Exchange (Inhalation-Mouse) 2500 ppm/10 minutes

HYDROGEN SULFIDE:

LC_{50} (Inhalation-Rat) 444 ppm: Lungs, Thorax, or Respiration: other changes; Gastrointestinal: hypermotility, diarrhea; Kidney, Ureter, Bladder: urine volume increased
LC_{50} (Inhalation-Mouse) 634 ppm/1 hour
LCLo (Inhalation-Human) 600 ppm/30 minutes
LCLo (Inhalation-Man) 5700 µg/kg: Behavioral: coma; Lungs, Thorax, or Respiration: chronic pulmonary edema
LCLo (Inhalation-Human) 800 ppm/5 minutes
LCLo (Inhalation-Mammal-species unspecified) 800 ppm/5 minutes
TCLo (Inhalation-Rat) 30 ppm/6 hours/10 weeks-intermittent: Sense Organs and Special Senses (Olfaction): olfactory nerve change, effect, not otherwise specified
TCLo (Inhalation-Rat) 1200 mg/m^3/2 hours/5 days-intermittent: Brain and Coverings: other degenerative changes; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: true cholinesterase
TCLo (Inhalation-Rat) 100 ppm/8 hours/5 weeks-intermittent: Brain and Coverings: other degenerative changes; Lungs, Thorax, or Respiration: other changes; Biochemical: Enzyme inhibition, induction, or change in blood or tissue levels: cytochrome oxidases (including oxidative phosphorylation)
TCLo (Inhalation-Rat) 80 ppm/6 hours/90 days-intermittent: Brain and Coverings: changes in brain weight; Nutritional and Gross Metabolic: weight loss or decreased weight gain
TCLo (Inhalation-Rat) 20 ppm: female 6-22 day(s) after conception lactating female 21 day(s) post-birth: Reproductive: Effects on Newborn: physical
TCLo (Inhalation-Mouse) 80 ppm/6 hours/90 days-intermittent: Nutritional and Gross Metabolic: weight loss or decreased weight gain; Related to Chronic Data: death
TCLo (Inhalation-Rabbit) 40 mg/m^3/5 hours/30 weeks-intermittent: Sense Organs and Special Senses (Eye): conjunctive irritation

SUSPECTED CANCER AGENT: The components of this gas mixture are not found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, and IARC; therefore, they are not considered to be, nor suspected to be, cancer-causing agents by these agencies.

IRRITANCY OF PRODUCT: This gas mixture is irritating to the eyes, and may be irritating to the skin.

SENSITIZATION OF PRODUCT: The components of this gas mixture are not known to be skin or respiratory sensitizers.

REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of this gas mixture on the human reproductive system.

Mutagenicity: The components of this gas mixture are not reported to cause mutagenic effects in humans.

REPRODUCTIVE TOXICITY INFORMATION (continued):

Embryotoxicity: This gas mixture contains components that may cause embryotoxic effects in humans; however, due to the small total amount of the components, embryotoxic effects are not expected to occur.

Teratogenicity: This gas mixture is not expected to cause teratogenic effects in humans due to the small cylinder size and small total amount of all components. The Carbon Monoxide component of this gas mixture which exists up to 1%, can cause teratogenic effects in humans. Severe exposure to Carbon Monoxide during pregnancy has caused adverse effects and the death of the fetus. In general, maternal symptoms are an indicator of the potential risk to the fetus since Carbon Monoxide is toxic to the mother before it is toxic to the fetus.

Reproductive Toxicity: The components of this gas mixture are not reported to cause adverse reproductive effects in humans.

A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generation lines. An embryotoxin is a chemical which causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance which interferes in any way with the reproductive process.

BIOLOGICAL EXPOSURE INDICES (BEIs): Biological Exposure Indices (BEIs) have been determined for components of this gas mixture, as follows:

CHEMICAL DETERMINANT	SAMPLING TIME	BEI
CARBON MONOXIDE • Carboxyhemoglobin in blood • Carbon monoxide in end-exhaled air	 • End of shift • End of shift	 • 3.5% of hemoglobin • 20 ppm

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY: The gas will be dissipated rapidly in well-ventilated areas. The following environmental data are applicable to the components of this gas mixture.

CARBON MONOXIDE:

Atmospheric Fate: A photochemical model was used to quantify the sensitivity of the tropospheric oxidants ozone (O_3) and OH to changes in methane (CH_4), Carbon Monoxide (CO), and NO emissions and to perturbations in climate and stratospheric chemistry. In most cases, increased CH_4 and CO emissions will suppress OH (negative coefficients) in increased O_3 (positive coefficients) except in areas where NO and O_3 influenced by pollution are sufficient to increased OH. In most regions, NO, CO, and CH_4 emission increased will suppress OH and increased O_3, but these trends may be opposed by stratospheric O3 depletion and climate change.

HYDROGEN SULFIDE:

Water Solubility = 1 g/242 mL at 20°C.

Plant toxicity: Continuous fumigation of plants with 300 or 3000 ppb Hydrogen Sulfide caused leaf lesions, defoliation, and reduced growth with severity of injury correlated to dose. At higher (3.25 and 5.03 ppm) Hydrogen Sulfide, significant reductions in leaf CO2 and water vapor exchanges occurred, and stomatal openings were depressed. When Hydrogen Sulfide gas was applied to 29 species of green plants for 5 hours, young, rapidly elongating tissues were more sensitive to injury than older tissues. Symptoms included scorching of young shoots and

12. ECOLOGICAL INFORMATION(continued)

leaves, basal and marginal scorching of older leaves. Mature leaves were unaffected. Seeds exposed to Hydrogen Sulfide gas showed delay in germination.

Persistence: Converts to elemental sulfur upon standing in water.

Major Species Threatened: Aquatic and animal life plants may be injured if exposed to 5 ppm in air over 24 hours.

Biodegradation: Microorganisms in soil and water are involved in oxidation-reduction reactions that oxidize hydrogen sulfide to elemental sulfur. Members of the genera Beggiatoa, Thioploca, and Thiotrix function in transition zones between aerobic and anaerobic conditions where both molecular oxygen and hydrogen sulfide are found. Also, some photosynthetic bacteria oxidize hydrogen sulfide to elemental sulfur. Members of the families Chlorobiaceae and Chromatiaceae (purple sulfur bacteria) are obligate aerobes and are phototropic, and are found in waters with high H_2S concentrations. The interactions of these organisms form part of the global sulfur cycle.

Bioconcentration: Does not have bioaccumulation or food chain contamination potential.

NITROGEN: Water Solubility = 2.4 volumes Nitrogen/100 volumes water at 0°C; 1.6 volumes Nitrogen/100 volumes water at 20°C.

EFFECT OF MATERIAL ON PLANTS or ANIMALS: No evidence is currently available on this gas mixture's effects on plant and animal life. Hydrogen Sulfide and Carbon Monoxide, components of this gas mixture, can be deadly to exposed animal life, producing symptoms similar to those experienced by humans. This gas mixture may also be harmful to plant life.

EFFECT OF CHEMICAL ON AQUATIC LIFE: No evidence is currently available on this gas mixture's effects on aquatic life. The presence of more than a trace of the Carbon Monoxide component of this gas mixture is a hazard to fish. The following aquatic toxicity data are available for the Hydrogen Sulfide component of this gas mixture:

HYDROGEN SULFIDE:

LC_{50} (*Asellus* arthropods) 96 hours = 0.111 mg/L

LC_{50} (*Crangon* arthropods) 96 hours = 1.07 mg/L

LC_{50} (*Gammarus* arthropods) 96 hours = 0.84 mg/L

LC_{50} (Ephemera) 96 hours = 0.316 mg/L

LC_{50} (Inhalation-Flies) > 960 minutes = 380 mg/m^3

LC_{50} (Inhalation-Flies) 7 minutes = 1,500 mg/m^3

LC_{50},F (bluegill, eggs) 72 hours = 0.0190 mg/L

HYDROGEN SULFIDE (continued):

LC_{50},F (bluegill, 35-day-old fry) 96 hours = 0.0131 mg/L

LC_{50},F (bluegill, juveniles) 96 hours = 0.0478 mg/L

LC_{50},F (bluegill, adults) 96 hours = 0.0448 mg/L

LC_{50},F (fathead minnows) 96 hours = 0.0071-0.55 mg/L

LC_{50},F (bluegill) 96 hours = 0.0090-0.0140 mg/L

LC_{50},F (brook trout) 96 hours = 0.0216-0.0308 mg/L

Toxic (goldfish) = 100 mg/L

HYDROGEN SULFIDE (continued):

Lethal (goldfish) 96 hours = 10 mg/L

Toxic (carp) 24 hours = 3.3 mg/L

Toxic (goldfish) 24 hours = 4.3 mg/L

Toxic (sunfish) 1 hour = 4.9 to 5.3 mg/L

Toxic (goldfish) 200 hours = 5 mg/L

Toxic (minnows) 24 hours = 5-6 mg/L

Toxic (carp) 24 hours = 6-25 mg/L

Toxic (trout) 15 minutes = 10 mg/L

Toxic (goldfish) 24 hours = 25 mg/L

Toxic (tench) 3 hours = 100 mg/L

MATC,F (fathead minnows) 0.0037 mg/L

MATC,F (bluegill) 0.0004 mg/L

MATC,F (brook trout) 0.055 mg/L

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. Cylinders with undesired residual product may be safely vented outdoors with the proper regulator. For further information, refer to Section 16 (Other Information).

14. TRANSPORTATION INFORMATION

THIS GAS MIXTURE IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.

PROPER SHIPPING NAME: Compressed gases, n.o.s. (*Oxygen, Nitrogen)*or the gas component with the next highest concentration next to Nitrogen.

HAZARD CLASS NUMBER and DESCRIPTION: 2.2 (Non-Flammable Gas)

UN IDENTIFICATION NUMBER: UN 1956

PACKING GROUP: Not Applicable

DOT LABEL(S) REQUIRED: Non-Flammable Gas

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2000): 126

U.S. DEPARTMENT OF TRANSPORTATION INFORMATION (continued):

MARINE POLLUTANT: The components of this gas mixture are not classified by the DOT as Marine Pollutants (as defined by 49 CFR 172.101, Appendix B).

SPECIAL SHIPPING INFORMATION: Cylinders should be transported in a secure position, in a well-ventilated vehicle. The transportation of compressed gas cylinders in automobiles or in closed-body vehicles can present serious safety hazards. If transporting these cylinders in vehicles, ensure these cylinders are not exposed to extremely high temperatures (as may occur in an enclosed vehicle on a hot day). Additionally, the vehicle should be well-ventilated during transportation.

Note: DOT 39 Cylinders ship in a strong outer carton (overpack). Pertinent shipping information goes on the outside of the overpack. DOT 39 Cylinders do not have transportation information on the cylinder itself.

TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This gas mixture is considered as Dangerous Goods, per regulations of Transport Canada.

PROPER SHIPPING NAME: Compressed gases, n.o.s. (*Oxygen, Nitrogen)*or the gas component with the next highest concentration next to Nitrogen.

HAZARD CLASS NUMBER and DESCRIPTION: 2.2 (Non-Flammable Gas)

UN IDENTIFICATION NUMBER: UN 1956

PACKING GROUP: Not Applicable

HAZARD LABEL: Class 2.2 (Non-Flammable Gas)

SPECIAL PROVISIONS: None

EXPLOSIVE LIMIT AND LIMITED QUANTITY INDEX: 0.12

ERAP INDEX: 3000

PASSENGER CARRYING SHIP INDEX: Forbidden

PASSENGER CARRYING ROAD VEHICLE OR PASSENGER CARRYING RAILWAY VEHICLE INDEX: Forbidden

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2000): 126

NOTE: Shipment of compressed gas cylinders via Public Passenger Road Vehicle is a violation of Canadian law (Transport Canada Transportation of Dangerous Goods Act, 1992).

15. REGULATORY INFORMATION

ADDITIONAL U.S. REGULATIONS:

U.S. SARA REPORTING REQUIREMENTS: This gas mixture is subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act, as follows:

CHEMICAL NAME	SARA 302 (40 CFR 355, Appendix A)	SARA 304 (40 CFR Table 302.4)	SARA 313 (40 CFR 372.65)
Hydrogen Sulfide	YES	YES	YES

U.S. SARA THRESHOLD PLANNING QUANTITY: Hydrogen Sulfide = 500 lb (227 kg)

U.S. TSCA INVENTORY STATUS: The components of this gas mixture are listed on the TSCA Inventory.

U.S. CERCLA REPORTABLE QUANTITY (RQ): Hydrogen Sulfide = 100 lb (45 kg)

OTHER U.S. FEDERAL REGULATIONS:

- Hydrogen Sulfide and Carbon Monoxide are subject to the reporting requirements of CFR 29 1910.1000.
- Hydrogen Sulfide and Methane are subject to the reporting requirements of Section 112(r) of the Clean Air Act. The Threshold Quantity for each of these gases is 10,000 pounds and so this mixture will not be affected by the regulation.
- Depending on specific operations involving the use of this gas mixture, the regulations of the Process Safety Management of Highly Hazardous Chemicals may be applicable (29 CFR 1910.119). Hydrogen Sulfide is listed in Appendix A of this regulation. The Threshold Quantity for Hydrogen Sulfide under this regulation is 1500 lbs (and so one cylinder of this gas mixture will not be affected by this regulation).
- This gas mixture does not contain any Class I or Class II ozone depleting chemicals (40 CFR part 82).
- Nitrogen and Oxygen are not listed Regulated Substances, per 40 CFR, Part 68, of the Risk Management for Chemical Releases. Hydrogen Sulfide is listed under this regulation in Table 1 as a Regulated Substance (Toxic Substance), in quantities of 10,000 lbs (4,553 kg) or greater.

15. REGULATORY INFORMATION(continued)

Carbon Monoxide and Methane are listed under this regulation in Table 3, as Regulated Substances (Flammable), in quantities of 10,000 lbs (4,553 kg) or greater, and so this mixture will not be affected by the regulation.

U.S. STATE REGULATORY INFORMATION: The components of this gas mixture are covered under the following specific State regulations:

Alaska - Designated Toxic and Hazardous Substances: Carbon Monoxide, Hydrogen Sulfide, Methane.

California - Permissible Exposure Limits for Chemical Contaminants: Carbon Monoxide, Nitrogen, Hydrogen Sulfide, Methane.

Florida - Substance List: Oxygen, Carbon Monoxide, Hydrogen Sulfide

Illinois - Toxic Substance List: Carbon Monoxide, Methane, Hydrogen Sulfide.

Kansas - Section 302/313 List: No.

Massachusetts - Substance List: Oxygen, Carbon Monoxide, Hydrogen Sulfide, Methane.

Michigan - Critical Materials Register: No.

Minnesota - List of Hazardous Substances: Carbon Monoxide, Hydrogen Sulfide, Methane.

Missouri - Employer Information/Toxic Substance List t: Hydrogen Sulfide, Methane.

New Jersey - Right to Know Hazardous Substance List: Oxygen, Carbon Monoxide, Nitrogen, Methane.

North Dakota - List of Hazardous Chemicals, Reportable Quantities: Hydrogen Sulfide.

Pennsylvania - Hazardous Substance List: Oxygen, Carbon Monoxide, Nitrogen, Hydrogen Sulfide, Methane.

Rhode Island - Hazardous Substance List: Oxygen, Carbon Monoxide, Nitrogen, Hydrogen Sulfide, Methane.

Texas - Hazardous Substance List: Hydrogen Sulfide.

West Virginia - Hazardous Substance List: Hydrogen Sulfide.

Wisconsin - Toxic and Hazardous Substances: Hydrogen Sulfide

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): The Carbon Monoxide component of this gas mixture is on the California Proposition 65 lists. WARNING! This gas mixture contains a compound known to the State of California to cause birth defects or other reproductive harm.

ADDITIONAL CANADIAN REGULATIONS:

CANADIAN DSL/NDSL INVENTORY STATUS: The components of this gas mixture are listed on the DSL Inventory.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: The components of this gas mixture are not on the CEPA Priorities Substances Lists.

CANADIAN WHMIS CLASSIFICATION: This gas mixture is categorized as a Controlled Product, Hazard Classes A and D2A, as per the Controlled Product Regulations.

16. OTHER INFORMATION

INFORMATION ABOUT DOT-39 NRC (Non-Refillable Cylinder) PRODUCTS

DOT 39 cylinders ship as hazardous materials when full. Once the cylinders are relieved of pressure (empty) they are not considered hazardous material or waste. Residual gas in this type of cylinder is not an issue because toxic gas mixtures are prohibited. Calibration gas mixtures typically packaged in these cylinders are Nonflammable n.o.s., UN 1956. A small percentage of calibration gases packaged in DOT 39 cylinders are flammable or oxidizing gas mixtures.

For disposal of used DOT-39 cylinders, it is acceptable to place them in a landfill if local laws permit. Their disposal is no different than that employed with other DOT containers such as spray paint cans, household aerosols, or disposable cylinders of propane (for camping, torch etc.). When feasible, we recommended recycling for scrap metal content. CALGAZ will do this for any customer that wishes to return cylinders to us prepaid. All that is required is a phone call to make arrangements so we may anticipate arrival. Scrapping cylinders involves some preparation before the metal dealer may accept them. We perform this operation as a service to valued customers who want to participate.

MIXTURES: When two or more gases or liquefied gases are mixed, their hazardous properties may combine to create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an Industrial Hygienist or other trained person when you make your safety evaluation of the end product. Remember, gases and liquids have properties which can cause serious injury or death.

Further information about the handling of compressed gases can be found in the following pamphlets published by: Compressed Gas Association Inc. (CGA), 1725 Jefferson Davis Highway, Suite 1004, Arlington, VA 22202-4102. Telephone: (703) 412-0900.

P-1 *"Safe Handling of Compressed Gases in Containers"*

AV-1 *"Safe Handling and Storage of Compressed Gases"*

"Handbook of Compressed Gases"

PREPARED BY: CHEMICAL SAFETY ASSOCIATES, Inc.
PO Box 3519, La Mesa, CA 91944-3519
619/670-0609

Fax on Demand: 1-800/231-1366

AIR LIQUIDE™

This Material Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this gas mixture. To the best of CALGAZ knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this gas mixture is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.

SAFETY DATA SHEET

Helium

Section 1. Identification

GHS product identifier : Helium

Chemical name : Helium

Other means of identification : helium (dot); Helium-4; He; o-Helium; UN 1046

Product use : Synthetic/Analytical chemistry.

Synonym : helium (dot); Helium-4; He; o-Helium; UN 1046

SDS # : 001025

Supplier's details : Airgas USA, LLC and its affiliates
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

Emergency telephone number (with hours of operation) : 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : GASES UNDER PRESSURE - Compressed gas

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.

Precautionary statements

General : Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction.

Prevention : Use and store only outdoors or in a well ventilated place.

Response : Not applicable.

Storage : Protect from sunlight. Protect from sunlight when ambient temperature exceeds 52°C/125°F. Store in a well-ventilated place.

Disposal : Not applicable.

Hazards not otherwise classified : In addition to any other important health or physical hazards, this product may displace oxygen and cause rapid suffocation.

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Section 3. Composition/information on ingredients

Substance/mixture : Substance

Chemical name : Helium

Other means of identification : helium (dot); Helium-4; He; o-Helium; UN 1046

CAS number/other identifiers

CAS number : 7440-59-7

Product code : 001025

Ingredient name	%	CAS number
Helium	100	7440-59-7

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : As this product is a gas, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation : No known significant effects or critical hazards.

Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Ingestion : As this product is a gas, refer to the inhalation section.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

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Section 4. First aid measures

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.

Hazardous thermal decomposition products : No specific data.

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Immediately contact emergency personnel. Stop leak if without risk.

Large spill : Immediately contact emergency personnel. Stop leak if without risk. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

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Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Helium	Oxygen Depletion [Asphyxiant]

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

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Section 8. Exposure controls/personal protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Gas. [Compressed gas.]

Color : Colorless.

Molecular weight : 4 g/mole

Molecular formula : He

Boiling/condensation point : -268.9°C (-452°F)

Melting/freezing point : -272.2°C (-458°F)

Critical temperature : -267.9°C (-450.2°F)

Odor : Odorless.

Odor threshold : Not available.

pH : Not available.

Flash point : [Product does not sustain combustion.]

Burning time : Not applicable.

Burning rate : Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : Not available.

Vapor density : 0.14 (Air = 1) Liquid Density@BP: 7.8 lb/ft3 (125 kg/m3)

Specific Volume (ft ^{3}/lb) : 96.1538

Gas Density (lb/ft ^{3}) : 0.0104

Relative density : Not applicable.

Solubility : Not available.

Solubility in water : Not available.

Partition coefficient: n-octanol/water : 0.28

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

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Section 9. Physical and chemical properties

SADT : Not available.

Viscosity : Not applicable.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

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Section 11. Toxicological information

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation : No known significant effects or critical hazards.

Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.

Ingestion : As this product is a gas, refer to the inhalation section.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

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Section 12. Ecological information

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Helium	0.28	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1046	UN1046	UN1046	UN1046	UN1046
UN proper shipping name	HELIUM, COMPRESSED	HELIUM, COMPRESSED	HELIUM, COMPRESSED	HELIUM, COMPRESSED	HELIUM, COMPRESSED
Transport hazard class(es)	2.2	2.2	2.2	2.2	2.2
Packing group	-	-	-	-	-
Environment	No.	No.	No.	No.	No.
Additional information	**Limited quantity** Yes. **Packaging instruction** **Passenger aircraft** Quantity limitation: 75 kg **Cargo aircraft** Quantity limitation: 150 kg	**Explosive Limit and Limited Quantity Index** 0.125 **Passenger Carrying Road or Rail Index** 75	-	-	**Passenger and Cargo Aircraft**Quantity limitation: 75 kg **Cargo Aircraft Only** Quantity limitation: 150 kg

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

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Section 14. Transport information

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined

United States inventory (TSCA 8b): This material is listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Sudden release of pressure

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Helium	100	No.	Yes.	No.	No.	No.

State regulations

Massachusetts : This material is listed.

New York : This material is not listed.

New Jersey : This material is listed.

Pennsylvania : This material is listed.

Canada inventory : This material is listed or exempted.

International regulations

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Section 15. Regulatory information

International lists : **Australia inventory (AICS)**: This material is listed or exempted.
China inventory (IECSC): This material is listed or exempted.
Japan inventory: Not determined.
Korea inventory: This material is listed or exempted.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): This material is listed or exempted.
Philippines inventory (PICCS): This material is listed or exempted.
Taiwan inventory (CSNN): Not determined.

Chemical Weapons Convention List Schedule I Chemicals : Not listed

Chemical Weapons Convention List Schedule II Chemicals : Not listed

Chemical Weapons Convention List Schedule III Chemicals : Not listed

Canada

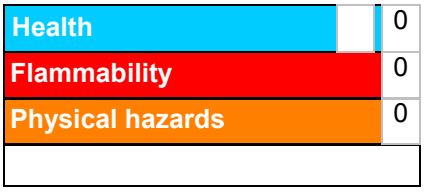
WHMIS (Canada) : Class A: Compressed gas.

CEPA Toxic substances: This material is not listed.
Canadian ARET: This material is not listed.
Canadian NPRI: This material is not listed.
Alberta Designated Substances: This material is not listed.
Ontario Designated Substances: This material is not listed.
Quebec Designated Substances: This material is not listed.

Section 16. Other information

Canada Label requirements : Class A: Compressed gas.

Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

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Section 16. Other information

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of printing : 10/15/2014.

Date of issue/Date of revision : 10/15/2014.

Date of previous issue : 10/2/2014.

Version : 0.02

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United NationsACGIH – American Conference of Governmental Industrial Hygienists
AIHA – American Industrial Hygiene Association
CAS – Chemical Abstract Services
CEPA – Canadian Environmental Protection Act
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act (EPA)
CFR – United States Code of Federal Regulations
CPR – Controlled Products Regulations
DSL – Domestic Substances List
GWP – Global Warming Potential
IARC – International Agency for Research on Cancer
ICAO – International Civil Aviation Organisation
Inh – Inhalation
LC – Lethal concentration
LD – Lethal dosage
NDSL – Non-Domestic Substances List
NIOSH – National Institute for Occupational Safety and Health
TDG – Canadian Transportation of Dangerous Goods Act and Regulations
TLV – Threshold Limit Value
TSCA – Toxic Substances Control Act
WEEL – Workplace Environmental Exposure Level
WHMIS – Canadian Workplace Hazardous Material Information System

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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MATERIAL SAFETY DATA SHEET
HORIBA INSTRUMENTS, INC.
17671 Armstrong Avenue, Irvine, CA 92614
(949) 250-4811

REVISION DATE MAY 2003

SECTION I: MATERIAL IDENTIFICATION

IDENTITY: Potassium hydrogen phthalate
P/N 350623, 527033, 696138-1, 9003001600, 100-4

CHEMICAL FORMULA: $C_6H_4(COOK)(COOH)$ ~1% in water

GENERIC NAME: pH 4 Buffer Solution

CHEMICAL FAMILY: Salt solution

OTHER DESIGNATION: pH 4 Standard Solution, Autocal solution, 100-4

IN CASE OF EMERGENCY CONTACT YOUR REGIONAL PLANT MANAGER

SECTION II: HAZARDOUS INGREDIENTS

Irritant: Eyes, nose and throat, skin.

This product contains the following toxic chemical(s) subject to Section 313 Title III reporting requirements (40 CFR Part 372): NONE

SECTION III: PHYSICAL DATA

MELTING POINT (*): 295-300°C

SPECIFIC GRAVITY (H_2O = 1): 1.636

VAPOR PRESSURE: N/A

PERCENT, VOLATILE BY VOLUME (%): None

SOLUBILITY IN WATER v/v @°C: 1.2% (cool water) CAS #: 877-24-7

APPEARANCE AND ODOR: Colorless liquid

SECTION IV:PHYSICAL DATA

FLASH POINT AND METHOD: N/A

FLAMMABLE LIMITS: None

EXTINGUISHING MEDIA: Determine based on surrounding combustibles.

SPECIAL FIRE FIGHTING PROCEDURES: None

UNUSUAL FIRE AND EXPLOSION HAZARDS: N/A

SECTION V: REACTIVITY DATA

STABILITY: Stable at normal temperature

INCOMPATIBILITY (MATERIALS TO AVOID): None

HAZARDOUS DECOMPOSITION PRODUCTS: None

HAZARDOUS POLYMERIZATION: None

SECTION VI: HEALTH HAZARD DATA

EMERGENCY AND FIRST AID PROCEDURES:

Eyes:	Wash eyes with clean water flowing for 10-15 minutes. Call doctor immediately.
Skin:	Take off contaminated clothing and wash skin with water.
Inhaled:	Move the patient into clear air. Keep patient warm and stable. Loosen clothing and use artificial respiration if necessary. Call doctor immediately.
Swallowed:	Give patient plenty of warm water/milk. Induce vomiting. Call doctor immediately. If patient is unconscious, do not give water/milk, but call doctor immediately.

SECTION VII: SPILL OR LEAK PROCEDURES

Highway or railway spills call Chemtrec (800) 424-9300

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:
Collect as much material as possible. The place of leakage should be washed with plenty of water.

WASTE DISPOSAL METHOD:
Dispose as chemical waste.

SECTION VIII: SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (SPECIFY TYPE):	Not normally required.
VENTILATION:	Not normally required.
OTHER PROTECTIVE EQUIPMENT:	Optional - eye mask, gloves and long-sleeve working clothes.

SECTION IX:SPECIAL PRECAUTIONS

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:
After working, wash hands thoroughly.

OTHER PRECAUTIONS: None.

For the following RAE Part Numbers:

600-0001-000, 600-0002-000

600-0002-001, 600-0026-000

600-0027-000, 600-0069-000

AIR LIQUIDE

MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

1. PRODUCT IDENTIFICATION

CHEMICAL NAME; CLASS: NONFLAMMABLE GAS MIXTURE

Containing One or More of the Following Components in a Nitrogen Balance Gas: Oxygen 0-23.5%; Isobutylene, 0.0005-0.9%

SYNONYMS: Not Applicable
CHEMICAL FAMILY NAME: Not Applicable
FORMULA: Not Applicable
Document Number: 50054

Note: The Material Safety Data Sheet is for this gas mixture supplied in cylinders with 33 cubic feet (935 liters) or less gas capacity (DOT - 39 cylinders). This MSDS has been developed for various gas mixtures with the composition of components within the ranges listed in Section 2 (Composition and Information on Ingredients). Refer to the product label for information on the actual composition of the product.

PRODUCT USE:	Calibration of Monitoring and Research Equipment
SUPPLIER/MANUFACTURER'S NAME:	CALGAZ
ADDRESS:	821 Chesapeake Drive Cambridge, MD 21613
EMERGENCY PHONE:	CHEMTREC: 1-800-424-9300
BUSINESS PHONE:	1-410-228-6400
General MSDS Information:	1-713/868-0440
Fax on Demand:	1-800/231-1366

2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	mole %	EXPOSURE LIMITS IN AIR					
			ACGIH-TLV		OSHA-PEL		NIOSH	OTHER
			TWA ppm	STEL ppm	TWA ppm	STEL ppm	IDLH ppm	ppm
Isobutylene	115-11-7	0.0005-0.9%	There are no specific exposure limits for Isobutylene.					
Oxygen	7782-44-7	0-23.5%	There are no specific exposure limits for Oxygen.					
Nitrogen	7727-37-9	Balance	There are no specific exposure limits for Nitrogen. Nitrogen is a simple asphyxiant (SA). Oxygen levels should be maintained above 19.5%.					

NE = Not Established. See Section 16 for Definitions of Terms Used.

NOTE (1): ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-1998 format. This gas mixture has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: This is a colorless, odorless gas mixture. Releases of this gas mixture may produce oxygen-deficient atmospheres (especially in confined spaces or other poorly-ventilated environments); individuals in such atmospheres may be asphyxiated. Isobutylene, a component of this gas mixture, may cause drowsiness and other central nervous system effects in high concentrations; however, due to its low concentration in this gas mixture, this is unlikely to occur.

SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE: The most significant route of over-exposure for this gas mixture is by inhalation.

INHALATION: Due to the small size of an individual cylinder of this gas mixture, no unusual health effects from over-exposure to the product are anticipated under routine circumstances of use. The chief health hazard associated with this gas mixture is when this gas mixture contains less than 19.5% Oxygen and is released in a small, poorly-ventilated area (i.e. an enclosed or confined space). Under this circumstance, an oxygen-deficient environment may occur. Individuals breathing such an atmosphere may experience symptoms which include headaches, ringing in ears, dizziness, drowsiness, unconsciousness, nausea, vomiting, and depression of all the senses. Under some circumstances of over-exposure, death may occur. The effects associated with various levels of oxygen are as follows:

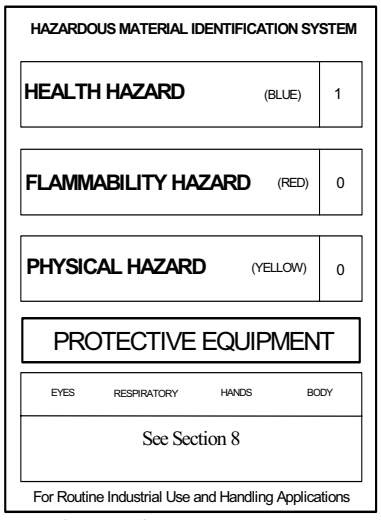
CONCENTRATION OF OXYGEN	OBSERVED EFFECT
12-16% Oxygen:	Breathing and pulse rate increase, muscular coordination slightly disturbed.
10-14% Oxygen:	Emotional upset, abnormal fatigue, disturbed respiration.
6-10% Oxygen:	Nausea, vomiting, collapse, or loss of consciousness.
Below 6%:	Convulsive movements, possible respiratory collapse, and death.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. Over-exposure to this gas mixture may cause the following health effects:

ACUTE: Due to the small size of the individual cylinder of this gas mixture, no unusual health effects from exposure to the product are anticipated under routine circumstances of use. The most significant hazard associated with this gas mixture when it contains less than 19.5% oxygen is the potential for exposure to oxygen-deficient atmospheres. Symptoms of oxygen deficiency include respiratory difficulty, ringing in ears, headaches, shortness of breath, wheezing, headache, dizziness, indigestion, nausea, unconsciousness, and death. The skin of a victim of over-exposure may have a blue color. Additionally, Isobutylene, a component of this gas mixture, may cause drowsiness or central nervous system effects in high concentrations; however, due to its low concentration in this gas mixture, this is unlikely to occur.

CHRONIC: Chronic exposure to oxygen-deficient atmospheres (below 18% oxygen in air) may affect the heart and nervous system.

TARGET ORGANS: ACUTE: Respiratory system, eyes. CHRONIC: Heart, cardiovascular system, central nervous system.



4. FIRST-AID MEASURES

RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO THIS GAS MIXTURE WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. At a minimum, Self-Contained Breathing Apparatus must be worn.

No unusual health effects are anticipated after exposure to this gas mixture, due to the small cylinder size. If any adverse symptom develops after over-exposure to this gas mixture, remove victim(s) to fresh air as quickly as possible. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation if necessary. Victim(s) who experience any adverse effect after over-exposure to this gas mixture must be taken for medical attention. Rescuers should be taken for medical attention if necessary. Take a copy of the label and the MSDS to physician or other health professional with victim(s).

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Acute or chronic respiratory conditions may be aggravated by over-exposure to this gas mixture.

RECOMMENDATIONS TO PHYSICIANS: Administer oxygen, if necessary; treat symptoms and eliminate exposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not applicable.

AUTOIGNITION TEMPERATURE: Not applicable.

FLAMMABLE LIMITS (in air by volume, %):

Lower (LEL): Not applicable.
Upper (UEL): Not applicable.

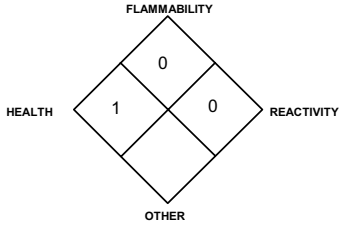
FIRE EXTINGUISHING MATERIALS: Non-flammable gas mixture. Use extinguishing media appropriate for surrounding fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS: This gas mixture is not flammable; however, containers, when involved in fire, may rupture or burst in the heat of the fire.

Explosion Sensitivity to Mechanical Impact: Not sensitive.
Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL FIRE-FIGHTING PROCEDURES: Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment.

NFPA RATING



6. ACCIDENTAL RELEASE MEASURES

LEAK RESPONSE: Due to the small size and content of the cylinder, an accidental release of this gas mixture presents significantly less risk of an oxygen deficient environment and other safety hazards than a similar release from a larger cylinder. However, as with any chemical release, extreme caution must be used during emergency response procedures. In the event of a release in which the atmosphere is unknown, and in which other chemicals are potentially involved, evacuate immediate area. Such releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a leak, clear the affected area, protect people, and respond with trained personnel.

Allow the gas mixture to dissipate. If necessary, monitor the surrounding area (and the original area of the release) for oxygen. Oxygen levels must be above 19.5% before non-emergency personnel are allowed to re-enter area.

If leaking incidentally from the cylinder, contact your supplier.

7. HANDLING and USE

WORK PRACTICES AND HYGIENE PRACTICES: Be aware of any signs of dizziness or fatigue; exposures to fatal concentrations of this gas mixture could occur without any significant warning symptoms, due to oxygen deficiency. Do not attempt to repair, adjust, or in any other way modify the cylinders containing this gas mixture. If there is a malfunction or another type of operational problem, contact nearest distributor immediately.

STORAGE AND HANDLING PRACTICES: Cylinders should be firmly secured to prevent falling or being knocked-over. Cylinders must be protected from the environment, and preferably kept at room temperature (approximately 21°C [70°F]). Cylinders should be stored in dry, well-ventilated areas, away from sources of heat, ignition, and direct sunlight. Protect cylinders against physical damage. Full and empty cylinders should be segregated. Use a first-in, first-out inventory system to prevent full containers from being stored for long periods of time. These cylinders are not refillable. **WARNING! Do not refill DOT 39 cylinders. To do so may cause personal injury or property damage.**

SPECIAL PRECAUTIONS FOR HANDLING GAS CYLINDERS: WARNING! Compressed gases can present significant safety hazards. During cylinder use, use equipment designed for these specific cylinders. Ensure all lines and equipment are rated for proper service pressure.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely. Always use product in areas where adequate ventilation is provided.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: No special ventilation systems or engineering controls are needed under normal circumstances of use. As with all chemicals, use this gas mixture in well-ventilated areas. If this gas mixture is used in a poorly-ventilated area, install automatic monitoring equipment to detect the levels of Nitrous Oxide and Oxygen.

RESPIRATORY PROTECTION: No special respiratory protection is required under normal circumstances of use. Maintain oxygen levels above 19.5% in the workplace. Use supplied air respiratory protection when oxygen levels are below 19.5%, or during emergency response to a release of this gas mixture. During an emergency situation, before entering the area, check the concentration of Methane and Oxygen. If respiratory protection is needed, use only protection authorized in the U.S. Federal OSHA Standard (29 CFR 1910.134), applicable U.S. State regulations, or the Canadian CSA Standard Z94.4-93 and applicable standards of Canadian Provinces. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998).

EYE PROTECTION: Safety glasses. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

HAND PROTECTION: Wear leather gloves when handling cylinders. Chemically resistant gloves should be worn when using this gas mixture. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

BODY PROTECTION: No special protection is needed under normal circumstances of use. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA 29 CFR 1910.136.

9. PHYSICAL and CHEMICAL PROPERTIES

The following information is for Nitrogen, a main component of this gas mixture.

GAS DENSITY @ 32°F (0°C) and 1 atm: 0.072 lbs/ ft^3 (1.153 kg/m^3)

BOILING POINT: -195.8°C (-320.4°F)
FREEZING/MELTING POINT @ 10 psig: -210°C (-345.8°F)
SPECIFIC GRAVITY (air = 1) @ 70°F (21.1°C): 0.906
pH: Not applicable.
SOLUBILITY IN WATER vol/vol @ 32°F (0°C) and 1 atm: 0.023
MOLECULAR WEIGHT: 28.01
EVAPORATION RATE (nBuAc = 1): Not applicable.
EXPANSION RATIO: Not applicable.
ODOR THRESHOLD: Not applicable.
SPECIFIC VOLUME (ft^3/lb): 13.8
VAPOR PRESSURE @ 70°F (21.1°C) psig: Not applicable.
COEFFICIENT WATER/OIL DISTRIBUTION: Not applicable.

The following information is for Oxygen, a main component of this gas mixture.

GAS DENSITY @ 32°F (0°C) and 1 atm: 0.083 lb/cu ft (1.326 kg/m^3)

FREEZING/MELTING POINT @ 10 psig: -218.8°C (-361.8°F)
BOILING POINT: -183.0°C (-297.4°F)
SPECIFIC GRAVITY (air = 1) @ 70°F (21.1°C): 1.105
pH: Not applicable.
SOLUBILITY IN WATER vol/vol at 32°F (0°C) and 1 atm: 0.04.91
MOLECULAR WEIGHT: 32.00
EVAPORATION RATE (nBuAc = 1): Not applicable.
EXPANSION RATIO: Not applicable.
ODOR THRESHOLD: Not applicable.
VOLUME (ft^3/lb): 12.1
VAPOR PRESSURE @ 70°F (21.1°C) psig: Not applicable.
COEFFICIENT WATER/OIL DISTRIBUTION: Not applicable.

The following information is for the gas mixture.

APPEARANCE AND COLOR: This is a colorless, odorless gas mixture.

HOW TO DETECT THIS SUBSTANCE (warning properties): There are no unusual warning properties associated with a release of this gas mixture. In terms of leak detection, fittings and joints can be painted with a soap solution to detect leaks, which will be indicated by a bubble formation.

10. STABILITY and REACTIVITY

STABILITY: Normally stable in gaseous state.
DECOMPOSITION PRODUCTS: The thermal decomposition products of Isobutylene include carbon oxides. The other components of this gas mixture do not decompose, per se, but can react with other compounds in the heat of a fire.
MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Titanium will burn in the Nitrogen component of this gas mixture. Lithium reacts slowly with Nitrogen at ambient temperatures. The Isobutylene component of this gas mixture is also incompatible with strong oxidizers (i.e. chlorine, bromine pentafluoride, oxygen difluoride, and nitrogen trifluoride).
HAZARDOUS POLYMERIZATION: Will not occur.
CONDITIONS TO AVOID: Contact with incompatible materials. Cylinders exposed to high temperatures or direct flame can rupture or burst.

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: The following toxicology data are available for the components of this gas mixture:
ISOBUTYLENE:
LC_{50} (inhalation, rat) = 620,000 mg/kg/4 hours
LC_{50} (inhalation, mouse) = 415,000 mg/kg
NITROGEN:
There are no specific toxicology data for Nitrogen. Nitrogen is a simple asphyxiant, which acts to displace oxygen in the environment.
SUSPECTED CANCER AGENT: The components of this gas mixture are not found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, and IARC; therefore, they are not considered to be, nor suspected to be, cancer-causing agents by these agencies.
IRRITANCY OF PRODUCT: Contact with rapidly expanding gases can be irritating to exposed skin and eyes.
SENSITIZATION TO THE PRODUCT: The components of this gas mixture are not known to cause human skin or respiratory sensitization.
REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of this gas mixture and its components on the human reproductive system.
Mutagenicity: No mutagenicity effects have been described for the components in this gas mixture.
Embryotoxcity: No embryotoxic effects have been described for the components in this gas mixture.
Teratogenicity: No teratogenicity effects have been described for the components in this gas mixture.
Reproductive Toxicity: No reproductive toxicity effects have been described for the components in gas mixture.
A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generation lines. An embryotoxin is a chemical which causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance which interferes in any way with the reproductive process.
BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, Biological Exposure Indices (BEIs) are not applicable for the components of this gas mixture.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY: The components of this gas mixture occur naturally in the atmosphere. The gas will be dissipated rapidly in well-ventilated areas. The following environmental data are applicable to the components of this gas mixture.
OXYGEN: Water Solubility = 1 volume Oxygen/32 volumes water at 20°C. Log K_{ow} = -0.65
NITROGEN: Water Solubility = 2.4 volumes Nitrogen/100 volumes water at 0°C. 1.6 volumes Nitrogen/100 volumes water at 20°C.
EFFECT OF MATERIAL ON PLANTS or ANIMALS: No evidence is currently available on the effects of this gas mixture on plant and animal life.
EFFECT OF CHEMICAL ON AQUATIC LIFE: No evidence is currently available on the effects of this gas mixture on aquatic life.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. Cylinders with undesired residual product may be safely vented outdoors with the proper regulator. For further information, refer to Section 16 (Other Information).

14. TRANSPORTATION INFORMATION

THIS GAS MIXTURE IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.
PROPER SHIPPING NAME: Compressed gases, n.o.s. (*Oxygen, Nitrogen)*or the gas component with the next highest concentration next to Nitrogen.
HAZARD CLASS NUMBER and DESCRIPTION: 2.2 (Non-Flammable Gas)
UN IDENTIFICATION NUMBER: UN 1956
PACKING GROUP: Not applicable.
DOT LABEL(S) REQUIRED: Class 2.2 (Non-Flammable Gas)
NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2000): 126
MARINE POLLUTANT: The components of this gas mixture are not classified by the DOT as Marine Pollutants (as defined by 49 CFR 172.101, Appendix B).
SPECIAL SHIPPING INFORMATION: Cylinders should be transported in a secure position, in a well-ventilated vehicle. The transportation of compressed gas cylinders in automobiles or in closed-body vehicles can present serious safety hazards. If transporting these cylinders in vehicles, ensure these cylinders are not exposed to extremely high temperatures (as may occur in an enclosed vehicle on a hot day). Additionally, the vehicle should be well-ventilated during transportation.
Note: DOT 39 Cylinders ship in a strong outer carton (overpack). Pertinent shipping information goes on the outside of the overpack. DOT 39 Cylinders do not have transportation information on the cylinder itself.
TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This gas is considered as Dangerous Goods, per regulations of Transport Canada.
PROPER SHIPPING NAME: Compressed gases, n.o.s. (*Oxygen, Nitrogen)*or the gas component with the next highest concentration next to Nitrogen.
HAZARD CLASS NUMBER and DESCRIPTION: 2.2 (Non-Flammable Gas)
UN IDENTIFICATION NUMBER: UN 1956
PACKING GROUP: Not Applicable
HAZARD LABEL: Class 2.2 (Non-Flammable Gas)
SPECIAL PROVISIONS: None
EXPLOSIVE LIMIT AND LIMITED QUANTITY INDEX: 0.12
ERAP INDEX: None
PASSENGER CARRYING SHIP INDEX: None
PASSENGER CARRYING ROAD VEHICLE OR PASSENGER CARRYING RAILWAY VEHICLE INDEX: 75
NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2000): 126
NOTE: Shipment of compressed gas cylinders via Public Passenger Road Vehicle is a violation of Canadian law (Transport Canada Transportation of Dangerous Goods Act, 1992).

15. REGULATORY INFORMATION

ADDITIONAL U.S. REGULATIONS:
U.S. SARA REPORTING REQUIREMENTS: The components of this gas mixture are not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.
U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for this gas mixture. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.
U.S. TSCA INVENTORY STATUS: The components of this gas mixture are listed on the TSCA Inventory.
U.S. CERCLA REPORTABLE QUANTITY (RQ): Not applicable.
OTHER U.S. FEDERAL REGULATIONS:
- No component of this gas mixture is subject to the requirements of CFR 29 1910.1000 (under the 1989 PELs).
- Isobutylene is subject to the reporting requirements of Section 112(r) of the Clean Air Act. The Threshold Quantity for this gas is 10,000 pounds.
- The regulations of the Process Safety Management of Highly Hazardous Chemicals are not applicable (29 CFR 1910.119).
- This gas mixture does not contain any Class I or Class II ozone depleting chemicals (40 CFR Part 82).

15. REGULATORY INFORMATION (continued)

- Nitrogen and Oxygen are not listed as Regulated Substances, per 40 CFR, Part 68, of the Risk Management for Chemical Releases. Isobutylene is listed under this regulation in Table 3 as Regulated Substances (Flammable Substances), in quantities of 10,000 lbs (4,554 kg) or greater.

U.S. STATE REGULATORY INFORMATION: The components of this gas mixture are covered under the following specific State regulations:

Alaska - Designated Toxic and Hazardous Substances: No.
California - Permissible Exposure Limits for Chemical Contaminants: Nitrogen.
Florida - Substance List: Oxygen, Isobutylene.
Illinois - Toxic Substance List: No.
Kansas - Section 302/313 List: No.
Massachusetts - Substance List: Oxygen, Isobutylene.
Michigan - Critical Materials Register: No.
Minnesota - List of Hazardous Substances: No.
Missouri - Employer Information/Toxic Substance List: No.
New Jersey - Right to Know Hazardous Substance List: Oxygen, Nitrogen, Isobutylene.
North Dakota - List of Hazardous Chemicals, Reportable Quantities: No.
Pennsylvania - Hazardous Substance List: Oxygen, Nitrogen, Isobutylene.
Rhode Island - Hazardous Substance List: Oxygen, Nitrogen.
Texas - Hazardous Substance List: No.
West Virginia - Hazardous Substance List: No.
Wisconsin - Toxic and Hazardous Substances: : No.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): No component of this gas mixture is on the California Proposition 65 lists.

ADDITIONAL CANADIAN REGULATIONS:
CANADIAN DSL/NDSL INVENTORY STATUS: The components of this gas mixture are listed on the DSL Inventory.
CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: The components of this gas mixture are not on the CEPA Priorities Substances Lists.
CANADIAN WHMIS REGULATIONS: This gas mixture is categorized as a Controlled Product, Hazard Class A, as per the Controlled Product Regulations.

16. OTHER INFORMATION

INFORMATION ABOUT DOT-39 NRC (Non-Refillable Cylinder) PRODUCTS

DOT 39 cylinders ship as hazardous materials when full. Once the cylinders are relieved of pressure (empty) they are not considered hazardous material or waste. Residual gas in this type of cylinder is not an issue because toxic gas mixtures are prohibited. Calibration gas mixtures typically packaged in these cylinders are Nonflammable n.o.s., UN 1956. A small percentage of calibration gases packaged in DOT 39 cylinders are flammable or oxidizing gas mixtures.

For disposal of used DOT-39 cylinders, it is acceptable to place them in a landfill if local laws permit. Their disposal is no different than that employed with other DOT containers such as spray paint cans, household aerosols, or disposable cylinders of propane (for camping, torch etc.). When feasible, we recommended recycling for scrap metal content. CALGAZ will do this for any customer that wishes to return cylinders to us prepaid. All that is required is a phone call to make arrangements so we may anticipate arrival. Scrapping cylinders involves some preparation before the metal dealer may accept them. We perform this operation as a service to valued customers who want to participate.

MIXTURES: When two or more gases or liquefied gases are mixed, their hazardous properties may combine to create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an Industrial Hygienist or other trained person when you make your safety evaluation of the end product. Remember, gases and liquids have properties which can cause serious injury or death.

Further information about the handling of compressed gases can be found in the following pamphlets published by: Compressed Gas Association Inc. (CGA), 1725 Jefferson Davis Highway, Suite 1004, Arlington, VA 22202-4102. Telephone: (703) 412-0900.

P-1 *"Safe Handling of Compressed Gases in Containers"*
AV-1 *"Safe Handling and Storage of Compressed Gases"*
"Handbook of Compressed Gases"

PREPARED BY:
CHEMICAL SAFETY ASSOCIATES, Inc.
PO Box 3519, La Mesa, CA 91944-3519
619/670-0609
Fax on Demand: 1-800/231-1366

AIR LIQUIDE

This Material Safety Data Sheet is offered pursuant to OSHA's Hazard Communication Standard, 29 CFR, 1910.1200. Other government regulations must be reviewed for applicability to this gas mixture. To the best of CALGAZ knowledge, the information contained herein is reliable and accurate as of this date; however, accuracy, suitability or completeness are not guaranteed and no warranties of any type, either express or implied, are provided. The information contained herein relates only to this specific product. If this gas mixture is combined with other materials, all component properties must be considered. Data may be changed from time to time. Be sure to consult the latest edition.

SAFETY DATA SHEET

Creation Date 08-Nov-2010 **Revision Date** 18-Jun-2015 **Revision Number** 2

1. Identification

Product Name **Fluoranthene**

Cat No. : **AC119170000; AC119170250; AC119171000; AC119175000**

Synonyms Benzo[j,k]fluorene

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Entity / Business Name
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute oral toxicity	Category 4

Label Elements

Signal Word
Warning

Hazard Statements
Harmful if swallowed

Precautionary Statements
Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Ingestion
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell

Rinse mouth

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Very toxic to aquatic life with long lasting effects

3. Composition / information on ingredients

Component	CAS-No	Weight %
Fluoranthene	206-44-0	>95

4. First-aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Obtain medical attention.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Obtain medical attention.

Ingestion Do not induce vomiting. Get medical attention.

Most important symptoms/effects No information available.

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Water spray. Carbon dioxide (CO_2). Dry chemical. alcohol-resistant foam.

Unsuitable Extinguishing Media No information available

Flash Point 100 °C / 212 °F

Method - No information available

Autoignition Temperature No information available

Explosion Limits

Upper No data available

Lower No data available

Sensitivity to Mechanical Impact No information available

Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical

Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products

Carbon monoxide (CO) Carbon dioxide (CO_2)

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
2	0	0	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment.

Environmental Precautions See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage.

Methods for Containment and Clean Up Sweep up or vacuum up spillage and collect in suitable container for disposal.

7. Handling and storage

Handling Ensure adequate ventilation. Wear personal protective equipment. Avoid contact with skin and eyes. Do not breathe dust. Do not breathe vapors or spray mist. Avoid dust formation.

Storage Keep in a dry, cool and well-ventilated place. Keep container tightly closed.

8. Exposure controls / personal protection

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Measures Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Powder Solid
Appearance	Light green
Odor	Odorless
Odor Threshold	No information available
pH	No information available
Melting Point/Range	109 - 111 °C / 228.2 - 231.8 °F
Boiling Point/Range	384 - 34 °C / 723.2 - 93.2 °F
Flash Point	100 °C / 212 °F
Evaporation Rate	No information available
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	No information available
Vapor Density	No information available
Relative Density	No information available
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	C16 H10
Molecular Weight	202.25

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products.

Incompatible Materials Strong oxidizing agents

Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO_2)

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information No acute toxicity information is available for this product

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Fluoranthene	2 g/kg (Rat)	3180 mg/kg (Rabbit)	Not listed

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Fluoranthene	206-44-0	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity

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

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Fluoranthene	Not listed	Oncorhynchus mykiss: LC50=0.0077 mg/L 96h	Not listed	EC50: 0.78 mg/L 20h

Persistence and Degradability No information available
Bioaccumulation/ Accumulation No information available.

Mobility .

Component	log Pow
Fluoranthene	5.33

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Fluoranthene - 206-44-0	U120	-

14. Transport information

DOT
- **UN-No** UN3077
- **Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE,SOLID, N.O.S.
- **Proper technical name** (Fluoranthene)
- **Hazard Class** 9
- **Packing Group** III

TDG
- **UN-No** UN3077
- **Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE,SOLID, N.O.S.
- **Hazard Class** 9
- **Packing Group** III

IATA
- **UN-No** UN3077
- **Proper Shipping Name** Environmentally hazardous substance, solid, n.o.s
- **Hazard Class** 9
- **Packing Group** III

IMDG/IMO
- **UN-No** UN3077
- **Proper Shipping Name** Environmentally hazardous substance, solid, n.o.s
- **Hazard Class** 9
- **Packing Group** III

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Fluoranthene	X	-	X	205-912-4	-		-	X	X	X	-

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).

Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Fluoranthene	206-44-0	>95	1.0 0.1

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Fluoranthene	-	-	X	X

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Fluoranthene	100 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Fluoranthene	X	X	X	-	-

U.S. Department of Transportation

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class D1B Toxic materials

16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 08-Nov-2010
Revision Date 18-Jun-2015
Print Date 18-Jun-2015
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer

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End of SDS

SAFETY DATA SHEET

Revision Date 10-Feb-2015 **Revision Number** 1

1. Identification

Product Name **Fluorene**

Cat No. : **AC156130000; AC156130250; AC156131000; AC156135000**

Synonyms Diphenylenemethane

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Entity / Business Name
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification
Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Label Elements
None required

Hazards not otherwise classified (HNOC)
Very toxic to aquatic life with long lasting effects
May form combustible dust concentrations in air

3. Composition / information on ingredients

Component	CAS-No	Weight %
Fluorene	86-73-7	98

4. First-aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated

clothes and shoes. Obtain medical attention.

Inhalation Remove from exposure, lie down. Move to fresh air. Obtain medical attention.

Ingestion Clean mouth with water. Get medical attention.

Most important symptoms/effects No information available.
Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Water spray. Carbon dioxide (CO_2). Dry chemical. chemical foam.

Unsuitable Extinguishing Media No information available

Flash Point 151 °C / 303.8 °F
Method - No information available

Autoignition Temperature Not applicable
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Dust can form an explosive mixture in air. Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous Combustion Products
None known
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
0	1	0	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment.
Environmental Precautions Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained.

Methods for Containment and Clean Up Sweep up or vacuum up spillage and collect in suitable container for disposal. Do not let this chemical enter the environment.

7. Handling and storage

Handling Avoid contact with skin and eyes. Do not breathe dust. Do not ingest.

Storage Keep in a dry, cool and well-ventilated place. Keep container tightly closed.

8. Exposure controls / personal protection

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/face Protection	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
Skin and body protection	Wear appropriate protective gloves and clothing to prevent skin exposure.
Respiratory Protection	No protective equipment is needed under normal use conditions.
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Powder Solid
Appearance	Beige
Odor	Odorless
Odor Threshold	No information available
pH	No information available
Melting Point/Range	112 - 116 °C / 233.6 - 240.8 °F
Boiling Point/Range	298 °C / 568.4 °F @ 760 mmHg
Flash Point	151 °C / 303.8 °F
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	13 hPa @ 146 °C
Vapor Density	Not applicable
Relative Density	1.200
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	Not applicable
Decomposition Temperature	No information available
Viscosity	Not applicable
Molecular Formula	C13 H10
Molecular Weight	166.22

10. Stability and reactivity

Reactive Hazard	None known, based on information available
Stability	Stable under normal conditions.
Conditions to Avoid	Incompatible products.
Incompatible Materials	Strong oxidizing agents
Hazardous Decomposition Products	None under normal use conditions
Hazardous Polymerization	No information available.
Hazardous Reactions	None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information	No acute toxicity information is available for this product
Component Information	

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Fluorene	86-73-7	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known
STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Persistence and Degradability Insoluble in water May persist
Bioaccumulation/ Accumulation No information available.

Mobility . Is not likely mobile in the environment due its low water solubility.

Component	log Pow
Fluorene	4.18

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT Not regulated
TDG Not regulated
IATA
- **UN-No** 3077
- **Proper Shipping Name** ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.*
- **Hazard Class** 9
- **Packing Group** III

IMDG/IMO

UN-No	3077
Proper Shipping Name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Hazard Class	9
Packing Group	III

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Fluorene	X	X	-	201-695-5	-		X	X	X	X	-

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313 Not applicable

SARA 311/312 Hazardous Categorization

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Fluorene	-	-	X	X

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
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Component	Hazardous Substances RQs	CERCLA EHS RQs
Fluorene	5000 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Fluorene	X	X	X	-	-

U.S. Department of Transportation

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class B4 Flammable solid

16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

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End of SDS

Safety Data Sheet

Material Name: Fuel Oil No. 2

SDS No. 0088
EU/CLP GHS

Synonyms: #2 Heating Oil; 2 Oil; Off-road Diesel Fuel

* * * Section 1 - Product and Company Identification * * *

Manufacturer Information

Hess Corporation
1 Hess Plaza
Woodbridge, NJ 07095-0961

Phone: 732-750-6000 Corporate EHS
Emergency # 800-424-9300 CHEMTREC
www.hess.com (Environment, Health, Safety Internet Website)

* * * Section 2 - Hazards Identification * * *

GHS Classification:

Flammable Liquids - Category 3
Acute Toxicity, Inhalation - Category 4
Skin Corrosion/Irritation – Category 2
Eye Damage/Irritation – Category 2
Carcinogenicity - Category 2
Specific Target Organ Toxicity (Single Exposure) – Category 3 (respiratory irritation, narcosis)
Aspiration Hazard – Category 1
Hazardous to the Aquatic Environment, Acute Hazard – Category 3

GHS LABEL ELEMENTS

Symbol(s)

Signal Word

DANGER

Hazard Statements

Flammable liquid and vapor.
Harmful if inhaled.
Causes skin irritation.
Causes eye irritation.
Suspected of causing cancer.
Suspected of causing genetic defects.
May cause respiratory irritation.
May cause drowsiness or dizziness.
May be fatal if swallowed and enters airways.
Harmful to aquatic life.

Precautionary Statements

Prevention

Keep away from heat/sparks/open flames/hot surfaces. No smoking
Keep container tightly closed.
Ground/bond container and receiving equipment.
Use explosion-proof electrical/ventilating/lighting/equipment.
Use only non-sparking tools.
Take precautionary measures against static discharge.
Wear protective gloves/protective clothing/eye protection/face protection.
Avoid breathing fume/mist/vapors/spray.
Use only outdoors or in a well-ventilated area.
Wash hands and forearms thoroughly after handling.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Avoid release to the environment.

Response

In case of fire: Use water spray, fog or foam.
If on skin (or hair): Wash with plenty of soap and water. Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs, get medical advice/attention.
If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center or doctor if you feel unwell.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
If exposed or concerned: Get medical advice/attention.
If swallowed: Immediately all a poison center or doctor/physician if you feel unwell. Do NOT induce vomiting.

Storage

Store in a well ventilated place.
Keep cool. Keep container tightly closed.
Store locked up.

Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

* * * Section 3 - Composition / Information on Ingredients * * *

CAS #	Component	Percent
68476-30-2	Fuel oil No. 2	100
91-20-3	Naphthalene	<0.1

A complex combination of hydrocarbons with carbon numbers in the range C9 and higher produced from the distillation of petroleum crude oil.

* * * Section 4 - First Aid Measures * * *

First Aid: Eyes

In case of contact with eyes, immediately flush with clean, low-pressure water for at least 15 min. Hold eyelids open to ensure adequate flushing. Seek medical attention.

First Aid: Skin

Remove contaminated clothing. Wash contaminated areas thoroughly with soap and water or with waterless hand cleanser. Obtain medical attention if irritation or redness develops.

First Aid: Ingestion

DO NOT INDUCE VOMITING. Do not give liquids. Obtain immediate medical attention. If spontaneous vomiting occurs, lean victim forward to reduce the risk of aspiration. Monitor for breathing difficulties. Small amounts of material which enter the mouth should be rinsed out until the taste is dissipated.

First Aid: Inhalation

Remove person to fresh air. If person is not breathing, provide artificial respiration. If necessary, provide additional oxygen once breathing is restored if trained to do so. Seek medical attention immediately.

* * * Section 5 - Fire Fighting Measures * * *

General Fire Hazards

See Section 9 for Flammability Properties.

Vapors may be ignited rapidly when exposed to heat, spark, open flame or other source of ignition. When mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back. Runoff to sewer may cause fire or explosion hazard.

Hazardous Combustion Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

Extinguishing Media

SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO2, water spray, fire fighting foam, or gaseous extinguishing agent.

LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.

Unsuitable Extinguishing Media

None

Fire Fighting Equipment/Instructions

Small fires in the incipient (beginning) stage may typically be extinguished using handheld portable fire extinguishers and other fire fighting equipment. Firefighting activities that may result in potential exposure to high heat, smoke or toxic by-products of combustion should require NIOSH/MSHA- approved pressure-demand self-contained breathing apparatus with full facepiece and full protective clothing. Isolate area around container involved in fire. Cool tanks, shells, and containers exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.

* * * Section 6 - Accidental Release Measures * * *

Recovery and Neutralization

Carefully contain and stop the source of the spill, if safe to do so.

Materials and Methods for Clean-Up

Take up with sand or other oil absorbing materials. Carefully shovel, scoop or sweep up into a waste container for reclamation or disposal.

Emergency Measures

Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Spills may infiltrate subsurface soil and groundwater; professional assistance may be necessary to determine the extent of subsurface impact.

Personal Precautions and Protective Equipment

Response and clean-up crews must be properly trained and must utilize proper protective equipment (see Section 8).

Environmental Precautions

Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. The use of fire fighting foam may be useful in certain situations to reduce vapors. The proper use of water spray may effectively disperse product vapors or the liquid itself, preventing contact with ignition sources or areas/equipment that require protection.

Prevention of Secondary Hazards

None

* * * Section 7 - Handling and Storage * * *

Handling Procedures

Handle as a combustible liquid. Keep away from heat, sparks, excessive temperatures and open flame! No smoking or open flame in storage, use or handling areas. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion.

Special slow load procedures for "switch loading" must be followed to avoid the static ignition hazard that can exist when this product is loaded into tanks previously containing low flash point products (such as gasoline) - see API Publication 2003, "Protection Against Ignitions Arising Out Of Static, Lightning and Stray Currents."

Storage Procedures

Keep containers closed and clearly labeled. Use approved vented storage containers. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. This storage area should comply with NFPA 30 "Flammable and Combustible Liquid Code". Avoid storage near incompatible materials. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks."

Incompatibilities

Keep away from strong oxidizers; Fluorel ®

* * * Section 8 - Exposure Controls / Personal Protection * * *

Component Exposure Limits

Fuel oil No. 2 (270-671-4)

ACGIH: 100 mg/m3 TWA (inhalable fraction and vapor, as total hydrocarbons, listed under Diesel fuel)
Skin - potential significant contribution to overall exposure by the cutaneous route (listed under Diesel fuel)

Belgium: 100 mg/m3 TWA (as total hydrocarbon, aerosol and vapor)
Skin (listed under Gas oil)

Portugal: 100 mg/m3 TWA [VLE-MP] (aerosol and vapor, as total Hydrocarbons, listed under Fuel diesel)

Naphthalene (202-049-5)

ACGIH: 15 ppm STEL
10 ppm TWA
Skin - potential significant contribution to overall exposure by the cutaneous route

Austria: 10 ppm TWA [TMW]; 50 mg/m3 TWA [TMW]
skin notation

Belgium: 15 ppm STEL; 80 mg/m3 STEL
10 ppm TWA; 53 mg/m3 TWA
Skin

Denmark: 10 ppm TWA; 50 mg/m3 TWA

Finland: 2 ppm STEL; 10 mg/m3 STEL
1 ppm TWA; 5 mg/m3 TWA

France: 10 ppm TWA [VME]; 50 mg/m3 TWA [VME]

Germany: 0.1 ppm TWA AGW (The risk of damage to the embryo or fetus can be excluded when MAK and BAT values are observed, inhalable fraction, exposure factor 1); 0.5 mg/m3 TWA AGW (The risk of damage to the embryo or fetus can be excluded when MAK and BAT values are observed, inhalable fraction, exposure factor 1)

Greece: 10 ppm TWA; 50 mg/m3 TWA

Ireland: 15 ppm STEL; 75 mg/m3 STEL
10 ppm TWA; 50 mg/m3 TWA

Netherlands: 80 mg/m3 STEL
50 mg/m3 TWA

Portugal: 10 ppm TWA [VLE-MP]

Spain: 15 ppm STEL [VLA-EC]; 80 mg/m3 STEL [VLA-EC]
10 ppm TWA [VLA-ED]; 53 mg/m3 TWA [VLA-ED]
skin - potential for cutaneous exposure

Sweden: 10 ppm LLV; 50 mg/m3 LLV
15 ppm STV; 80 mg/m3 STV

Engineering Measures

Use adequate ventilation to keep vapor concentrations of this product below occupational exposure and flammability limits, particularly in confined spaces.

Personal Protective Equipment: Respiratory

A NIOSH/MSHA-approved air-purifying respirator with organic vapor cartridges or canister may be permissible under certain circumstances where airborne concentrations are or may be expected to exceed exposure limits or for odor or irritation. Protection provided by air-purifying respirators is limited.

Use a positive pressure, air-supplied respirator if there is a potential for uncontrolled release, exposure levels are not known, in oxygen-deficient atmospheres, or any other circumstance where an air-purifying respirator may not provide adequate protection.

Personal Protective Equipment: Hands

Gloves constructed of nitrile, neoprene, or PVC are recommended.

Personal Protective Equipment: Eyes

Safety glasses or goggles are recommended where there is a possibility of splashing or spraying.

Personal Protective Equipment: Skin and Body

Chemical protective clothing such as of E.I. DuPont TyChem®, Saranex® or equivalent recommended based on degree of exposure. Note: The resistance of specific material may vary from product to product as well as with degree of exposure. Consult manufacturer specifications for further information.

* * * Section 9 - Physical & Chemical Properties * * *

Appearance:	Red or reddish/orange colored (dyed)	**Odor:**	Mild, petroleum distillate odor
Physical State:	Liquid	**pH:**	ND
Vapor Pressure:	0.009 psia @ 70 °F (21 °C)	**Vapor Density:**	>1.0
Boiling Point:	340 to 700 °F (171 to 371 °C)	**Melting Point:**	ND
Solubility (H2O):	Negligible	**Specific Gravity:**	AP 0.823-0871
Evaporation Rate:	Slow; varies with conditions	**VOC:**	ND
Octanol/H2O Coeff.:	ND	**Flash Point:**	100 °F (38 °C) minimum
Flash Point Method:	PMCC	**Upper Flammability Limit (UFL):**	7.5
Lower Flammability Limit (LFL):	0.6	**Burning Rate:**	ND
Auto Ignition:	494°F (257°C)		

* * * Section 10 - Chemical Stability & Reactivity Information * * *

Chemical Stability

This is a stable material.

Hazardous Reaction Potential

Will not occur.

Conditions to Avoid

Avoid high temperatures, open flames, sparks, welding, smoking and other ignition sources.

Incompatible Products

Keep away from strong oxidizers; Fluorel ®

Hazardous Decomposition Products

Carbon monoxide, carbon dioxide and non-combusted hydrocarbons (smoke).

* * * Section 11 - Toxicological Information * * *

Acute Toxicity

A: General Product Information

Harmful if swallowed.

B: Component Analysis - LD50/LC50

Fuel oil No. 2 (68476-30-2)

Oral LD50 Rat 12 g/kg; Dermal LD50 Rabbit 4720 µL/kg; Dermal LD50 Rabbit >2000 mg/kg; Inhalation LC50 Rat 4.6 mg/L 4 h

Naphthalene (91-20-3)

Inhalation LC50 Rat >340 mg/m3 1 h; Oral LD50 Rat 490 mg/kg; Dermal LD50 Rat >2500 mg/kg; Dermal LD50 Rabbit >20 g/kg

Product Mixture

Oral LD50 Rat 14.5 ml/kg; Dermal LD50 Rabbit >5 mL/kg; Guinea Pig Sensitization: negative; Primary dermal irritation: moderately irritating (Draize mean irritation score - 3.98 rabbits); Draize eye irritation: mildly irritating (Draize score, 48 hours, unwashed - 2.0 rabbits)

Potential Health Effects: Skin Corrosion Property/Stimulativeness

Practically non-toxic if absorbed following acute (single) exposure. May cause skin irritation with prolonged or repeated contact. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed.

Potential Health Effects: Eye Critical Damage/ Stimulativeness

Contact with eyes may cause mild irritation.

Potential Health Effects: Ingestion

Ingestion may cause gastrointestinal disturbances, including irritation, nausea, vomiting and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

Potential Health Effects: Inhalation

Excessive exposure may cause irritations to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

WARNING: the burning of any hydrocarbon as a fuel in an area without adequate ventilation may result in hazardous levels of combustion products, including carbon monoxide, and inadequate oxygen levels, which may cause unconsciousness, suffocation, and death.

Respiratory Organs Sensitization/Skin Sensitization

This product is not reported to have any skin sensitization effects.

Generative Cell Mutagenicity

This product is not reported to have any mutagenic effects. Material of similar composition has been positive in a mutagenicity study.

Carcinogenicity

A: General Product Information

Suspected of causing cancer.

Dermal carcinogenicity: positive - mice

Studies have shown that similar products produce skin tumors in laboratory animals following repeated applications without washing or removal. The significance of this finding to human exposure has not been determined. Other studies with active skin carcinogens have shown that washing the animal's skin with soap and water between applications reduced tumor formation.

This product is similar to Diesel Fuel. IARC classifies whole diesel fuel exhaust particulates as probably carcinogenic to humans (Group 2A) and NIOSH regards it as a potential cause of occupational lung cancer based on animal studies and limited evidence in humans.

B: Component Carcinogenicity

Fuel oil No. 2 (68476-30-2)

ACGIH: A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans (listed under Diesel fuel)

Naphthalene (91-20-3)

ACGIH: A4 - Not Classifiable as a Human Carcinogen
NTP: Reasonably Anticipated To Be A Human Carcinogen (Possible Select Carcinogen)
IARC: Monograph 82 [2002] (Group 2B (possibly carcinogenic to humans))

Reproductive Toxicity

This product is not reported to have any reproductive toxicity effects.

Specified Target Organ General Toxicity: Single Exposure

This product is not reported to have any specific target organ general toxicity single exposure effects.

Specified Target Organ General Toxicity: Repeated Exposure

This product is not reported to have any specific target organ general toxicity repeat exposure effects.

Aspiration Respiratory Organs Hazard

The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

* * * Section 12 - Ecological Information * * *

Ecotoxicity

A: General Product Information

Very toxic to aquatic life with long lasting effects. Keep out of sewers, drainage areas and waterways. Report spills and releases, as applicable, under Federal and State regulations.

B: Component Analysis - Ecotoxicity - Aquatic Toxicity

Fuel oil No. 2 (68476-30-2)

Test & Species		Conditions
96 Hr LC50 Pimephales promelas	35 mg/L [flow-through]	

Naphthalene (91-20-3)

Test & Species		Conditions
96 Hr LC50 Pimephales promelas	5.74-6.44 mg/L [flow-through]	
96 Hr LC50 Oncorhynchus mykiss	1.6 mg/L [flow-through]	

96 Hr LC50 Oncorhynchus mykiss	0.91-2.82 mg/L [static]
96 Hr LC50 Pimephales promelas	1.99 mg/L [static]
96 Hr LC50 Lepomis macrochirus	31.0265 mg/L [static]
72 Hr EC50 Skeletonema costatum	0.4 mg/L
48 Hr LC50 Daphnia magna	2.16 mg/L
48 Hr EC50 Daphnia magna	1.96 mg/L [Flow through]
48 Hr EC50 Daphnia magna	1.09 - 3.4 mg/L [Static]

Persistence/Degradability
No information available.

Bioaccumulation
No information available.

Mobility in Soil
No information available.

* * * Section 13 - Disposal Considerations * * *

Waste Disposal Instructions
See Section 7 for Handling Procedures. See Section 8 for Personal Protective Equipment recommendations.

Disposal of Contaminated Containers or Packaging
Dispose of contents/container in accordance with local/regional/national/international regulations.

* * * Section 14 - Transportation Information * * *

IATA Information
Shipping Name: Heating oil, light
UN #: 1202 **Hazard Class:** 3 **Packing Group:** III

ICAO Information
Shipping Name: Heating oil, light
UN #: 1202 **Hazard Class:** 3 **Packing Group:** III

IMDG Information
Shipping Name: Heating oil, light
UN #: 1202 **Hazard Class:** 3 **Packing Group:** III

* * * Section 15 - Regulatory Information * * *

Regulatory Information

Component Analysis – Inventory

Component/CAS	EC #	EEC	CAN	TSCA
Fuel oil No. 2 68476-30-2	270-671-4	EINECS	DSL	Yes
Naphthalene 91-20-3	202-049-5	EINECS	DSL	Yes

* * * Section 16 - Other Information * * *

Key/Legend

ACGIH = American Conference of Governmental Industrial Hygienists; ADG = Australian Code for the Transport of Dangerous Goods by Road and Rail; ADR/RID = European Agreement of Dangerous Goods by Road/Rail; AS = Standards Australia; DFG = Deutsche Forschungsgemeinschaft; DOT = Department of Transportation; DSL = Domestic Substances List; EEC = European Economic Community; EINECS = European Inventory of Existing Commercial Chemical Substances; ELINCS = European List of Notified Chemical Substances; EU = European Union; HMIS = Hazardous Materials Identification System; IARC = International Agency for Research on Cancer; IMO = International Maritime Organization; IATA = International Air Transport Association; MAK = Maximum Concentration Value in the Workplace; NDSL = Non-Domestic Substances List; NFPA = National Fire Protection Association; NOHSC = National Occupational Health & Safety Commission; NTP = National Toxicology Program; STEL = Short-term Exposure Limit; TDG = Transportation of Dangerous Goods; TLV = Threshold Limit Value; TSCA = Toxic Substances Control Act; TWA = Time Weighted Average

Literature References

None

Other Information

Information presented herein has been compiled from sources considered to be dependable, and is accurate and reliable to the best of our knowledge and belief, but is not guaranteed to be so. Since conditions of use are beyond our control, we make no warranties, expressed or implied, except those that may be contained in our written contract of sale or acknowledgment.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material, even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk in their use of the material.

End of Sheet

SAFETY DATA SHEET

SDS ID NO.: 0127MAR019
Revision Date: 06/01/2016

1. IDENTIFICATION

Product Name: Marathon Petroleum Gasoline - All Grades

Synonym: Gasoline; Regular Unleaded Gasoline; Conventional Regular Unleaded Gasoline; Mid Grade Unleaded Gasoline; Conventional Mid Grade Unleaded Gasoline; Premium Unleaded Gasoline; Conventional Premium Unleaded Gasoline; Sub-Octane Gasoline; Regular RBOB; Super RBOB; Premium RBOB; RBOB; Reformulated Blend Stock For Oxygenated Blending; 84 Octane Gasoline; CBOB; Premium CBOB; Conventional Blend Stock for Oxygenate Blending; Recreational Gasoline; Recreational Gasoline; Recreational Unleaded Gasoline; 89 Recreational Gasoline; Brand 89 Recreational Gasoline; 7.0 Max RVP 89 Recreational Gasoline; BR 7.0 Max RVP 89 Recreational Gasoline; 90 Recreational Gasoline; 90 Marina Gasoline; Brand 91 Recreational Gasoline; 91 Recreational Gasoline; 91 Marina Gasoline; 90 Octane Midgrade Gasoline with No Ethanol; 0125MAR019; 0126MAR019; 0134MAR019; 0313MAR019; 0314MAR019

Chemical Family: Complex Hydrocarbon Substance

Recommended Use: Fuel.
Restrictions on Use: All others.

Manufacturer, Importer, or Responsible Party Name and Address:

MARATHON PETROLEUM COMPANY LP
539 South Main Street
Findlay, OH 45840

SDS information: 1-419-421-3070

Emergency Telephone: 1-877-627-5463

2. HAZARD IDENTIFICATION

Classification

OSHA Regulatory Status
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	Category 1
Skin corrosion/irritation	Category 2
Germ cell mutagenicity	Category 1B
Carcinogenicity	Category 1B
Reproductive toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Aspiration toxicity	Category 1
Acute aquatic toxicity	Category 2
Chronic aquatic toxicity	Category 2

Hazards Not Otherwise Classified (HNOC)

Static accumulating flammable liquid

Label elements

EMERGENCY OVERVIEW

Danger

EXTREMELY FLAMMABLE LIQUID AND VAPOR
May accumulate electrostatic charge and ignite or explode
May be fatal if swallowed and enters airways
Causes skin irritation
May cause respiratory irritation
May cause drowsiness or dizziness
May cause genetic defects
May cause cancer
Suspected of damaging fertility or the unborn child
Toxic to aquatic life with long lasting effects

Appearance Clear yellow liquid **Physical State** Liquid **Odor** Hydrocarbon

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/equipment
Use only non-sparking tools.
Take precautionary measures against static discharge
Avoid breathing mist/vapors/spray
Use only outdoors or in a well-ventilated area
Wear protective gloves/protective clothing/eye protection/face protection
Wash hands and any possibly exposed skin thoroughly after handling
Avoid release to the environment

Precautionary Statements - Response
IF exposed or concerned: Get medical attention
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
If skin irritation occurs: Get medical attention
Wash contaminated clothing before reuse
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor if you feel unwell
IF SWALLOWED: Immediately call a POISON CENTER or doctor
Do NOT induce vomiting
In case of fire: Use water spray, fog or regular foam for extinction
Collect spillage

Precautionary Statements - Storage
Store in a well-ventilated place. Keep container tightly closed
Keep cool
Store locked up

Precautionary Statements - Disposal
Dispose of contents/container at an approved waste disposal plant

3. COMPOSITION/INFORMATION ON INGREDIENTS

Gasoline is a complex combination of hydrocarbons consisting of paraffins, cycloparaffins, aromatic and olefinic hydrocarbons having molecular chains ranging in length from four to ten carbons. May contain small amounts of dye and other additives (>0.02%) which are not considered hazardous at the concentrations used.

Composition Information:

Name	CAS Number	% Concentration
Gasoline	86290-81-5	100
Heptane (mixed isomers)	142-82-5	2.5-26
Pentane (mixed isomers)	78-78-4	6.5-19
Butane (mixed isomers)	106-97-8	0.5-14
Hexane Isomers (other than n-Hexane)	107-83-5	2-12
Toluene	108-88-3	3-9.5
Xylene (mixed isomers)	1330-20-7	3.5-9.5
n-Hexane	110-54-3	0.1-4.5
Cumene	98-82-8	0-4
1,2,4 Trimethylbenzene	95-63-6	1-4
Ethylbenzene	100-41-4	0.5-2.5
Benzene	71-43-2	0.1-1.5
Cyclohexane	110-82-7	0-1.5
Octane	111-65-9	0-1.5
1,2,3-trimethylbenzene	526-73-8	0-1
Naphthalene	91-20-3	0.1-0.5

All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

4. FIRST AID MEASURES

First Aid Measures

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show directions for use or safety data sheet if possible).

Inhalation: Remove to fresh air. If not breathing, institute rescue breathing. If breathing is difficult, ensure airway is clear, give oxygen and continue to monitor. If heart has stopped, immediately begin cardiopulmonary resuscitation (CPR). Keep affected person warm and at rest. If symptoms occur get medical attention.

Skin Contact: Immediately wash exposed skin with plenty of soap and water while removing contaminated clothing and shoes. May be absorbed through the skin in harmful amounts. Get medical attention if irritation persists. Any injection injury from high pressure equipment should be evaluated immediately by a physician as potentially serious (See NOTES TO PHYSICIAN).

Place contaminated clothing in closed container until cleaned or discarded. If clothing is to be laundered, inform the person performing the operation of contaminant's hazardous properties. Destroy contaminated, non-chemical resistant footwear.

Eye Contact: Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Gently remove contacts while flushing. Get medical attention if irritation persists.

Ingestion: Do not induce vomiting because of danger of aspirating liquid into lungs, causing serious damage and chemical pneumonitis. If spontaneous vomiting occurs, keep head below hips, or if patient is lying down, turn body and head to side to prevent aspiration and monitor for breathing difficulty. Never give anything by mouth to an unconscious person. Keep affected person warm and at rest. GET IMMEDIATE MEDICAL ATTENTION.

Most important signs and symptoms, both short-term and delayed with overexposure

Adverse Effects: Irritating to the skin and mucous membranes. Symptoms may include redness, itching, and inflammation. May cause nausea, vomiting, diarrhea, and signs of nervous system depression: headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue. Aspiration hazard. May cause coughing, chest pains, shortness of breath, pulmonary edema and/or chemical pneumonitis. Repeated or prolonged skin contact may cause drying, reddening, itching and cracking.

Indication of any immediate medical attention and special treatment needed

Notes To Physician: INHALATION: This material (or a component) sensitizes the myocardium to the effects of sympathomimetic amines. Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in individuals exposed to this material. Administration of sympathomimetic drugs should be avoided.

SKIN: Leaks or accidents involving high-pressure equipment may inject a stream of material through the skin and initially produce an injury that may not appear serious. Only a small puncture wound may appear on the skin surface but, without proper treatment and depending on the nature, original pressure, volume, and location of the injected material, can compromise blood supply to an affected body part. Prompt surgical debridement of the wound may be necessary to prevent irreversible loss of function and/or the affected body part. High pressure injection injuries may be SERIOUS SURGICAL EMERGENCIES.

INGESTION: This material represents a significant aspiration and chemical pneumonitis hazard. Induction of emesis is not recommended.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
For small fires, Class B fire extinguishing media such as CO2, dry chemical, foam (AFFF/ATC) or water spray can be used. For large fires, water spray, fog or foam (AFFF/ATC) can be used. Firefighting should be attempted only by those who are adequately trained and equipped with proper protective equipment.

Unsuitable extinguishing media
Do not use straight water streams to avoid spreading fire.

Specific hazards arising from the chemical
This product has been determined to be an extremely flammable liquid per the OSHA Hazard Communication Standard and should be handled accordingly. May accumulate electrostatic charge and ignite or explode. Vapors may travel along the ground or be moved by ventilation and ignited by many sources such as pilot lights, sparks, electric motors, static discharge, or other ignition sources at locations distant from material handling. Flashback can occur along vapor trail. For additional fire related information, see NFPA 30 or the Emergency Response Guidebook 128.

Hazardous combustion products
Smoke, carbon monoxide, and other products of incomplete combustion.

Explosion data
Sensitivity to Mechanical Impact No.
Sensitivity to Static Discharge Yes.

Special protective equipment and precautions for firefighters
Firefighters should wear full protective clothing and positive-pressure self-contained breathing apparatus (SCBA) with a full face-piece, as appropriate. Avoid using straight water streams. Water may be ineffective in extinguishing low flash point fires, but can be used to cool exposed surfaces. Avoid excessive water spray application. Water spray and foam (AFFF/ATC) must be applied carefully to avoid frothing and from as far a distance as possible. Keep run-off water out of sewers and water sources.

Additional firefighting tactics
FIRES INVOLVING TANKS OR CAR/TRAILER LOADS: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after the fire is out. Do not direct water at source of leak or safety devices; icing may occur. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles: if this is impossible, withdraw from area and let fire burn.

EVACUATION: Consider initial downwind evacuation for at least 1000 feet. If tank, rail car or tank truck is involved in a fire, ISOLATE for 5280 feet (1 mile) in all directions; also, consider initial evacuation of 5280 feet (1 mile) in all directions.

NFPA	Health 1	Flammability 3	Instability 0	Special Hazard -

6. ACCIDENTAL RELEASE MEASURES

Personal precautions:	Keep public away. Isolate and evacuate area. Shut off source if safe to do so. Eliminate all ignition sources.
Protective equipment:	Use personal protection measures as recommended in Section 8.
Emergency procedures:	Advise authorities and National Response Center (800-424-8802) if the product has entered a water course or sewer. Notify local health and pollution control agencies, if appropriate.
Environmental precautions:	Avoid release to the environment. Avoid subsoil penetration. Ethanol in gasoline phase seperates in contact with water. Monitor downstream for dissolved ethanol or other appropriate indicators.
Methods and materials for containment:	Contain liquid with sand or soil. Prevent spilled material from entering storm drains, sewers, and open waterways.
Methods and materials for cleaning up:	Use suitable absorbent materials such as vermiculite, sand, or clay to clean up residual liquids. Recover and return free product to proper containers. When recovering free liquids ensure all equipment is grounded and bonded. Use only non-sparking tools.

7. HANDLING AND STORAGE

Safe Handling Precautions:

NEVER SIPHON THIS PRODUCT BY MOUTH. Use appropriate grounding and bonding practices. Static accumulating flammable liquid. Bonding and grounding may be insufficient to eliminate the hazard from static electricity. Do not expose to heat, open flames, strong oxidizers or other sources of ignition. Vapors may travel along the ground or be moved by ventilation. Flashback may occur along vapor trails. No smoking. Use only non-sparking tools. Avoid contact with skin, eyes and clothing. Avoid breathing fumes, gas, or vapors. Use only with adequate ventilation. Avoid repeated and prolonged skin contact. Use personal protection measures as recommended in Section 8. Exercise good personal hygiene including removal of soiled clothing and prompt washing with soap and water. Do not cut, drill, grind or weld on empty containers since explosive residues may remain. Refer to applicable EPA, OSHA, NFPA and consistent state and local requirements.

Hydrocarbons are basically non-conductors of electricity and can become electrostatically charged during mixing, filtering, pumping at high flow rates or loading and transfer operations. If this charge reaches a sufficiently high level, sparks can form that may ignite the vapors of flammable liquids. Sudden release of hot organic chemical vapors or mists from process equipment operating under elevated temperature and pressure, or sudden ingress of air into vacuum equipment may result in ignition of vapors or mists without the presence of obvious ignition sources. Nozzle spouts must be kept in contact with the containers or tank during the entire filling operation.

Portable containers should never be filled while in or on a motor vehicle or marine craft. Containers should be placed on the ground. Static electric discharge can ignite fuel vapors when filling non-grounded containers or vehicles on trailers. The nozzle spout must be kept in contact with the container before and during the entire filling operation. Use only approved containers.

A buildup of static electricity can occur upon re-entry into a vehicle during fueling especially in cold or dry climate conditions. The charge is generated by the action of dissimilar fabrics (i.e., clothing and upholstery) rubbing across each other as a person enters/exits the vehicle. A flash fire can result from this discharge if sufficient flammable vapors are present. Therefore, do not get back in your vehicle while refueling.

Cellular phones and other electronic devices may have the potential to emit electrical charges (sparks). Sparks in potentially explosive atmospheres (including fueling areas such as gas stations) could cause an explosion if sufficient flammable vapors are present. Therefore, turn off cellular phones and other electronic devices when working in potentially explosive atmospheres or keep devices inside your vehicle during refueling.

High-pressure injection of any material through the skin is a serious medical emergency even though the small entrance wound at the injection site may not initially appear serious. These injection injuries can occur from high-pressure equipment such as paint spray or grease or guns, fuel injectors, or pinhole leaks in hoses or hydraulic lines and should all be considered serious. High pressure injection injuries may be SERIOUS SURGICAL EMERGENCIES (See First Aid Section 4).

Storage Conditions:

Store in properly closed containers that are appropriately labeled and in a cool, well-ventilated area. Do not store near an open flame, heat or other sources of ignition.

Incompatible Materials

Strong oxidizing agents.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Name	ACGIH TLV	OSHA PELS:	OSHA - Vacated PELs	NIOSH IDLH
Gasoline 86290-81-5	300 ppm TWA 500 ppm STEL	-	300 ppm TWA 900 mg/m^3 TWA 500 ppm STEL 1500 mg/m^3 STEL	-

Heptane (mixed isomers) 142-82-5	400 ppm TWA 500 ppm STEL	TWA: 500 ppm TWA: 2000 mg/m³	400 ppm TWA 1600 mg/m³ TWA 500 ppm STEL 2000 mg/m³ STEL	750 ppm
Pentane (mixed isomers) 78-78-4	1000 ppm TWA	-	-	-
Butane (mixed isomers) 106-97-8	1000 ppm STEL	-	800 ppm TWA 1900 mg/m³ TWA	-
Hexane Isomers (other than n-Hexane) 107-83-5	500 ppm TWA 1000 ppm STEL	-	500 ppm TWA 1800 mg/m³ TWA 1000 ppm STEL 3600 mg/m³ STEL	-
Toluene 108-88-3	20 ppm TWA	TWA: 200 ppm Ceiling: 300 ppm	100 ppm TWA 375 mg/m³ TWA 150 ppm STEL 560 mg/m³ STEL	500 ppm
Xylene (mixed isomers) 1330-20-7	100 ppm TWA 150 ppm STEL	TWA: 100 ppm TWA: 435 mg/m³	100 ppm TWA 435 mg/m³ TWA 150 ppm STEL 655 mg/m³ STEL	900 ppm
n-Hexane 110-54-3	50 ppm TWA Skin - potential significant contribution to overall exposure by the cutaneous route	TWA: 500 ppm TWA: 1800 mg/m³	50 ppm TWA 180 mg/m³ TWA	1100 ppm
Cumene 98-82-8	50 ppm TWA	TWA: 50 ppm TWA: 245 mg/m³ Skin	50 ppm TWA 245 mg/m³ TWA Limit applies to skin	900 ppm
1,2,4 Trimethylbenzene 95-63-6	25 ppm TWA	-	25 ppm TWA 125 mg/m³ TWA	-
Ethylbenzene 100-41-4	20 ppm TWA	TWA: 100 ppm TWA: 435 mg/m³	100 ppm TWA 435 mg/m³ TWA 125 ppm STEL 545 mg/m³ STEL	800 ppm
Benzene 71-43-2	0.5 ppm TWA 2.5 ppm STEL Skin - potential significant contribution to overall exposure by the cutaneous route	TWA: 10 ppm (applies to industry segments exempt from the benzene standard) TWA: 1 ppm STEL: 5 ppm (see 29 CFR 1910.1028)	25 ppm Ceiling 1 ppm TWA 5 ppm STEL	500 ppm
Cyclohexane 110-82-7	100 ppm TWA	TWA: 300 ppm TWA: 1050 mg/m³	300 ppm TWA 1050 mg/m³ TWA	1300 ppm
Octane 111-65-9	300 ppm TWA	TWA: 500 ppm TWA: 2350 mg/m³	300 ppm TWA 1450 mg/m³ TWA 375 ppm STEL 1800 mg/m³ STEL	1000 ppm
1,2,3-trimethylbenzene 526-73-8	25 ppm TWA	-	25 ppm TWA 125 mg/m³ TWA	-
Naphthalene 91-20-3	10 ppm TWA Skin - potential significant contribution to overall exposure by the cutaneous route	TWA: 10 ppm TWA: 50 mg/m³	10 ppm TWA 50 mg/m³ TWA 15 ppm STEL 75 mg/m³ STEL	250 ppm

Notes: The manufacturer has voluntarily elected to provide exposure limits contained in OSHA's 1989 air contaminants standard in its SDSs, even though certain of those exposure limits were vacated in 1992.

Engineering measures: Local or general exhaust required in an enclosed area or when there is inadequate ventilation. Use mechanical ventilation equipment that is explosion-proof.

Personal protective equipment

Eye protection: Use goggles or face-shield if the potential for splashing exists.

Skin and body protection: Use nitrile rubber, Viton® or PVA gloves for repeated or prolonged skin exposure. Glove suitability is based on workplace conditions and usage. Contact the glove manufacturer for specific advice on glove selection and breakthrough times.

Respiratory protection: Use a NIOSH approved organic vapor chemical cartridge or supplied air respirators when there is the potential for airborne exposures to exceed permissible exposure limits or if excessive vapors are generated. Observe respirator assigned protection factors (APFs) criteria cited in federal OSHA 29 CFR 1910.134. Self-contained breathing apparatus should be used for fire fighting.

Hygiene measures: Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid
Appearance	Clear yellow liquid
Color	Yellow
Odor	Hydrocarbon
Odor Threshold	No data available.

Property	**Values (Method)**
Melting Point / Freezing Point	No data available.
Initial Boiling Point / Boiling Range	24-210 °C / 75-410 °F (ASTM D86)
Flash Point	-43 °C / -45 °F
Evaporation Rate	No data available.
Flammability (solid, gas)	Not applicable.
Flammability Limit in Air (%):	
Upper Flammability Limit:	7.6
Lower Flammability Limit:	1.4
Explosion limits:	No data available.
Vapor Pressure	5.5-15 psi (ASTM D4814)
Vapor Density	3-4
Specific Gravity / Relative Density	0.70-0.76
Water Solubility	No data available.
Solubility in other solvents	No data available.
Partition Coefficient	2.13-4.5
Decomposition temperature	No data available.
pH:	Not applicable
Autoignition Temperature	280 °C / 536 °F
Kinematic Viscosity	No data available.
Dynamic Viscosity	No data available.
Explosive Properties	No data available.
VOC Content (%)	100%
Density	No data available.
Bulk Density	Not applicable.

10. STABILITY AND REACTIVITY

Reactivity The product is non-reactive under normal conditions.

Chemical stability The material is stable at 70°F, 760 mmHg pressure.

Possibility of hazardous reactions None under normal processing.

Hazardous polymerization Will not occur.

Conditions to avoid Excessive heat, sources of ignition, open flame.

Incompatible Materials Strong oxidizing agents.

Hazardous decomposition products None known under normal conditions of use.

11. TOXICOLOGICAL INFORMATION

Potential short-term adverse effects from overexposures

Inhalation May cause irritation of respiratory tract. May cause drowsiness or dizziness. Breathing high concentrations of this material in a confined space or by intentional abuse can cause irregular heartbeats which can cause death.

Eye contact Exposure to vapor or contact with liquid may cause mild eye irritation, including tearing, stinging, and redness.

Skin contact Causes skin irritation. Effects may become more serious with repeated or prolonged contact. May be absorbed through the skin in harmful amounts.

Ingestion May be fatal if swallowed or vomited and enters airways. May cause irritation of the mouth, throat and gastrointestinal tract.

Acute toxicological data

Name	Oral LD50	Dermal LD50	Inhalation LC50
Gasoline 86290-81-5	14000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.2 mg/L (Rat) 4 h
Heptane (mixed isomers) 142-82-5	-	3000 mg/kg (Rabbit)	103 g/m³ (Rat) 4 h
Pentane (mixed isomers) 78-78-4	-	-	450 mg/L (Mouse) 2 h
Butane (mixed isomers) 106-97-8	-	-	658 mg/L (Rat) 4 h
Hexane Isomers (other than n-Hexane) 107-83-5	> 5000 mg/kg (Rat)	-	-
Toluene 108-88-3	> 2000 mg/kg (Rat)	8390 mg/kg (Rabbit)	12.5 mg/L (Rat) 4 h
Xylene (mixed isomers) 1330-20-7	> 2000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.04 mg/L (Rat) 4 h
n-Hexane 110-54-3	15000 mg/kg (Rat)	3000 mg/kg (Rabbit)	48000 ppm (Rat) 4 h
Cumene 98-82-8	> 2000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 20 mg/L (Rat) 6 h
1,2,4 Trimethylbenzene 95-63-6	3280 mg/kg (Rat)	> 3160 mg/kg (Rabbit)	18,000 mg/m³ (Rat) 4 h
Ethylbenzene 100-41-4	> 2000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	17.2 mg/L (Rat) 4 h
Benzene 71-43-2	> 2000 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	> 20 mg/l (Rat) 4 h
Cyclohexane 110-82-7	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	13.9 mg/L (Rat) 4 h
Octane 111-65-9	-	-	118 g/m³ (Rat) 4 h
1,2,3-trimethylbenzene 526-73-8	-	-	-
Naphthalene 91-20-3	490 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 340 mg/m³ (Rat) 1 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

NAPHTHAS: In a large epidemiological study on over 15,000 employees at several petroleum refineries and amongst residents located near these refineries, no increased risk of kidney cancer was observed in association with gasoline exposures (a similar material). In a similar study, no increased risk of kidney cancer was observed among petroleum refinery workers, but there was a slight trend in the incidence of kidney cancers among service station employees, especially after a 30-year latency period. Altered mental state, drowsiness, peripheral motor neuropathy, irreversible brain damage (so-called Petrol Sniffer's Encephalopathy), delirium, seizures, and sudden death have been reported from repeated overexposure to some hydrocarbon solvents, naphthas, and gasoline.

ISOPARAFFINS: Studies in laboratory animals have shown that long-term exposure to similar materials (isoparaffins) can cause kidney damage and kidney cancer in male laboratory rats. However, in-depth research indicates that these findings are unique to the male rat, and that these effects are not relevant to humans.

C9 AROMATIC HYDROCARBONS: A developmental inhalation study was conducted in laboratory mice. Increased implantation losses, reduced fetal weights, delayed ossification and an increased incidence of cleft palate were observed at the highest exposure level (1,500 ppm). This exposure level was extremely toxic to pregnant female mice (44% mortality). Reduced fetal body weights were also observed at 500 ppm. A multi-generation reproduction inhalation study was conducted in laboratory rats. Reductions in pup weights, pup weight gain, litter size, and pup survival were observed at 1,500 ppm, an exposure level at which significant maternal toxicity was observed. Reduced pup weight gain was also observed at 500 ppm.

PENTANES: Studies of pentane isomers in laboratory animals indicate exposure to extremely high levels (roughly 10 vol.%) may induce cardiac arrhythmias (irregular heartbeats) which may be serious or fatal.

BUTANES: Studies in laboratory animals indicate exposure to extremely high levels of butanes (1-10 or higher vol.% in air) may cause cardiac arrhythmias (irregular heartbeats) which may be serious or fatal.

TOLUENE: Case studies of persons abusing toluene suggest isolated incidences of adverse effects on the fetus including birth defects. Abuse of toluene at high concentrations (e.g., glue sniffing and solvent abuse) has been associated with adverse effects on the liver, kidney and nervous system, and can cause CNS depression, cardiac arrhythmias, and death. Studies of workers indicate longterm exposure may be related to impaired color vision and hearing. Some studies of workers suggest longterm exposure may be related to neurobehavioral and cognitive changes. Some of these effects have been observed in laboratory animals following repeated exposure to high levels of toluene. Several studies of workers suggest longterm exposure may be related to small increases in spontaneous abortions and changes in some gonadotropic hormones. However, the weight of evidence does not indicate toluene is a reproductive hazard to humans. Studies in laboratory animals indicate some changes in reproductive organs following high levels of exposure, but no significant effects on mating performance or reproduction were observed. Case studies of persons abusing toluene suggest isolated incidences of adverse effects on the fetus including birth defects. Findings in laboratory animals have been largely negative. Positive findings include small increases in minor skeletal and visceral malformations and developmental delays following very high levels of maternal exposure. Studies of workers indicate long-term exposure may be related to effects on the liver, kidney and blood, but these appear to be limited to changes in serum enzymes and decreased leukocyte counts. Adverse effects on the liver, kidney, thymus and nervous system were observed in animal studies following very high levels of exposure. The relevance of these findings to humans is not clear at this time.

XYLENES, ALL ISOMERS: Overexposure to xylene may cause upper respiratory tract irritation, headache, cyanosis, blood serum changes, nervous system damage and narcosis. Effects may be increased by the use of alcoholic beverages. Evidence of liver and kidney impairment were reported in workers recovering from a gross overexposure. Effects from Prolonged or Repeated Exposure: Impaired neurological function was reported

in workers exposed to solvents including xylene. Studies in laboratory animals have shown evidence of impaired hearing following high levels of exposure. Studies in laboratory animals suggest some changes in reproductive organs following high levels of exposure but no significant effects on reproduction were observed. Studies in laboratory animals indicate skeletal and visceral malformations, developmental delays, and increased fetal resorptions following extremely high levels of maternal exposure with evidence of maternal toxicity. The relevance of these observations to humans is not clear at this time. Adverse effects on the liver, kidney, bone marrow (changes in blood cell parameters) were observed in laboratory animals following high levels of exposure. The relevance of these observations to humans is not clear at this time.

1,2,4-TRIMETHYLBENZENE: The following information pertains to a mixture of C9 aromatic hydrocarbons, over 40% of which was composed of 1,2,4-trimethylbenzene. A developmental inhalation study was conducted in laboratory mice. Increased implantation losses, reduced fetal weights, delayed ossification and an increased incidence of cleft palate were observed at the highest exposure level (1,500 ppm). This exposure level was extremely toxic to pregnant female mice (44% mortality). Reduced fetal body weights were also observed at 500 ppm. A multi-generation reproduction inhalation study was conducted in laboratory rats. Reductions in pup weights, pup weight gain, litter size, and pup survival were observed at 1,500 ppm, an exposure level at which significant maternal toxicity was observed. Reduced pup weight gain was also observed at 500 ppm. Embryotoxicity has been reported in studies of laboratory animals. Adverse effects included increased implantation losses, reduced fetal weights, delayed ossification and an increased incidence of cleft palate.<n><n>

N-HEXANE: Long-term or repeated exposure to n-hexane can cause peripheral nerve damage. Initial symptoms are numbness of the fingers and toes. Also, motor weakness can occur in the digits, but may also involve muscles of the arms, thighs and forearms. The onset of these symptoms may be delayed for several months to a year after the beginning of exposure. Testicular atrophy and partial to full loss of the germ cell line were observed in sub-chronic high-dose inhalation studies of laboratory rodents. These effects appeared irreversible. Rodent reproduction studies have shown evidence of reduced fetal weight but no frank malformations.

CUMENE: Overexposure to cumene may cause upper respiratory tract irritation and CNS depression. Studies in laboratory animals indicate evidence of respiratory tract hyperplasia, and adverse effects on the liver, kidney and adrenal glands following high level exposure. The relevance of these findings to humans is not clear at this time. Findings from lifetime laboratory rodent inhalation studies were as follows: In F344/N rats: an increased incidence of renal carcinomas and adenomas, respiratory epithelial adenomas, and interstitial cell adenomas of the testes. In B6C3F1 mice: an increased incidence of carcinomas and adenomas of the bronchi and lung, liver neoplasms, hemangiosarcomas of the spleen, and adenomas of the thyroid.

ETHYLBENZENE: Findings from a 2-year inhalation study in rodents conducted by NTP were as follows: Effects were observed only at the highest exposure level (750 ppm). At this level the incidence of renal tumors was elevated in male rats (tubular carcinomas) and female rats (tubular adenomas). The incidence of tumors was also elevated in male mice (alveolar and bronchiolar carcinomas) and female mice (hepatocellular carcinomas). IARC has classified ethyl benzene as "possibly carcinogenic to humans" (Group 2B). Studies in laboratory animals indicate some evidence of post-implantation deaths following high levels of maternal exposure. The relevance of these findings to humans is not clear at this time. Studies in laboratory animals indicate limited evidence of renal malformations, resorptions, and developmental delays following high levels of maternal exposure with evidence of maternal toxicity. The relevance of these findings to humans is not clear at this time. Studies in laboratory animals have demonstrated evidence of ototoxicity (hearing loss) following exposure levels as low as 300 ppm for 5 days. Studies in laboratory animals indicate some evidence of adverse effects on the liver, kidney, thyroid, and pituitary gland.

BENZENE: Studies of workers exposed to benzene show clear evidence that overexposure can cause cancer and other diseases of the blood forming organs including Acute

Myelogenous Leukemia (AML), and Aplastic Anemia (AA), an often fatal disease. Some studies suggest overexposure to benzene may also be associated with Myelodysplastic Syndrome (MDS). Findings from a case control study of workers exposed to benzene was reported during the 2009 Benzene Symposium in Munich included an increase in Acute Myeloid Leukemias and Non-Hodgkins Lymphoid Neoplasms (NHLN) of the subtype follicular lymphoma (FL) in some occupational categories. Some studies of workers exposed to benzene have shown an association with increased rates of chromosome aberrations in circulating lymphocytes. One study of women workers exposed to benzene suggested a weak association with irregular menstruation. However, other studies of workers exposed to benzene have not demonstrated clear evidence of an effect on fertility or reproductive outcome in humans. Benzene can cross the placenta and affect the developing fetus. Cases of AA have been reported in the offspring of persons severely overexposed to benzene. Studies in laboratory animals indicate that prolonged, repeated exposure to high levels of benzene vapor can cause bone marrow suppression and cancer in multiple organ systems. Studies in laboratory animals show evidence of adverse effects on male reproductive organs following high levels of exposure but no significant effects on reproduction have been observed. Embryotoxicity has been reported in studies of laboratory animals but effects were limited to reduced fetal weight and minor skeletal variations. Benzene has been classified as a proven human carcinogen by OSHA and a Group 1 (Carcinogenic to Humans) material by IARC. The current proposed IARC classification for benzene is summarized as follows: Sufficient evidence for Acute Myeloid Leukemia; limited evidence for Acute Lymphatic Leukemia, Chronic Lymphatic Leukemia, Non-Hodgkin Lymphoma, and Multiple Myeloma.

NAPHTHALENE: Severe jaundice, neurotoxicity (kernicterus) and fatalities have been reported in young children and infants as a result of hemolytic anemia from overexposure to naphthalene. Persons with glucose 6-phosphate dehydrogenase (G6PD) deficiency are more prone to the hemolytic effects of naphthalene. Adverse effects on the kidney have been reported in persons overexposed to naphthalene but these effects are believed to be a consequence of hemolytic anemia, and not a direct effect. Hemolytic anemia has been observed in laboratory animals exposed to naphthalene. Laboratory rodents exposed to naphthalene vapor for 2 years (lifetime studies) developed non-neoplastic and neoplastic tumors and inflammatory lesions of the nasal and respiratory tract. Cataracts and other adverse effects on the eye have been observed in laboratory animals exposed to high levels of naphthalene. Findings from a large number of bacterial and mammalian cell mutation assays have been negative. A few studies have shown chromosomal effects (elevated levels of Sister Chromatid Exchange or chromosomal aberrations) in vitro. Naphthalene has been classified as Possibly Carcinogenic to Humans (2B) by IARC, based on findings from studies in laboratory animals.

CARBON MONOXIDE: is a chemical asphyxiant with no warning properties (such as odor). At 400-500 ppm for 1 hour headache and dyspnea may occur. If activity is increased, symptoms of overexposure may include nausea, irritability, increased respiration, tinnitus, sweating, chest pain, confusion, impaired judgement, dizziness, weakness, drowsiness, ataxia, irregular heart beat, cyanosis and pallor. Levels in excess of 1000 ppm can result in collapse, loss of conciousness, respiratory failure and death. Extremely high concentrations (12,800 ppm) can cause immediate unconsciousness and death in 1-3 minutes. Repeated anoxia can lead to central nervous system damage and peripheral neuropathy, with loss of sensation in the fingers, amnesia, and mental deterioration and possible congestive heart failure. Damage may also occur to the fetus, lung, liver, kidney, spleen, cardiovascular system and other organs.

WHOLLY-VAPORIZED UNLEADED GASOLINE: Lifetime exposure to wholly vaporized unleaded gasoline produced an increased incidence of liver tumors in female mice exposed to the highest exposure concentration (2056 ppm) and α-2 urinary globulin-mediated kidney tumors in male rats. No exposure-related tumors were observed in male mice or female rats. The male-specific rat kidney tumors are not considered relevant to human health. Mice receiving lifetime repeated skin application of various petroleum naphthas exhibited an irritation-dependent increased incidence of skin tumors. Additional studies suggest that these tumors occur through a mechanism that may not be relevant to human health. Epidemiological data from over 18,000 petroleum marketing and distribution workers

showed no increased risk of leukemia, multiple myeloma, or kidney cancer resulting from gasoline exposure. Unleaded gasoline has been identified as possibly carcinogenic to humans (2B) by the International Agency for Research on Cancer (IARC).

COMBUSTION ENGINE EXHAUST: Chronic inhalation studies of gasoline engine exhaust in mice, rats and hamsters did not produce any carcinogenic effects. Condensates/extracts of gasoline engine exhaust produced an increase in tumors compared to controls when testing by skin painting, subcutaneous injection, intratracheal instillation or implantation into the lungs. Gasoline exhaust has been classified as possibly carcinogenic to humans (2B) by the International Agency for Research on Cancer (IARC).

Adverse effects related to the physical, chemical and toxicological characteristics

Signs and Symptoms Irritating to the skin and mucous membranes. Symptoms may include redness, itching, and inflammation. May cause nausea, vomiting, diarrhea, and signs of nervous system depression: headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue. Aspiration hazard. May cause coughing, chest pains, shortness of breath, pulmonary edema and/or chemical pneumonitis. Repeated or prolonged skin contact may cause drying, reddening, itching and cracking.

Sensitization Not expected to be a skin or respiratory sensitizer.

Mutagenic effects May cause genetic defects.

Carcinogenicity May cause cancer.

Cancer designations are listed in the table below

Name	ACGIH (Class)	IARC (Class)	NTP	OSHA
Gasoline 86290-81-5	Confirmed animal carcinogen (A3)	Possible human carcinogen (2B)	Not Listed	Not Listed
Heptane (mixed isomers) 142-82-5	Not Listed	Not Listed	Not Listed	Not Listed
Pentane (mixed isomers) 78-78-4	Not Listed	Not Listed	Not Listed	Not Listed
Butane (mixed isomers) 106-97-8	Not Listed	Not Listed	Not Listed	Not Listed
Hexane Isomers (other than n-Hexane) 107-83-5	Not Listed	Not Listed	Not Listed	Not Listed
Toluene 108-88-3	Not Classifiable (A4)	Not Classifiable (3)	Not Listed	Not Listed
Xylene (mixed isomers) 1330-20-7	Not classifiable (A4)	Not classifiable (3)	Not Listed	Not Listed
n-Hexane 110-54-3	Not Listed	Not Listed	Not Listed	Not Listed
Cumene 98-82-8	Not listed	Possible human carcinogen (2B)	Reasonably anticipated to be a human carcinogen	Not listed
1,2,4 Trimethylbenzene 95-63-6	Not Listed	Not Listed	Not Listed	Not Listed
Ethylbenzene 100-41-4	Confirmed animal carcinogen (A3)	Possible human carcinogen (2B)	Not Listed	Not Listed
Benzene 71-43-2	Confirmed human carcinogen (A1)	Carcinogenic to humans (1)	Known to be human carcinogen	Known carcinogen
Cyclohexane 110-82-7	Not Listed	Not Listed	Not Listed	Not Listed
Octane 111-65-9	Not Listed	Not Listed	Not Listed	Not Listed
1,2,3-trimethylbenzene 526-73-8	Not Listed	Not Listed	Not Listed	Not Listed
Naphthalene 91-20-3	Confirmed animal carcinogen (A3)	Possible human carcinogen (2B)	Reasonably anticipated to be a human carcinogen	Not Listed

Reproductive toxicity Suspected of damaging fertility or the unborn child.

Specific Target Organ Toxicity (STOT) - single exposure Respiratory system. Central nervous system.

Specific Target Organ Toxicity (STOT) - repeated exposure Not classified.

Aspiration hazard May be fatal if swallowed or vomited and enters airways.

12. ECOLOGICAL INFORMATION

Ecotoxicity This product should be considered toxic to aquatic organisms, with the potential to cause long lasting adverse effects in the aquatic environment.

Name	Algae/aquatic plants	Fish	Toxicity to Microorganisms	Crustacea
Gasoline 86290-81-5	72-hr EC50 = 56 mg/l Algae	96-hr LC50 = 11 mg/l Rainbow trout (static)	-	48-hr LC50 = 7.6 mg/l Daphnia magna
Heptane (mixed isomers) 142-82-5	-	96-hr LC50 = 375 mg/L Tilapia	-	-
Pentane (mixed isomers) 78-78-4	-	96-hr LC50 = 3.1 mg/L Rainbow trout	-	48-hr EC50 = >1 - <10 mg/L Daphnia magna
Butane (mixed isomers) 106-97-8	-	-	-	-
Hexane Isomers (other than n-Hexane) 107-83-5	-	-	-	-
Toluene 108-88-3	72-hr EC50 = 12.5 mg/l Algae	96-hr LC50 <= 10 mg/l Rainbow trout	-	48-hr EC50 = 5.46-9.83 mg/l Daphnia magna 48-hr EC50 = 11.5 mg/l Daphnia magna (Static)
Xylene (mixed isomers) 1330-20-7	72-hr EC50 = 11 mg/l Algae	96-hr LC50 = 8 mg/l Rainbow trout	-	48-hr LC50 = 3.82 mg/l Daphnia magna
n-Hexane 110-54-3	-	96-hr LC50 = 2.5 mg/l Fathead minnow	-	-
Cumene 98-82-8	72-hr EC50 = 2.6 mg/l Algae	96-hr LC50 = 6.04-6.61 mg/l Fathead minnow (Flow-through) 96-hr LC50 = 2.7 mg/l Rainbow trout (semi-static)	-	48-hr EC50 = 7.9-14.1 mg/l Daphnia magna (static)
1,2,4 Trimethylbenzene 95-63-6	-	96-hr LC50 = 7.19-8.28 mg/l Fathead minnow (flow-through)	-	48-hr EC50 = 6.14 mg/L Daphnia magna
Ethylbenzene 100-41-4	72-hr EC50 = 1.7-7.6 mg/l Algae	96-hr LC50 = 4 mg/L Rainbow trout	-	48-hr EC50 = 1-4 mg/L Daphnia magna
Benzene 71-43-2	72-hr EC50 = 29 mg/l Algae	96-hr LC50 = 5.3 mg/l Rainbow trout (flow-through)	-	48-hr EC50 = 8.76-15.6 mg/l Daphnia magna (Static)
Cyclohexane 110-82-7	72-hr EC50 = 500 mg/l Algae	96-hr LC50 = 3.96-5.18 mg/l Fathead minnow	-	48-hr EC50 = 1.7-3.5 mg/L Bay shrimp
Octane 111-65-9	-	-	-	48-hr LC50 = 0.38 mg/l Daphnia magna
1,2,3-trimethylbenzene 526-73-8	-	96-hr LC50 = 7.72 mg/l Fathead Minnow (flow-through)	-	-
Naphthalene 91-20-3	-	96-hr LC50 = 0.91-2.82 mg/l Rainbow trout (static) 96-hr LC50 = 1.99 mg/l Fathead minnow (static)	-	48-hr LC50 = 1.6 mg/l Daphnia magna

Persistence and degradability Expected to be inherently biodegradable. The presence of ethanol in this product may impede the biodegradation of benzene, toluene, ethylbenzene and xylene in groundwater, resulting in elongated plumes of these constituents.

Bioaccumulation Has the potential to bioaccumulate.

Mobility in soil May partition into air, soil and water.

Other adverse effects No information available.

13. DISPOSAL CONSIDERATIONS

Description of Waste Residues
This material may be a flammable liquid waste.

Safe Handling of Wastes
Handle in accordance with applicable local, state, and federal regulations. Use personal protection measures as required. Use appropriate grounding and bonding practices. Use only non-sparking tools. Do not expose to heat, open flames, strong oxidizers or other sources of ignition. No smoking.

Disposal of Wastes / Methods of Disposal
The user is responsible for determining if any discarded material is a hazardous waste (40 CFR 262.11). Dispose of in accordance with federal, state and local regulations.

Methods of Contaminated Packaging Disposal
Empty containers should be completely drained and then discarded or recycled, if possible. Do not cut, drill, grind or weld on empty containers since explosive residues may be present. Dispose of in accordance with federal, state and local regulations.

14. TRANSPORT INFORMATION

DOT (49 CFR 172.101):

UN Proper Shipping Name:	Gasoline
UN/Identification No:	UN 1203
Transport Hazard Class(es):	3
Packing Group:	II

TDG (Canada):

UN Proper Shipping Name:	Gasoline
UN/Identification No:	UN 1203
Transport Hazard Class(es):	3
Packing Group:	II

15. REGULATORY INFORMATION

US Federal Regulatory Information:

US TSCA Chemical Inventory Section 8(b): This product and/or its components are listed on the TSCA Chemical Inventory.

EPA Superfund Amendment & Reauthorization Act (SARA):

SARA Section 302: This product does not contain any component(s) included on EPA's Extremely Hazardous Substance (EHS) List.

Name	CERCLA/SARA - Section 302 Extremely Hazardous Substances and TPQs
Gasoline	NA
Heptane (mixed isomers)	NA
Pentane (mixed isomers)	NA
Butane (mixed isomers)	NA
Hexane Isomers (other than n-Hexane)	NA
Toluene	NA
Xylene (mixed isomers)	NA

n-Hexane	NA
Cumene	NA
1,2,4 Trimethylbenzene	NA
Ethylbenzene	NA
Benzene	NA
Cyclohexane	NA
Octane	NA
1,2,3-trimethylbenzene	NA
Naphthalene	NA

SARA Section 304: This product may contain component(s) identified either as an EHS or a CERCLA Hazardous substance which in case of a spill or release may be subject to SARA reporting requirements:

Name	Hazardous Substances RQs
Gasoline	NA
Heptane (mixed isomers)	NA
Pentane (mixed isomers)	NA
Butane (mixed isomers)	NA
Hexane Isomers (other than n-Hexane)	NA
Toluene	1000 lb final RQ 454 kg final RQ
Xylene (mixed isomers)	100 lb final RQ 45.4 kg final RQ
n-Hexane	5000 lb final RQ 2270 kg final RQ
Cumene	5000 lb final RQ 2270 kg final RQ
1,2,4 Trimethylbenzene	NA
Ethylbenzene	1000 lb final RQ 454 kg final RQ
Benzene	10 lb final RQ 4.54 kg final RQ
Cyclohexane	1000 lb final RQ 454 kg final RQ
Octane	NA
1,2,3-trimethylbenzene	NA
Naphthalene	100 lb final RQ 45.4 kg final RQ

SARA: The following EPA hazard categories apply to this product:

Acute Health Hazard
Chronic Health Hazard
Fire Hazard

SARA Section 313: This product may contain component(s), which if in exceedance of the de minimus threshold, may be subject to the reporting requirements of SARA Title III Section 313 Toxic Release Reporting (Form R).

Name	CERCLA/SARA 313 Emission reporting:
Gasoline	None
Heptane (mixed isomers)	None
Pentane (mixed isomers)	None
Butane (mixed isomers)	None
Hexane Isomers (other than n-Hexane)	None
Toluene	1.0 % de minimis concentration
Xylene (mixed isomers)	1.0 % de minimis concentration
n-Hexane	1.0 % de minimis concentration
Cumene	1.0 % de minimis concentration

1,2,4 Trimethylbenzene	1.0 % de minimis concentration
Ethylbenzene	0.1 % de minimis concentration
Benzene	0.1 % de minimis concentration
Cyclohexane	1.0 % de minimis concentration
Octane	None
1,2,3-trimethylbenzene	None
Naphthalene	0.1 % de minimis concentration

State and Community Right-To-Know Regulations:
The following component(s) of this material are identified on the regulatory lists below:

Gasoline

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 0957
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Not Listed
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Carcinogen; Flammable - third degree
New Jersey - Environmental Hazardous Substances List:	SN 0957 TPQ: 10000 lb (Under N.J.A.C. 7:1G, environmental hazardous substances in mixtures such as gasoline or new and used petroleum oil may be reported under these categories)
Illinois - Toxic Air Contaminants:	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

Heptane (mixed isomers)

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 1339
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Flammable - third degree
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

Pentane (mixed isomers)

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 1064
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Not Listed
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed

California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Flammable - fourth degree
New Jersey - Environmental Hazardous Substances List:	SN 1064 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

Butane (mixed isomers)

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 0273
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Flammable - fourth degree
New Jersey - Environmental Hazardous Substances List:	SN 0273 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

Hexane Isomers (other than n-Hexane)

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 1285
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Not Listed
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Flammable - third degree
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

Toluene

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Developmental toxicity, initial date 1/1/91 Female reproductive toxicity, initial date 8/7/09
New Jersey Right-To-Know:	SN 1866
Pennsylvania Right-To-Know:	Environmental hazard
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic (skin); Flammable (skin)
Michigan Critical Materials Register List:	100 lb Annual usage threshold
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed

New Jersey - Special Hazardous Substances:	Flammable - third degree; Teratogen
New Jersey - Environmental Hazardous Substances List:	SN 1866 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	1000 lb RQ (air); 1 lb RQ (land/water)

Xylene (mixed isomers)

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 2014
Pennsylvania Right-To-Know:	Environmental hazard
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic (skin); Flammable (skin)
Michigan Critical Materials Register List:	100 lb Annual usage threshold all isomers
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Flammable - third degree
New Jersey - Environmental Hazardous Substances List:	SN 2014 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	1000 lb RQ (air); 1 lb RQ (land/water)

n-Hexane

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 1340
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Flammable - third degree
New Jersey - Environmental Hazardous Substances List:	SN 1340 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	1 lb RQ (air); 1 lb RQ (land/water)

Cumene

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Carcinogen, initial date 4/6/10
New Jersey Right-To-Know:	SN 0542
Pennsylvania Right-To-Know:	Environmental hazard
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic (skin); Flammable (skin)
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Flammable - third degree
New Jersey - Environmental Hazardous Substances List:	SN 0542 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Present

New York - Reporting of Releases Part 597 - List of Hazardous Substances:	5000 lb RQ (air); 1 lb RQ (land/water)

1,2,4 Trimethylbenzene

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 1929
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants:	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

Ethylbenzene

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Carcinogen, initial date 6/11/04
New Jersey Right-To-Know:	SN 0851
Pennsylvania Right-To-Know:	Environmental hazard
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Carcinogen; flammable - Third degree
New Jersey - Environmental Hazardous Substances List:	SN 0851 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	1000 lb RQ (air); 1 lb RQ (land/water)

Benzene

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Carcinogen, initial date 2/27/87 Developmental toxicity, initial date 12/26/97 Male reproductive toxicity, initial date 12/26/97
New Jersey Right-To-Know:	SN 0197
Pennsylvania Right-To-Know:	Environmental hazard; Special hazardous substance
Massachusetts Right-To Know:	Carcinogen; Extraordinarily hazardous
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic (skin); Flammable (skin); Carcinogen (skin)
Michigan Critical Materials Register List:	100 lb Annual usage threshold
Massachusetts Extraordinarily Hazardous Substances:	Carcinogen; Extraordinarily hazardous
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Present
New Jersey - Special Hazardous Substances:	Carcinogen; Flammable - third degree; Mutagen
New Jersey - Environmental Hazardous Substances List:	SN 0197 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	10 lb RQ (air); 1 lb RQ (land/water)

Cyclohexane

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 0565
Pennsylvania Right-To-Know:	Environmental hazard
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Flammable - third degree
New Jersey - Environmental Hazardous Substances List:	SN 0565 TPQ: 500 lb
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	1000 lb RQ (air); 1 lb RQ (land/water)

Octane

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 1434
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Flammable - third degree
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants:	Not Listed
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

1,2,3-trimethylbenzene

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Not Listed
New Jersey Right-To-Know:	SN 1929
Pennsylvania Right-To-Know:	Present
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Not Listed
New Jersey - Environmental Hazardous Substances List:	Not Listed
Illinois - Toxic Air Contaminants:	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	Not Listed

Naphthalene

Louisiana Right-To-Know:	Not Listed
California Proposition 65:	Carcinogen, initial date 4/19/02
New Jersey Right-To-Know:	SN 1322 SN 3758

Pennsylvania Right-To-Know:	Environmental hazard Present (particulate)
Massachusetts Right-To Know:	Present
Florida Substance List:	Not Listed
Rhode Island Right-To-Know:	Toxic; Flammable
Michigan Critical Materials Register List:	Not Listed
Massachusetts Extraordinarily Hazardous Substances:	Not Listed
California - Regulated Carcinogens:	Not Listed
Pennsylvania RTK - Special Hazardous Substances:	Not Listed
New Jersey - Special Hazardous Substances:	Carcinogen
New Jersey - Environmental Hazardous Substances List:	SN 1322 TPQ: 500 lb (Reportable at the de minimis quantity of >0.1%)
Illinois - Toxic Air Contaminants:	Present
New York - Reporting of Releases Part 597 - List of Hazardous Substances:	100 lb RQ (air); 1 lb RQ (land/water)

Canada DSL/NDSL Inventory: This product and/or its components are listed either on the Domestic Substances List (DSL) or are exempt.

Canadian Regulatory Information: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the (M)SDS contains all the information required by the Controlled Products Regulations.

Name	Canada - WHMIS: Classifications of Substances:	Canada - WHMIS: Ingredient Disclosure:
Gasoline	B2,D2A,D2B	0.1%
Heptane (mixed isomers)	B2,D2B	1%
Pentane (mixed isomers)	B2	1%
Butane (mixed isomers)	A,B1	1%
Hexane Isomers (other than n-Hexane)	B2	1%
Toluene	B2,D2A,D2B	0.1%
Xylene (mixed isomers)	B2,D2A,D2B	m-, o-isomers 1.0%; p-isomer 0.1%
n-Hexane	B2,D2A,D2B	1%
Cumene	B2,D2A	0.1%
1,2,4 Trimethylbenzene	B3,D2B	1%
Ethylbenzene	B2,D2A,D2B	0.1%
Benzene	B2,D2A,D2B	0.1%
Cyclohexane	B2,D2B	1%
Octane	B2,D2B	1%
1,2,3-trimethylbenzene	B3	1%
Naphthalene	B4,D2A	0.1%

Note: Not applicable.

16. OTHER INFORMATION

Prepared By Toxicology and Product Safety

Revision Date: 06/01/2016

Revision Note:

Revised Sections

The following sections (§) have been updated:
1. IDENTIFICATION
2. HAZARD IDENTIFICATION
3. COMPOSITION/INFORMATION ON INGREDIENTS
4. FIRST AID MEASURES
6. ACCIDENTAL RELEASE MEASURES
7. HANDLING AND STORAGE
8. EXPOSURE CONTROLS/PERSONAL PROTECTION
9. PHYSICAL AND CHEMICAL PROPERTIES
11. TOXICOLOGICAL INFORMATION
12. ECOLOGICAL INFORMATION
15. REGULATORY INFORMATION

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information is intended as guidance for safe handling, use, processing, storage, transportation, accidental release, clean-up and disposal and is not considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

SAFETY DATA SHEET

Helium

Section 1. Identification

GHS product identifier : Helium

Chemical name : Helium

Other means of identification : helium (dot); Helium-4; He; o-Helium; UN 1046

Product use : Synthetic/Analytical chemistry.

Synonym : helium (dot); Helium-4; He; o-Helium; UN 1046

SDS # : 001025

Supplier's details : Airgas USA, LLC and its affiliates
259 North Radnor-Chester Road
Suite 100
Radnor, PA 19087-5283
1-610-687-5253

Emergency telephone number (with hours of operation) : 1-866-734-3438

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture : GASES UNDER PRESSURE - Compressed gas

GHS label elements

Hazard pictograms :

Signal word : Warning

Hazard statements : Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.

Precautionary statements

General : Read and follow all Safety Data Sheets (SDS'S) before use. Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand. Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use. Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction.

Prevention : Use and store only outdoors or in a well ventilated place.

Response : Not applicable.

Storage : Protect from sunlight. Protect from sunlight when ambient temperature exceeds 52°C/125°F. Store in a well-ventilated place.

Disposal : Not applicable.

Hazards not otherwise classified : In addition to any other important health or physical hazards, this product may displace oxygen and cause rapid suffocation.

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Section 3. Composition/information on ingredients

Substance/mixture : Substance

Chemical name : Helium

Other means of identification : helium (dot); Helium-4; He; o-Helium; UN 1046

CAS number/other identifiers

CAS number : 7440-59-7

Product code : 001025

Ingredient name	%	CAS number
Helium	100	7440-59-7

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.

Inhalation : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Skin contact : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur. Wash clothing before reuse. Clean shoes thoroughly before reuse.

Ingestion : As this product is a gas, refer to the inhalation section.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact : Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation : No known significant effects or critical hazards.

Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.

Frostbite : Try to warm up the frozen tissues and seek medical attention.

Ingestion : As this product is a gas, refer to the inhalation section.

Over-exposure signs/symptoms

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

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Section 4. First aid measures

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.

Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : Contains gas under pressure. In a fire or if heated, a pressure increase will occur and the container may burst or explode.

Hazardous thermal decomposition products : No specific data.

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Contact supplier immediately for specialist advice. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Avoid breathing gas. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Ensure emergency procedures to deal with accidental gas releases are in place to avoid contamination of the environment. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill : Immediately contact emergency personnel. Stop leak if without risk.

Large spill : Immediately contact emergency personnel. Stop leak if without risk. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

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Section 7. Handling and storage

Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8). Contains gas under pressure. Avoid contact with eyes, skin and clothing. Avoid breathing gas. Empty containers retain product residue and can be hazardous. Do not puncture or incinerate container. Use equipment rated for cylinder pressure. Close valve after each use and when empty. Protect cylinders from physical damage; do not drag, roll, slide, or drop. Use a suitable hand truck for cylinder movement.

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities : Store in accordance with local regulations. Store in a segregated and approved area. Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Keep container tightly closed and sealed until ready for use. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C (125 °F).

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Helium	Oxygen Depletion [Asphyxiant]

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

Environmental exposure controls : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

Skin protection

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Section 8. Exposure controls/personal protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical state : Gas. [Compressed gas.]

Color : Colorless.

Molecular weight : 4 g/mole

Molecular formula : He

Boiling/condensation point : -268.9°C (-452°F)

Melting/freezing point : -272.2°C (-458°F)

Critical temperature : -267.9°C (-450.2°F)

Odor : Odorless.

Odor threshold : Not available.

pH : Not available.

Flash point : [Product does not sustain combustion.]

Burning time : Not applicable.

Burning rate : Not applicable.

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Not available.

Vapor pressure : Not available.

Vapor density : 0.14 (Air = 1) Liquid Density@BP: 7.8 lb/ft3 (125 kg/m3)

Specific Volume (ft ^{3}/lb) : 96.1538

Gas Density (lb/ft ^{3}) : 0.0104

Relative density : Not applicable.

Solubility : Not available.

Solubility in water : Not available.

Partition coefficient: n-octanol/water : 0.28

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

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Section 9. Physical and chemical properties

SADT : Not available.

Viscosity : Not applicable.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : No specific data.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Irritation/Corrosion

Not available.

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

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Section 11. Toxicological information

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Contact with rapidly expanding gas may cause burns or frostbite.

Inhalation : No known significant effects or critical hazards.

Skin contact : Contact with rapidly expanding gas may cause burns or frostbite.

Ingestion : As this product is a gas, refer to the inhalation section.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : No specific data.

Inhalation : No specific data.

Skin contact : No specific data.

Ingestion : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Not available.

Section 12. Ecological information

Toxicity

Not available.

Persistence and degradability

Not available.

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Section 12. Ecological information

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Helium	0.28	-	low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Other adverse effects : No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Empty Airgas-owned pressure vessels should be returned to Airgas. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

	DOT	TDG	Mexico	IMDG	IATA
UN number	UN1046	UN1046	UN1046	UN1046	UN1046
UN proper shipping name	HELIUM, COMPRESSED	HELIUM, COMPRESSED	HELIUM, COMPRESSED	HELIUM, COMPRESSED	HELIUM, COMPRESSED
Transport hazard class(es)	2.2	2.2	2.2	2.2	2.2
Packing group	-	-	-	-	-
Environment	No.	No.	No.	No.	No.
Additional information	**Limited quantity** Yes. **Packaging instruction** **Passenger aircraft** Quantity limitation: 75 kg **Cargo aircraft** Quantity limitation: 150 kg	**Explosive Limit and Limited Quantity Index** 0.125 **Passenger Carrying Road or Rail Index** 75	-	-	**Passenger and Cargo Aircraft**Quantity limitation: 75 kg **Cargo Aircraft Only** Quantity limitation: 150 kg

"Refer to CFR 49 (or authority having jurisdiction) to determine the information required for shipment of the product."

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Section 14. Transport information

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) CDR Exempt/Partial exemption**: Not determined

United States inventory (TSCA 8b): This material is listed or exempted.

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Not listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Sudden release of pressure

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Helium	100	No.	Yes.	No.	No.	No.

State regulations

Massachusetts : This material is listed.

New York : This material is not listed.

New Jersey : This material is listed.

Pennsylvania : This material is listed.

Canada inventory : This material is listed or exempted.

International regulations

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Section 15. Regulatory information

International lists : **Australia inventory (AICS)**: This material is listed or exempted.
China inventory (IECSC): This material is listed or exempted.
Japan inventory: Not determined.
Korea inventory: This material is listed or exempted.
Malaysia Inventory (EHS Register): Not determined.
New Zealand Inventory of Chemicals (NZIoC): This material is listed or exempted.
Philippines inventory (PICCS): This material is listed or exempted.
Taiwan inventory (CSNN): Not determined.

Chemical Weapons Convention List Schedule I Chemicals : Not listed

Chemical Weapons Convention List Schedule II Chemicals : Not listed

Chemical Weapons Convention List Schedule III Chemicals : Not listed

Canada

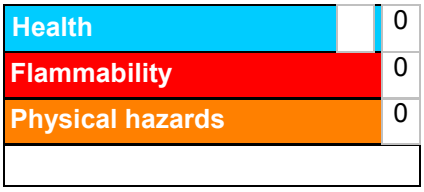
WHMIS (Canada) : Class A: Compressed gas.

CEPA Toxic substances: This material is not listed.
Canadian ARET: This material is not listed.
Canadian NPRI: This material is not listed.
Alberta Designated Substances: This material is not listed.
Ontario Designated Substances: This material is not listed.
Quebec Designated Substances: This material is not listed.

Section 16. Other information

Canada Label requirements : Class A: Compressed gas.

Hazardous Material Information System (U.S.A.)



Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks Although HMIS® ratings are not required on SDSs under 29 CFR 1910. 1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

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Section 16. Other information

Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of printing : 10/15/2014.

Date of issue/Date of revision : 10/15/2014.

Date of previous issue : 10/2/2014.

Version : 0.02

Key to abbreviations : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
UN = United NationsACGIH – American Conference of Governmental Industrial Hygienists
AIHA – American Industrial Hygiene Association
CAS – Chemical Abstract Services
CEPA – Canadian Environmental Protection Act
CERCLA – Comprehensive Environmental Response, Compensation, and Liability Act (EPA)
CFR – United States Code of Federal Regulations
CPR – Controlled Products Regulations
DSL – Domestic Substances List
GWP – Global Warming Potential
IARC – International Agency for Research on Cancer
ICAO – International Civil Aviation Organisation
Inh – Inhalation
LC – Lethal concentration
LD – Lethal dosage
NDSL – Non-Domestic Substances List
NIOSH – National Institute for Occupational Safety and Health
TDG – Canadian Transportation of Dangerous Goods Act and Regulations
TLV – Threshold Limit Value
TSCA – Toxic Substances Control Act
WEEL – Workplace Environmental Exposure Level
WHMIS – Canadian Workplace Hazardous Material Information System

References : Not available.

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.
Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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SAFETY DATA SHEET

Version 5.7
Revision Date 11/03/2015
Print Date 02/18/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Heptane

Product Number : 246654
Brand : Sigma-Aldrich
Index-No. : 601-008-00-2

CAS-No. : 142-82-5

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2), H225
Skin irritation (Category 2), H315
Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336
Aspiration hazard (Category 1), H304
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H225 Highly flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H315 Causes skin irritation.
H336 May cause drowsiness or dizziness.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ eye protection/ face protection.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P312	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P331	Do NOT induce vomiting.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	C_7H_{16}
Molecular weight	:	100.20 g/mol
CAS-No.	:	142-82-5
EC-No.	:	205-563-8
Index-No.	:	601-008-00-2
Registration number	:	01-2119457603-38-XXXX

Hazardous components

Component	Classification	Concentration
Heptane		
	Flam. Liq. 2; Skin Irrit. 2; STOT SE 3; Asp. Tox. 1; Aquatic Acute 1; Aquatic Chronic 1; H225, H304, H315, H336, H410	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

In case of eye contact
Flush eyes with water as a precaution.

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides
Flash back possible over considerable distance.

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion.Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Use explosion-proof equipment.Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store under inert gas. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Heptane	142-82-5	TWA	85.000000 ppm 350.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		C	440.000000 ppm 1,800.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
	Remarks	15 minute ceiling value		
		TWA	500.000000 ppm 2,000.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		
		TWA	400.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation		
		STEL	500.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation		
		TWA	400.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation		
		STEL	500.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation		
		TWA	400 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation		
		STEL	500 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation		

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 480 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.2 mm
Break through time: 65 min
Material tested:Dermatril® P (KCL 743 / Aldrich Z677388, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -91 °C (-132 °F)
f)	Initial boiling point and boiling range	98 °C (208 °F)
g)	Flash point	-3.99 °C (24.82 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 7 %(V) Lower explosion limit: 1.1 %(V)
k)	Vapour pressure	110.7 hPa (83.0 mmHg) at 37.7 °C (99.9 °F) 53.3 hPa (40.0 mmHg) at 20.0 °C (68.0 °F)
l)	Vapour density	No data available

m)	Relative density	0.684 g/mL at 25 °C (77 °F)
n)	Water solubility	insoluble
o)	Partition coefficient: n-octanol/water	log Pow: > 3.000
p)	Auto-ignition temperature	223.0 °C (433.4 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Vapours may form explosive mixture with air.

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

LC50 Inhalation - Rat - 4 h - 103,000 mg/m3

Inhalation: Irritating to respiratory system.

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
Eyes - Rabbit
Result: No eye irritation
(OECD Test Guideline 405)

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

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

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
May be fatal if swallowed and enters airways.

Additional Information
RTECS: MI7700000

Prolonged or repeated exposure to skin causes defatting and dermatitis., Central nervous system depression, narcosis, Damage to the lungs.

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Carassius auratus (goldfish) - 4 mg/l - 24.0 h
	LC50 - Tilapia mossambica - 375 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 1.50 mg/l - 48 h

12.2 Persistence and degradability

Ratio BOD/ThBOD	3.5 %

12.3 Bioaccumulative potential
Indication of bioaccumulation.

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

Do not empty into drains. Avoid release to the environment.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1206 Class: 3 Packing group: II
Proper shipping name: Heptanes
Reportable Quantity (RQ):
Marine pollutant:yes
Poison Inhalation Hazard: No

IMDG
UN number: 1206 Class: 3 Packing group: II EMS-No: F-E, S-D
Proper shipping name: HEPTANES
Marine pollutant:yes

IATA
UN number: 1206 Class: 3 Packing group: II
Proper shipping name: Heptanes

15. REGULATORY INFORMATION

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

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

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Heptane	142-82-5	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Heptane	142-82-5	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Heptane	142-82-5	1993-04-24

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity

Asp. Tox.	Aspiration hazard
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
Skin Irrit.	Skin irritation

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.7 Revision Date: 11/03/2015 Print Date: 02/18/2016

MATERIAL SAFETY DATA SHEET
ERA A Waters Company

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER: ERA (Environmental Resource Associates)
ADDRESS: 6000 W. 54th Avenue
Arvada, CO, 80002 U.S.A.

BUSINESS PHONE: 303-431-8454
FAX: 303-421-0159 **EMAIL:** info@eraqc.com
CHEMICAL EMERGENCY PHONE: 352-535-5053 (INFOTRAC)

Product Name(s): Hexavalent Chromium 1000 mg/L
Catalog / Part Number(s): 019, 973, 186004178
MSDS Creation Date: November 22, 2005
Revision Date: September 29, 2009
MSDS Reference Number: 019

SECTION 2: HAZARDS IDENTIFICATION

Toxic. Harmful by inhalation. May cause cancer. Risk of cancer depends on duration and level of exposure. The matrix of each standard is a K2Cr2O7/water mixture listed below which is classified as dangerous by Directive 199/45/EC. Use only as directed and in accordance with good laboratory practices.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

				EXPOSURE LIMITS		EU LABEL
CHEMICAL INGREDIENT NAME	CAS NUMBER	EC NUMBER	% BY WT.	OSHA	ACGIH	HAZARD LABEL
Potassium dichromate	7778-50-9	231-906-6	≤0.1	0.1 mg/m3 PEL	0.05 mg/m3	

Notes: This standard is 125 mL of a mixture containing potassium dichromate salt with the balance being ≥99.9% water. Hexavalent chromium is a known human carcinogen. Exposure Limits are 8-Hour TWA (Time Weighted Average) unless designated C (Ceiling) or STEL (Short Term Exposure Limit). Other components considered Non-Hazardous under OSHA 1910.1200 (HazCom) as they are not present in concentrations exceeding 1% (or 0.1% if considered a known or potential carcinogen). Material Use: Analytical reagent or certified reference material used in laboratories. Uses also include research and development.

SECTION 4: FIRST-AID MEASURES

Inhalation: Remove to fresh air.
Skin Contact: Flush with water.
Eye Contact: Immediately flush with water for a minimum of 15 minutes.
Ingestion: Get medical attention
After following first aid measures, seek medical attention.

SECTION 5: FIRE-FIGHTING MEASURES

Flammable Properties: Not flammable.
Extinguishing Media: Dry chemical, carbon dioxide or appropriate foam.
Unique Aspects Contributing To a Fire: None.
Special Fire Fighting Procedures: None.
Note: As in any fire, wear self-contained breathing apparatus, and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Absorb liquid with spill pillow or other absorbent. Ventilate and wash spill site after material pick up is complete. Place wastes into closed containers for proper disposal.

SECTION 7: HANDLING AND STORAGE

Handle in accordance with good laboratory practices. Store in a dry well-ventilated place. This product is intended for use only by people trained in the safety and handling of chemicals and laboratory preparations.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Handle in accordance with good laboratory practices. Wash thoroughly after handling.
Respiratory Protection: Not normally needed. If exposure limits are exceeded, use approved respirator.
Eye Protection: Safety glasses with side shields or safety goggles
Skin Protection: Neoprene or other chemical resistant gloves.
Engineering Controls: Not normally needed. If exposure limits are exceeded, work in a fume hood.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

DATA FOR MATRIX:

Appearance:	**Clear to yellow**	**Specific Gravity:**	**NA**	**Melting Point:**	**NA**
Physical State:	**Liquid**	**Flash Point:**	**NA**	**Vapor Pressure:**	**NA**
Odor:	**NA**	**Explosion Limits:**	**NA**	**Vapor Density (air=1):**	**NA**
pH:	**NA**	**Boiling Point:**	**NA**	**Solubility in Water:**	**Soluble**

SECTION 10: STABILITY AND REACTIVITY

Hazardous Polymerization Will Not Occur __X__ May Occur____ Stability: Stable __X__ Unstable ____
Hazardous Decomposition/Combustion Products: NA
Conditions and Materials to Avoid: Oxidizing agents.

SECTION 11: TOXICOLOGICAL INFORMATION

Primary Route(s) of Exposure Under Normal Use: Skin contact: may cause skin irritation or be harmful if absorbed through skin. Eye contact: may cause eye irritation. Inhalation: hamful if inhaled, may be irritation to mucous membranes and upper respiratory tract. Ingestion: harmful if swallowed.

Target Organ(s): Lungs, kidneys, blood.

Acute Effects: Harmful by inhalation. May cause sensitization by inhalation and skin contact. Ingestion can cause vomiting.
Potassium dichromate: Oral, child: LDLO=26 mg/kg; Oral, man: LDLO=143 mg/kg; Oral, rat:LD50=25 mg/kg; Skin, rabbit:LD50=14 mg/kg.

Chronic Effects: Carcinogen; Teratogen; May cause heritable gentic damage. Reproductive hazard; May impair fertility. May cause harm to the unborn child.

Other Information: Chemical Ingredient(s) potassium dichromate is classified as carcinogen(s) by OSHA, IARC (Group 1), NTP, ACGIH (A1), or California. California Prop-65: This product is or contains chemicals known to the state of California to cause cancer.

SECTION 12: ECOLOGICAL INFORMATION

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment. Avoid release into the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

To determine proper disposal, consult applicable federal, state and local environmental control regulations.

SECTION 14: TRANSPORT INFORMATION

Shipment Name/Type: Non-hazardous for transport.
UN Number: NA Shipping/Hazardous Class: NA Packing Group: NA
Shipping regulations are based on combinations of criteria such as quantity, class and packaging according to DOT, IATA and (49) CFR.

SECTION 15: REGULATORY INFORMATION

EU Symbol of Danger: Toxic (T) concentration ≤0.1 C <0.2%
EU Risk Phrases: May cause cancer [R45]; May cause heritable genetic damage [R46]; Harmful by inhalation [R20].

U.S. TSCA: Listed
Canada: This product has been classified according to the hazard criteria of the CPR and this MSDS contains all the information required by the CPR.

SECTION 16: OTHER INFORMATION

United States EPA Regulatory Information:		**NFPA Rating:**	**Health: 3**	**Flammability: 0**	**Reactivity: 0**
SARA 313:	**Yes (0.1% deminimis)**				
CERCLA RQ:	**10 lbs**	**HMIS Rating:**	**Health: 3**	**Flammability: 0**	**Physical Hazard: 0**

NOTE: NA = Data not available, not established, determined or not pertinent.

DISCLAIMER: The information contained herein has been compiled from data presented in various technical sources believed to be accurate. This information is intended to be used only as a guide and does not purport to be complete. ERA makes no warranties and assumes no liability in connection with the use of this information. It is the user's responsibility to determine the suitability of this information and to assure the adoption of necessary precautions.

Safety data for indeno[1,2,3-cd]pyrene

Glossary of terms on this data sheet.

The information on this web page is provided to help you to work safely, but it is intended to be an overview of hazards, not a replacement for a full Material Safety Data Sheet (MSDS). MSDS forms can be downloaded from the web sites of many chemical suppliers.

General

Synonyms: 1,10-(1,2-phenylene)pyrene, 1,10-(o-phenylene)pyrene, o-phenylenepyrene, 2,3-phenylenepyrene, 2,3,o-phenylenepyrene, IP
Use:
Molecular formula: $C_{22}H_{12}$
CAS No: 193-39-5
EINECS No: 205-893-2

Physical data

Appearance: solid
Melting point: 161 - 163 C
Boiling point: 536 C
Vapour density:
Vapour pressure:
Density (g cm^{-3}):
Flash point:
Explosion limits:
Autoignition temperature:
Water solubility:

Stability

Stable. Incompatible with strong oxidizing agents.

Toxicology

Limited evidence that this material may be carcinogenic.

Toxicity data

(The meaning of any toxicological abbreviations which appear in this section is given here.)

Risk phrases

(The meaning of any risk phrases which appear in this section is given here.)
R40.

Transport information

(The meaning of any UN hazard codes which appear in this section is given here.)
Non-hazardous for air, sea and road freight.

Personal protection

Treat as potentially hazardous - many multi-ring aromatic compounds are suspected carcinogens.

Safety phrases

(The meaning of any safety phrases which appear in this section is given here.)
S36 S37 S45.

[Return to Physical & Theoretical Chemistry Lab. Safety home page.]

This information was last updated on May 10, 2005. We have tried to make it as accurate and useful as possible, but can take no responsibility for its use, misuse, or accuracy. We have not verified this information, and cannot guarantee that it is up-to-date.

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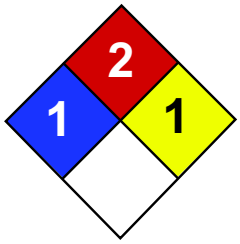

Health	1
Fire	2
Reactivity	1
Personal Protection	E

Material Safety Data Sheet
Iron Metal MSDS

Section 1: Chemical Product and Company Identification

Product Name: Iron Metal

Catalog Codes: SLI2047, SLI1996

CAS#: 7439-89-6

RTECS: NO4565500

TSCA: TSCA 8(b) inventory: Iron Metal

CI#: Not applicable.

Synonym:

Chemical Name: Iron

Chemical Formula: Fe

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Iron Metal, powder	7439-89-6	100

Toxicological Data on Ingredients: Not applicable.

Section 3: Hazards Identification

Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to liver, cardiovascular system, upper respiratory tract, pancreas. Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Skin Contact: Wash with soap and water. Get medical attention if irritation develops.

Serious Skin Contact: Not available.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms appear.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: Not available.

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: Some metallic oxides.

Fire Hazards in Presence of Various Substances: Flammable in presence of heat.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Explosive in presence of open flames and sparks, of heat.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards:
Chlorine Trifluoride reacts with iron with incandescence. Powdered iron reacts with fluorine below redness with incandescence. Reduced iron decomposes with nitrogen dioxide @ ordinary temperature with incandescence. Reacting mass formed by mixture of phosphorus and iron can become incandescent when heated. This material is flammable in powder form only.

Special Remarks on Explosion Hazards: Material in powdered form can explode when exposed to heat or flame

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7: Handling and Storage

Precautions:
Do not ingest. Do not breathe dust. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents, acids.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area. Moisture sensitive.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Solid metallic powder.)

Odor: Odorless.

Taste: Tasteless.

Molecular Weight: 55.85 g/mole

Color: Black to Grey.

pH (1% soln/water): Not applicable.

Boiling Point: 3000°C (5432°F)

Melting Point: 1535°C (2795°F)

Critical Temperature: Not available.

Specific Gravity: Density: 7.86 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Insoluble in cold water, hot water, diethyl ether.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, ignition sources, incompatible materials, water/moisture, air, dust generation.

Incompatibility with various substances:
Reactive with oxidizing agents, acids. Slightly reactive to reactive with moisture.

Corrosivity: Not considered to be corrosive for metals and glass.

Special Remarks on Reactivity:
Hot iron(wire) burns in Chlorine gas. Violent decompositon of hydrogen peroxide (53% by weight or greater) may be caused by contact with iron. Readily oxidizes in moist air forming rust. Reactive with halogens. Incompatible with acetaldehyde, ammonium peroxodisulfate, chloroformamidinum, chloric acid, ammonium nitrate, dinitorgen tetroxide, nitryl fluoride, polystyrene, sodium acetylide, potassium dichromate, peroxyformic acid, sulfuric acid, sodium carbide. Readily attacked by dilute mineral acids and or attacked or dissolved by organic acids. Not appreciably attacked by cold sulfuric acid, or nitric acid, but is attacked by hot acids.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals: Acute oral toxicity (LD50): 30000 mg/kg [Rat].

Chronic Effects on Humans: May cause damage to the following organs: liver, cardiovascular system, upper respiratory tract, pancreas.

Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: Iron metal filings or dust: May cause skin irritation by mechanical action. Iron metal wire: Not likely to cause skin irritation Eyes: Iron metal filings or dust: Can irritate eyes by mechanical action. Iron metal wire: No hazard. Will not cause eye irritation. Inhalation: Iron dust: Can irritate the respiratory tract by mechanical action. Iron metal wire or filings: Not an inhalation hazard unless metal is heated. If metal is heated, fumes will be released. Inhalation of these fumes may cause "fume metal fever", which is characterized by flu-like symptoms. Symptoms may include metallic taste, fever, nausea, vomiting, chills, cough, weakness, chest pain, generalized muscle pain/aches, and increased white blood cell count. Ingestion: Iron metal wire: Not an ingestion hazard: Iron metal filings or dust: The amount of ingested iron which constitutes a toxic dose is not well defined. Proposed toxic doses of elemental iron are 20 mg/kg for gastrointestinal irritation to greater than 60 mg/kg for systemic toxicity. Gastrointestinal effects are the first signs to appear, with hemorrhagic vomiting and diarrhea, hematochezia, abdominal pain, lethargy, metabolic acidosis, coagulaopathy, shock, coma and convulsions developing from 0 to 6 hours after ingestion. Leukocytosis may also occur. An asymptomatic phase may ensue at 6 to 12 hours postingestion, followed by hypoglycemia or hyperglycemia, hepatic and renal failure, severe acidosis, cyanosis, fever, CNS depression (lethargy, restlessness and/or confusion seizures), hypotension, and cardiovascular collapse/cardiac failure in 12 to 48 hours. Hepatic cirrhosis, gastrointestinal scarring and/or strictures may arise in 2 to 6 weeks. It may also cause an anaphylactoid reaction. Non-cardiogenic pulmonary edema also develop in severe cases of iron intoxication. Chronic Potential Health Effects: Inhalation: Chronic inhalation of iron dust can lead to accumulation in the lungs and a characteristic stippled appearance on X-rays. This condition, called SIDEROSIS, is considered benign in that it does not interfere with lung function and does not predispose to other disease. Chronic inhalation of iron dust may also cause fibrosis in the lungs. Ingestion: Clinical signs of iron overload appear when the total body iron is 5 to 10 times higher than normal. Neurobehavioral defects including depression, decreased activity, habituation, reflex startle, and conditioned avoidance response performance may occur. However, similiar effects were also seen in iron defficiency. It is therefore likely that these behavioral effects are secondary to general toxicity. High serum iron levels may be associated with an increased risk of fatal acute myocardial infarction (MI). Skin: Prolonged or repeated contact may cause hypersensivity.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The product itself and its products of degradation are not toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 4.1: Flammable solid.

Identification: : Metal powder, flammable, n.o.s. (Iron metal powder) UNNA: 3089 PG: III

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
California Director's List of Hazardous Substances: Iron Metal TSCA 8(b) inventory: Iron Metal

Other Regulations: EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS B-4: Flammable solid.

DSCL (EEC):
R11- Highly flammable. S16- Keep away from sources of ignition - No smoking. S22- Do not breathe dust.

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 2

Reactivity: 1

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 2

Reactivity: 1

Specific hazard:

Protective Equipment:
Gloves Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/09/2005 05:52 PM

Last Updated: 11/06/2008 12:00 PM

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SAFETY DATA SHEET

Version 5.8
Revision Date 03/06/2015
Print Date 02/18/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Isopropyl alcohol

Product Number : W292907
Brand : Aldrich
Index-No. : 603-117-00-0

CAS-No. : 67-63-0

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2), H225
Eye irritation (Category 2A), H319
Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER or doctor/ physician if you feel unwell.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

May form explosive peroxides.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	:	2-Propanol sec-Propyl alcohol Isopropyl alcohol Isopropanol
Formula	:	C_3H_8O
Molecular weight	:	60.10 g/mol
CAS-No.	:	67-63-0
EC-No.	:	200-661-7
Index-No.	:	603-117-00-0

Hazardous components

Component	Classification	Concentration
2-Propanol		
	Flam. Liq. 2; Eye Irrit. 2A; STOT SE 3; H225, H319, H336	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

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

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Use explosion-proof equipment.Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Handle and store under inert gas. hygroscopic

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
2-Propanol	67-63-0	TWA	200.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Central Nervous System impairment		

		Upper Respiratory Tract irritation Eye irritation Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		TWA	200 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation Eye irritation Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		STEL	400 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation Eye irritation Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		STEL	400.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation Eye irritation Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		TWA	400.000000 ppm 980.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		
		TWA	400.000000 ppm 980.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	500.000000 ppm 1,225.000000 mg/m3	USA. NIOSH Recommended Exposure Limits

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
2-Propanol	67-63-0	Acetone	40.0000 mg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift at end of workweek			

8.2 Exposure controls

Appropriate engineering controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 480 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.2 mm
Break through time: 60 min
Material tested:Dermatril® P (KCL 743 / Aldrich Z677388, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
impervious clothing, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid Colour: colourless
b)	Odour	alcohol-like
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -89.5 °C (-129.1 °F) - lit.
f)	Initial boiling point and boiling range	82 °C (180 °F) - lit.
g)	Flash point	12.0 °C (53.6 °F) - closed cup
h)	Evaporation rate	3.0
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or	Upper explosion limit: 12.7 %(V) Lower explosion limit: 2 %(V)

	explosive limits	
k)	Vapour pressure	43.2 hPa (32.4 mmHg) at 20.0 °C (68.0 °F) 58.7 hPa (44.0 mmHg) at 25.0 °C (77.0 °F)
l)	Vapour density	No data available
m)	Relative density	0.785 g/cm3 at 25 °C (77 °F)
n)	Water solubility	completely soluble
o)	Partition coefficient: n-octanol/water	log Pow: 0.05
p)	Auto-ignition temperature	425.0 °C (797.0 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

Surface tension	20.8 mN/m at 25.0 °C (77.0 °F)

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Test for peroxide formation before distillation or evaporation. Test for peroxide formation or discard after 1 year.
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Vapours may form explosive mixture with air.

10.4 Conditions to avoid
Heat, flames and sparks. Extremes of temperature and direct sunlight.

10.5 Incompatible materials
Oxidizing agents, Acid anhydrides, Aluminium, Halogenated compounds, Acids

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 5,045 mg/kg
Remarks: Behavioral:Altered sleep time (including change in righting reflex). Behavioral:Somnolence (general depressed activity).

LC50 Inhalation - Rat - 8 h - 16000 ppm

LD50 Dermal - Rabbit - 12,800 mg/kg

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Mild skin irritation

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Eye irritation - 24 h

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC:	3 - Group 3: Not classifiable as to its carcinogenicity to humans (2-Propanol)
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
Inhalation, Oral - May cause drowsiness or dizziness.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: NT8050000

Central nervous system depression, prolonged or repeated exposure can cause:, Nausea, Headache, Vomiting, narcosis, Drowsiness, Overexposure may cause mild, reversible liver effects., Aspiration may lead to:, Lung oedema, Pneumonia
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Kidney - Irregularities - Based on Human Evidence
Kidney - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 9,640.00 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 5,102.00 mg/l - 24 h
	Immobilization EC50 - Daphnia magna (Water flea) - 6,851 mg/l - 24 h
Toxicity to algae	EC50 - Desmodesmus subspicatus (green algae) - > 2,000.00 mg/l - 72 h
	EC50 - Algae - > 1,000.00 mg/l - 24 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No bioaccumulation is to be expected (log Pow <= 4).

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1219 Class: 3 Packing group: II
Proper shipping name: Isopropanol
Reportable Quantity (RQ):

Poison Inhalation Hazard: No

IMDG
UN number: 1219 Class: 3 Packing group: II EMS-No: F-E, S-D
Proper shipping name: ISOPROPANOL

IATA
UN number: 1219 Class: 3 Packing group: II
Proper shipping name: Isopropanol

15. REGULATORY INFORMATION

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

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
2-Propanol	67-63-0	1987-01-01

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
2-Propanol	67-63-0	1987-01-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
2-Propanol	67-63-0	1987-01-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
2-Propanol	67-63-0	1987-01-01

California Prop. 65 Components

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

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
STOT SE	Specific target organ toxicity - single exposure

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	0

Further information

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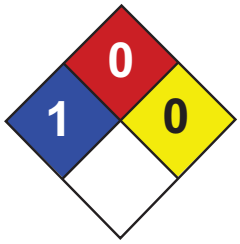
Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.8 Revision Date: 03/06/2015 Print Date: 02/18/2016



Health	1
Fire	0
Reactivity	0
Personal Protection	E

Material Safety Data Sheet
Lead MSDS

Section 1: Chemical Product and Company Identification

Product Name: Lead

Catalog Codes: SLL1291, SLL1669, SLL1081, SLL1459, SLL1834

CAS#: 7439-92-1

RTECS: OF7525000

TSCA: TSCA 8(b) inventory: Lead

CI#: Not available.

Synonym: Lead Metal, granular; Lead Metal, foil; Lead Metal, sheet; Lead Metal, shot

Chemical Name: Lead

Chemical Formula: Pb

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Lead	7439-92-1	100

Toxicological Data on Ingredients: Lead LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:
Slightly hazardous in case of skin contact (permeator). CARCINOGENIC EFFECTS: Classified A3 (Proven for animal.) by ACGIH, 2B (Possible for human.) by IARC. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to blood, kidneys, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage.

Section 4: First Aid Measures

Eye Contact:

Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Skin Contact: Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.

Serious Skin Contact: Not available.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: Not available.

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: Some metallic oxides.

Fire Hazards in Presence of Various Substances: Non-flammable in presence of open flames and sparks, of shocks, of heat.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards: When heated to decomposition it emits highly toxic fumes of lead.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Use a shovel to put the material into a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up.. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable

protective clothing. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents.

Storage: Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 0.05 (mg/m3) from ACGIH (TLV) [United States] TWA: 0.05 (mg/m3) from OSHA (PEL) [United States] TWA: 0.03 (mg/m3) from NIOSH [United States] TWA: 0.05 (mg/m3) [Canada]Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Metal solid.)

Odor: Not available.

Taste: Not available.

Molecular Weight: 207.21 g/mole

Color: Bluish-white. Silvery. Gray

pH (1% soln/water): Not applicable.

Boiling Point: 1740°C (3164°F)

Melting Point: 327.43°C (621.4°F)

Critical Temperature: Not available.

Specific Gravity: 11.3 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Insoluble in cold water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Incompatible materials, excess heat

Incompatibility with various substances: Reactive with oxidizing agents.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Can react vigorously with oxidizing materials. Incompatible with sodium carbide, chlorine trifluoride, trioxane + hydrogen peroxide, ammonium nitrate, sodium azide, disodium acetylide, sodium acetylide, hot concentrated nitric acid, hot concentrated hydrochloric acid, hot concentrated sulfuric acid, zirconium.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Inhalation. Ingestion.

Toxicity to Animals:
LD50: Not available. LC50: Not available.

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: Classified A3 (Proven for animal.) by ACGIH, 2B (Possible for human.) by IARC. May cause damage to the following organs: blood, kidneys, central nervous system (CNS).

Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans:
Acute Potential: Skin: Lead metal granules or dust: May cause skin irritation by mechanical action. Lead metal foil, shot or sheets: Not likely to cause skin irritation Eyes: Lead metal granules or dust: Can irritate eyes by mechanical action. Lead metal foil, shot or sheets: No hazard. Will not cause eye irritation. Inhalation: In an industrial setting, exposure to lead mainly occurs from inhalation of dust or fumes. Lead dust or fumes: Can irritate the upper respiratory tract (nose, throat) as well as the bronchi and lungsby mechanical action. Lead dust can be absorbed through the respiratory system. However, inhaled lead does not accumulate in the lungs. All of an inhaled dose is eventually abssorbed or transferred to the gastrointestinal tract. Inhalation effects of exposure to fumes or dust of inorganic lead may not develop quickly. Symptoms may include metallic taste, chest pain, decreased physical fitness, fatigue, sleep disturbance, headache, irritability, reduces memory, mood and personality changes, aching bones and muscles, constipation, abdominal pains, decreasing appetite. Inhalation of large amounts may lead to ataxia, deliriuim, convulsions/seizures, coma, and death. Lead metal foil, shot, or sheets: Not an inhalation hazard unless metal is heated. If metal is heated, fumes will be released. Inhalation of these fumes may cause "fume metal fever", which is characterized by flu-like symptoms. Symptoms may include metallic taste, fever, nausea, vomiting, chills, cough, weakness, chest pain, generalized muscle pain/aches, and increased white blood cell count. Ingestion: Lead metal granules or dust: The symptoms of lead poisoning include abdominal pain or cramps (lead cholic), spasms, nausea, vomiting, headache, muscle weakness, hallucinations, distorted perceptions, "lead line" on the gums, metallic taste, loss of appetite, insomnia, dizziness and other symptoms similar to that of inhalation. Acute poisoning may result in high lead levels in the blood and urine, shock, coma and death in extreme cases. Lead metal foil, shot or sheets: Not an ingestion hazard for usual industrial handling.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations:
California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer, birth defects or other reproductive harm, which would require a warning under the statute: Lead California prop. 65: This product contains the following ingredients for which the State of California has found to cause reproductive harm (female) which would require a warning under the statute: Lead California prop. 65: This product contains the following ingredients for which the State of California has found to cause reproductive harm (male) which would require a warning under the statute: Lead California prop. 65 (no significant risk level): Lead: 0.0005 mg/day (value) California prop. 65: This product contains the following ingredients for which the State of California has found to cause birth defects which would require a warning under the statute: Lead California prop. 65: This product contains the following ingredients for which the State of California has found to cause cancer which would require a warning under the statute: Lead Connecticut hazardous material survey.: Lead Illinois toxic substances disclosure to employee act: Lead Illinois chemical safety act: Lead New York release reporting list: Lead Rhode Island RTK hazardous substances: Lead Pennsylvania RTK: Lead

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): CLASS D-2A: Material causing other toxic effects (VERY TOXIC).

DSCL (EEC):
R20/22- Harmful by inhalation and if swallowed. R33- Danger of cumulative effects. R61- May cause harm to the unborn child. R62- Possible risk of impaired fertility. S36/37- Wear suitable protective clothing and gloves. S44- If you feel unwell, seek medical advice (show the label when possible). S53- Avoid exposure - obtain special instructions before use.

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 0

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 1

Flammability: 0

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 08:21 PM

Last Updated: 11/06/2008 12:00 PM

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SAFETY DATA SHEET

Version 4.6
Revision Date 03/02/2015
Print Date 02/07/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Manganese

Product Number : 463728
Brand : Aldrich

CAS-No. : 7439-96-5

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Substances and mixtures, which in contact with water, emit flammable gases (Category 1), H260
Acute aquatic toxicity (Category 3), H402
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H260 In contact with water releases flammable gases which may ignite spontaneously.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)
P223 Keep away from any possible contact with water, because of violent reaction and possible flash fire.
P231 + P232 Handle under inert gas. Protect from moisture.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P335 + P334 Brush off loose particles from skin. Immerse in cool water/ wrap in wet bandages.

P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P402 + P404	Store in a dry place. Store in a closed container.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	Mn
Molecular weight	:	54.94 g/mol
CAS-No.	:	7439-96-5
EC-No.	:	231-105-1

Hazardous components

Component	Classification	Concentration
Manganese		
	Water-react. 1; Aquatic Acute 3; Aquatic Chronic 3; H260, H412	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

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

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Dry powder Carbon dioxide (CO2)

Unsuitable extinguishing media
Water

5.2 Special hazards arising from the substance or mixture
Manganese/manganese oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions

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

6.3 Methods and materials for containment and cleaning up

Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed.Keep away from sources of ignition - No smoking.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.
Never allow product to get in contact with water during storage.

Moisture sensitive. Keep in a dry place.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Manganese	7439-96-5	TWA	0.200000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Central Nervous System impairment Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC)		
		C	5 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Ceiling limit is to be determined from breathing-zone air samples.		
		C	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Ceiling limit is to be determined from breathing-zone air samples.		

		TWA	1.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	3.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	1.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	3.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		C	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Ceiling limit is to be determined from breathing-zone air samples.		
		TWA	1.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	3.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	0.200000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC) varies		
		TWA	0.100000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment 2014 Adoption varies		
		TWA	0.020000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment 2014 Adoption varies		
		TWA	0.1 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment varies		
		TWA	0.02 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment varies		

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
impervious clothing, Flame retardant protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: powder Colour: grey
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 1,244 °C (2,271 °F) - lit.
f)	Initial boiling point and boiling range	1,962 °C (3,564 °F) - lit.
g)	Flash point	Not applicable
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	7.3 g/mL at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Reacts violently with water.

10.4 Conditions to avoid
Exposure to moisture

10.5 Incompatible materials
acids, Halogens, Bases, Phosphorus, Sulphur oxides, Peroxides

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 9,000 mg/kg

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Mild skin irritation - 24 h

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Mild eye irritation - 24 h

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

Carcinogenicity - Rat - Intramuscular
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Tumorigenic:Tumors at site or application.

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

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

May cause reproductive disorders.

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: OO9275000

Men exposed to manganese dusts showed a decrease in fertility. Chronic manganese poisoning primarily involves the central nervous system. Early symptoms include languor, sleepiness and weakness in the legs. A stolid mask-like appearance of the face, emotional disturbances such as uncontrollable laughter and a spastic gait with tendency to fall in walking are findings in more advanced cases. High incidence of pneumonia has been found in workers exposed to the dust or fume of some manganese compounds.

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 40 mg/l - 48 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3208 Class: 4.3 Packing group: I
Proper shipping name: Metallic substance, water-reactive, n.o.s. (Manganese)

Poison Inhalation Hazard: No

IMDG
UN number: 3208 Class: 4.3 Packing group: I EMS-No: F-G, S-N
Proper shipping name: METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S. (Manganese)

IATA
UN number: 3208 Class: 4.3 Packing group: I
Proper shipping name: Metallic substance, water-reactive, n.o.s. (Manganese)
IATA Passenger: Not permitted for transport

15. REGULATORY INFORMATION

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

SARA 313 Components

	CAS-No.	Revision Date
Manganese	7439-96-5	2007-07-01

SARA 311/312 Hazards
Reactivity Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Manganese	7439-96-5	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Manganese	7439-96-5	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Manganese	7439-96-5	2007-07-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
H260	In contact with water releases flammable gases which may ignite spontaneously.
H402	Harmful to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

HMIS Rating

Health hazard:	0
Chronic Health Hazard:	*
Flammability:	3
Physical Hazard	2

NFPA Rating

Health hazard:	0
Fire Hazard:	0
Reactivity Hazard:	2
Special hazard.I:	W

Further information
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Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.6 Revision Date: 03/02/2015 Print Date: 02/07/2016

SAFETY DATA SHEET

Version 4.6
Revision Date 03/02/2015
Print Date 02/07/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Manganese

Product Number : 463728
Brand : Aldrich

CAS-No. : 7439-96-5

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Substances and mixtures, which in contact with water, emit flammable gases (Category 1), H260
Acute aquatic toxicity (Category 3), H402
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H260 In contact with water releases flammable gases which may ignite spontaneously.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)
P223 Keep away from any possible contact with water, because of violent reaction and possible flash fire.
P231 + P232 Handle under inert gas. Protect from moisture.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P335 + P334 Brush off loose particles from skin. Immerse in cool water/ wrap in wet bandages.

P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P402 + P404	Store in a dry place. Store in a closed container.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	Mn
Molecular weight	:	54.94 g/mol
CAS-No.	:	7439-96-5
EC-No.	:	231-105-1

Hazardous components

Component	Classification	Concentration
Manganese		
	Water-react. 1; Aquatic Acute 3; Aquatic Chronic 3; H260, H412	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

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

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Dry powder Carbon dioxide (CO2)

Unsuitable extinguishing media
Water

5.2 Special hazards arising from the substance or mixture
Manganese/manganese oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions

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

6.3 Methods and materials for containment and cleaning up

Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed.Keep away from sources of ignition - No smoking.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.
Never allow product to get in contact with water during storage.

Moisture sensitive. Keep in a dry place.

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Manganese	7439-96-5	TWA	0.200000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Central Nervous System impairment Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC)		
		C	5 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Ceiling limit is to be determined from breathing-zone air samples.		
		C	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Ceiling limit is to be determined from breathing-zone air samples.		

		TWA	1.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	3.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	1.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	3.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		C	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Ceiling limit is to be determined from breathing-zone air samples.		
		TWA	1.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	3.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	0.200000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Adopted values or notations enclosed are those for which changes are proposed in the NIC See Notice of Intended Changes (NIC) varies		
		TWA	0.100000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment 2014 Adoption varies		
		TWA	0.020000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment 2014 Adoption varies		
		TWA	0.1 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment varies		
		TWA	0.02 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment varies		

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
impervious clothing, Flame retardant protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: powder Colour: grey
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 1,244 °C (2,271 °F) - lit.
f)	Initial boiling point and boiling range	1,962 °C (3,564 °F) - lit.
g)	Flash point	Not applicable
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	7.3 g/mL at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Reacts violently with water.

10.4 Conditions to avoid
Exposure to moisture

10.5 Incompatible materials
acids, Halogens, Bases, Phosphorus, Sulphur oxides, Peroxides

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 9,000 mg/kg

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Mild skin irritation - 24 h

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Mild eye irritation - 24 h

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

Carcinogenicity - Rat - Intramuscular
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Tumorigenic:Tumors at site or application.

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

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

May cause reproductive disorders.

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: OO9275000

Men exposed to manganese dusts showed a decrease in fertility. Chronic manganese poisoning primarily involves the central nervous system. Early symptoms include languor, sleepiness and weakness in the legs. A stolid mask-like appearance of the face, emotional disturbances such as uncontrollable laughter and a spastic gait with tendency to fall in walking are findings in more advanced cases. High incidence of pneumonia has been found in workers exposed to the dust or fume of some manganese compounds.

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 40 mg/l - 48 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life.

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3208 Class: 4.3 Packing group: I
Proper shipping name: Metallic substance, water-reactive, n.o.s. (Manganese)

Poison Inhalation Hazard: No

IMDG
UN number: 3208 Class: 4.3 Packing group: I EMS-No: F-G, S-N
Proper shipping name: METALLIC SUBSTANCE, WATER-REACTIVE, N.O.S. (Manganese)

IATA
UN number: 3208 Class: 4.3 Packing group: I
Proper shipping name: Metallic substance, water-reactive, n.o.s. (Manganese)
IATA Passenger: Not permitted for transport

15. REGULATORY INFORMATION

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

SARA 313 Components

	CAS-No.	Revision Date
Manganese	7439-96-5	2007-07-01

SARA 311/312 Hazards
Reactivity Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Manganese	7439-96-5	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Manganese	7439-96-5	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Manganese	7439-96-5	2007-07-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
H260	In contact with water releases flammable gases which may ignite spontaneously.
H402	Harmful to aquatic life.
H412	Harmful to aquatic life with long lasting effects.

HMIS Rating

Health hazard:	0
Chronic Health Hazard:	*
Flammability:	3
Physical Hazard	2

NFPA Rating

Health hazard:	0
Fire Hazard:	0
Reactivity Hazard:	2
Special hazard.I:	W

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

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.6 Revision Date: 03/02/2015 Print Date: 02/07/2016

MATERIAL SAFETY DATA SHEET

Date Printed: 02.04.2016
Date Updated: 07.08.2012
Version 1.9

Section 1 - Product and Company Information

Product Name	M-CRESOL APPROX 99%
Product Number	C5015
Brand	SIGMA
Company	Sigma-Aldrich
Address	3050 Spruce Street SAINT LOUIS MO 63103 US
Technical Phone:	800-325-5832
Fax:	800-325-5052
Emergency Phone:	314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
M-CRESOL	108-39-4	Yes

Formula C7H8O
Synonyms 3-Cresol * m-Cresol (ACGIH:OSHA) * m-Cresole * m-Cresylic acid * 1-Hydroxy-3-methylbenzene * m-Hydroxytoluene * 3-Hydroxytoluene * m-Kresol * m-Methylphenol * 3-Methylphenol * m-Oxytoluene * Phenol, 3-methyl- (9CI) * RCRA waste number U052 * m-Toluol
RTECS Number: GO6125000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Toxic.
Toxic in contact with skin and if swallowed. Causes burns. Readily absorbed through skin. Combustible. Target organ(s): Central nervous system. Lungs.

HMIS RATING
HEALTH: 3*
FLAMMABILITY: 2
REACTIVITY: 1

NFPA RATING
HEALTH: 3
FLAMMABILITY: 2
REACTIVITY: 1

*additional chronic hazards present.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE
If swallowed, wash out mouth with water provided person is conscious. Call a physician immediately. Do not induce vomiting.

INHALATION EXPOSURE
If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

DERMAL EXPOSURE
In case of skin contact, flush with copious amounts of water for at least 15 minutes. Remove contaminated clothing and shoes. Call a physician.

EYE EXPOSURE
In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers. Call a physician.

Section 5 - Fire Fighting Measures

FLASH POINT
186,800 °F 86,000 °C Method: closed cup

EXPLOSION LIMITS
Lower: 1,060 % Upper: 1,350 %

AUTOIGNITION TEMP
558,00 °C

FLAMMABILITY
N/A

EXTINGUISHING MEDIA
Suitable: Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING
Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Specific Hazard(s): Combustible liquid. Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

PROCEDURE TO BE FOLLOWED IN CASE OF LEAK OR SPILL
Evacuate area.

PROCEDURE(S) OF PERSONAL PRECAUTION(S)
Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP
Cover with dry lime or soda ash, pick up, keep in a closed container, and hold for waste disposal. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING
User Exposure: Do not breathe vapor. Do not get in eyes, on

skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE
Suitable: Keep tightly closed. Keep away from heat and open flame. Store in a cool dry place.
Unsuitable: May discolor on exposure to air and light.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS
Use only in a chemical fume hood. Safety shower and eye bath.

PERSONAL PROTECTIVE EQUIPMENT
Respiratory: Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator.
Hand: Compatible chemical-resistant gloves.
Eye: Chemical safety goggles.
Other: Faceshield (8-inch minimum).

GENERAL HYGIENE MEASURES
Wash contaminated clothing before reuse. Discard contaminated shoes. Wash thoroughly after handling.

EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA	ACGIH	TWA	5 PPM
Remarks: Skin			
USA	MSHA Standard-air	TWA	5 PPM (22 MG/M3)
USA	OSHA.	PEL	8H TWA 5 PPM (22 MG/M3) (SKIN)
New Zealand OEL			
Remarks: check ACGIH TLV			
USA	NIOSH	TWA	2.3 PPM

Section 9 - Physical/Chemical Properties

Appearance — Physical State: Liquid

Property	Value	At Temperature or Pressure
Molecular Weight	108,1400 AMU	
pH	N/A	
BP/BP Range	200,000. - 203,000 °C.	
MP/MP Range	8,000. - 10,000 °C.	
Freezing Point	N/A	
Vapor Pressure	< 1,000000000 mmHg	20,00 °C
Vapor Density	3,720 g/l	
Saturated Vapor Conc.	N/A	
SG/Density	1,0340 g/cm3	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	

Evaporation Rate	N/A	
Viscosity	12,900 Pas	25,000 °C
Surface Tension	N/A	
Partition Coefficient	N/A	
Decomposition Temp.	N/A	
Flash Point	186,800 °F	Method: closed cup
	86,000 °C	
Explosion Limits	Lower: 1,060 %	
	Upper: 1,350 %	
Flammability	N/A	
Autoignition Temp	558,00 °C	
Refractive Index	1,5420	
Optical Rotation	N/A	
Miscellaneous Data	N/A	
Solubility	Other Solvents: SOLUBLE IN ACETONE, ETHANOL, MISCIBLE IN ALCOHOL,ETHER	

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Stable: Stable.
Materials to Avoid: Oxidizing agents, Bases.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide.

HAZARDOUS POLYMERIZATION

Hazardous Polymerization: Will not occur

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Skin Contact: Causes burns.
Skin Absorption: Toxic if absorbed through skin. Readily absorbed through skin.
Eye Contact: Causes burns.
Inhalation: May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Ingestion: Toxic if swallowed.

TARGET ORGAN(S) OR SYSTEM(S)

Central nervous system. Eyes. Liver. Kidneys. Lungs.

SIGNS AND SYMPTOMS OF EXPOSURE

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Inhalation may result in spasm, inflammation and edema of the larynxand bronchi, chemical pneumonitis, and pulmonary edema. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting. Exposure can cause: Damage to the eyes. Damage to the kidneys. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

TOXICITY DATA

Oral
Rat
242,000000 mg/kg
LD50
Remarks: Behavioral:Somnolence (general depressed activity).
Behavioral:Convulsions or effect on seizure threshold.
Gastrointestinal:Peritonitis.

Inhalation
Rat
> 710,000 mg/m3
LC50

Skin
Rat
1100,000000 mg/kg
LD50

Oral
Mouse
828,000000 mg/kg
LD50

Intraperitoneal
Mouse
168 MG/KG
LD50

Skin
Rabbit
2050,000000 mg/kg
LD50
Remarks: Behavioral:Convulsions or effect on seizure threshold.
Sense Organs and Special Senses (Nose, Eye, Ear, and
Taste):Eye:Lacrimation. Gastrointestinal:Changes in structure or
function of salivary glands.

IRRITATION DATA

Skin
Rabbit
517,000000 mg
24H
Remarks: Severe irritation effect

Eyes
Rabbit
103,000000 mg
Remarks: Severe irritation effect

CHRONIC EXPOSURE - CARCINOGEN

Species: Mouse
Route of Application: Skin
Dose: 2280 MG/KG
Exposure Time: 20W
Frequency: I
Result: Tumorigenic:Neoplastic by RTECS criteria. Skin and
Appendages: Other: Tumors.

CHRONIC EXPOSURE - TERATOGEN

Species: Rabbit
Dose: 134 GM/KG
Route of Application: Subcutaneous
Exposure Time: (6-18D PREG)
Result: Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

CHRONIC EXPOSURE - MUTAGEN

Species: Human
Dose: 10 UMOL/L
Exposure Time: 4H
Cell Type: HeLa cell
Mutation test: DNA inhibition

Section 12 - Ecological Information

ACUTE ECOTOXICITY TESTS

Test Type: EC50 Algae
Time: 24,0 h
Value: 110,000 mg/l

Test Type: EC50 Daphnia
Species: Daphnia magna
Time: 24,0 h
Value: 25,000 mg/l

Test Type: LC50 Fish
Species: Leuciscus idus
Time: 48,0 h
Value: 17,000. - 19,000 mg/l.

Test Type: LC50 Fish
Species: Onchorhynchus mykiss (Rainbow trout)
Time: 96,0 h
Value: 8,900 mg/l

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION
This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT
Proper Shipping Name: Cresols
UN#: 2076
Class: 6.1
Packing Group: Packing Group II
Hazard Label: Toxic substances.
Hazard Label: Corrosive
PIH: Not PIH

IATA
Proper Shipping Name: Cresols, liquid (o-, m-, p-)

IATA UN Number: 2076
Hazard Class: 6.1
Packing Group: II

Section 15 - Regulatory Information

EU DIRECTIVES CLASSIFICATION
Symbol of Danger: T
Indication of Danger: Toxic.
R: 24/25-34
Risk Statements: Toxic in contact with skin and if swallowed.
Causes burns.
S: 36/37/39-45
Safety Statements: Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US CLASSIFICATION AND LABEL TEXT
Indication of Danger: Toxic.
Risk Statements: Toxic in contact with skin and if swallowed.
Causes burns.
Safety Statements: In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
US Statements: Readily absorbed through skin. Combustible.
Target organ(s): Central nervous system. Lungs.

UNITED STATES REGULATORY INFORMATION
SARA LISTED: Yes
DEMINIMIS: 1,000 %
TSCA INVENTORY ITEM: Yes

CANADA REGULATORY INFORMATION
WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: Yes
NDSL: No

Section 16 - Other Information

DISCLAIMER
For R&D use only. Not for drug, household or other uses.

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

STACK:

/quit
-dictionary-
-mark-
```

MATERIAL SAFETY DATA SHEET

Date Printed: 23.02.2016
Date Updated: 31.05.2012
Version 1.6

Section 1 - Product and Company Information

Product Name	METHOXYCHLOR
Product Number	M1501
Brand	SIGMA
Company	Sigma-Aldrich
Address	3050 Spruce Street SAINT LOUIS MO 63103 US
Technical Phone:	800-325-5832
Fax:	800-325-5052
Emergency Phone:	314-776-6555

Section 2 - Composition/Information on Ingredient

Substance Name	CAS #	SARA 313
METHOXYCHLOR	72-43-5	Yes

Formula: C16H15Cl3O2

Synonyms: Benzene, 1,1'-(2,2,2-trichloroethylidene)bis(4-methoxy- * 2,2-Bis(p-anisyl)-1,1,1-trichloroethane * 1,1-Bis(p-methoxyphenyl)-2,2,2-trichloroethane * 2,2-Bis(p-methoxyphenyl)-1,1,1-trichloroethane * Dianisyltrichlorethane * 2,2-Di-p-anisyl-1,1,1-trichloroethane * Dimethoxy-DDT * p,p'-Dimethoxydiphenyltrichloroethane * 2,2-Di-(p-methoxyphenyl)-1,1,1-trichloroethane * Di(p-methoxyphenyl)-trichloromethyl methane * DMDT * p,p'-Dwumetoksydwufenylotrojchloroetan (Polish) * ENT 1,716 * Ethane, 2,2-bis(p-anisyl)-1,1,1-trichloro- * Higalmetox * Marlate * Methoxcide * Methoxychlor (ACGIH:OSHA) * p,p'-Methoxychlor * Methoxychlor 2 EC * Methoxy-DDT * Metoksychlor (Polish) * Metox * Mezox K * Moxie * NCI-C00497 * OMS 466 * RCRA waste number U247 * 1,1,1-Trichlor-2,2-bis(4-methoxy-phenyl)-aethan (German) * 1,1,1-Trichloro-2,2-bis(p-anisyl)ethane * 1,1'-(2,2,2-Trichloroethylidene)bis(4-methoxybenzene) * 1,1,1-Trichloro-2,2-bis(p-methoxyphenyl)ethane * 1,1,1-Trichloro-2,2-bis(4-methoxyphenyl)ethane * 2,2,2-Trichloro-1,1-bis(4-methoxyphenyl)ethane * 1,1,1-Trichloro-2,2-di(4-methoxyphenyl)ethane * 4,4-(2,2,2-Trichloroethylidene)dianisole

RTECS Number: KJ3675000

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Harmful.
Harmful by inhalation, in contact with skin and if swallowed.
Limited evidence of a carcinogenic effect.
Possible mutagen. Reproductive hazard. Target organ(s): Nerves. Kidneys.

For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

ORAL EXPOSURE

If swallowed, wash out mouth with water provided person is conscious. Call a physician.

INHALATION EXPOSURE

If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

EYE EXPOSURE

Assure adequate flushing of the eyes by separating the eyelids with fingers.

Section 5 - Fire Fighting Measures

FLASH POINT

N/A

AUTOIGNITION TEMP

N/A

FLAMMABILITY

N/A

EXTINGUISHING MEDIA

Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

FIREFIGHTING

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.
Specific Hazard(s): Emits toxic fumes under fire conditions.

EXPOSURE HAZARD(S)

Material: Harmful solid.

Section 6 - Accidental Release Measures

PROCEDURE(S) OF PERSONAL PRECAUTION(S)

Wear self-contained breathing apparatus, rubber boots, and heavy rubber gloves.

METHODS FOR CLEANING UP

Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

HANDLING
User Exposure: Avoid inhalation. Do not get in eyes, on skin, on clothing. Avoid prolonged or repeated exposure.

STORAGE
Suitable: Keep tightly closed. Store in a cool dry place.

Section 8 - Exposure Controls / PPE

ENGINEERING CONTROLS
Use only in a chemical fume hood. Safety shower and eye bath.

PERSONAL PROTECTIVE EQUIPMENT
Other: Wear appropriate government approved respirator, chemical-resistant gloves, safety goggles, other protective clothing.

GENERAL HYGIENE MEASURES
Wash thoroughly after handling. Wash contaminated clothing before reuse.

EXPOSURE LIMITS, RTECS

Country	Source	Type	Value
USA	ACGIH	TWA	10 MG/M3
USA	MSHA Standard-air	TWA	10 MG/M3
USA	OSHA.	PEL	8H TWA 15 MG/M3, TOTAL DUST
New Zealand	OEL		
Remarks: check ACGIH TLV			
USA	NIOSH		(0.07 MG/M3 LOQ)

EXPOSURE LIMITS

Country	Source	Type	Value
Poland		NDS	10 MG/M3
Poland		NDSCh	-
Poland		NDSP	-

Section 9 - Physical/Chemical Properties

Appearance — Physical State: Solid

Property	Value	At Temperature or Pressure
Molecular Weight	345,6600 AMU	
pH	N/A	
BP/BP Range	N/A	
MP/MP Range	86,000. - 88,000 °C.	
Freezing Point	N/A	
Vapor Pressure	N/A	
Vapor Density	N/A	
Saturated Vapor Conc.	N/A	
Bulk Density	N/A	
Odor Threshold	N/A	
Volatile%	N/A	
VOC Content	N/A	
Water Content	N/A	
Solvent Content	N/A	
Evaporation Rate	N/A	
Viscosity	N/A	

Surface Tension	N/A
Partition Coefficient	N/A
Decomposition Temp.	N/A
Flash Point	N/A
Explosion Limits	N/A
Flammability	N/A
Autoignition Temp	N/A
Refractive Index	N/A
Optical Rotation	N/A
Miscellaneous Data	N/A
Solubility	N/A

N/A = not available

Section 10 - Stability and Reactivity

STABILITY

Materials to Avoid: Strong oxidizing agents.

HAZARDOUS DECOMPOSITION PRODUCTS

Hazardous Decomposition Products: Carbon monoxide, Carbon dioxide, Hydrogen chloride gas.

Section 11 - Toxicological Information

ROUTE OF EXPOSURE

Multiple Routes: May cause irritation. Harmful if swallowed, inhaled, or absorbed through skin.

TARGET ORGAN(S) OR SYSTEM(S)

Kidneys. Central nervous system.

TOXICITY DATA

Oral
Human
6430,000000 mg/kg
LDLO

Oral
Rat
1855,000000 mg/kg
LD50
Remarks: Behavioral:Excitement. Behavioral:Convulsions or effect on seizure threshold. Behavioral:Ataxia.

Skin
Rat
> 6000,000000 mg/kg
LD50

Oral
Mouse
510,000000 mg/kg
LD50
Remarks: Behavioral:Convulsions or effect on seizure threshold. Behavioral:Ataxia. Behavioral:Excitement.

Oral
Rabbit

> 6000,000000 mg/kg
LD50

Skin
Rabbit
> 6000,000000 mg/kg
LD50

Intraperitoneal
Hamster
500 MG/KG
LD50

Oral
Duck
> 2000,000000 mg/kg
LD50

CHRONIC EXPOSURE - CARCINOGEN

Species: Rat
Route of Application: Oral
Dose: 18200 MG/KG
Exposure Time: 2Y
Frequency: C
Result: Tumorigenic:Carcinogenic by RTECS criteria. Tumorigenic Effects: Prostate tumors.

Species: Mouse
Route of Application: Oral
Dose: 56700 MG/KG
Exposure Time: 90W
Frequency: C
Result: Tumorigenic:Carcinogenic by RTECS criteria. Lungs, Thorax, or Respiration:Tumors. Tumorigenic Effects: Testicular tumors.

Species: Dog
Route of Application: Oral
Dose: 383 GM/KG
Exposure Time: 3Y
Frequency: C
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Liver:Tumors.

Species: Rat
Route of Application: Oral
Dose: 41 GM/KG
Exposure Time: 2Y
Frequency: C
Result: Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Liver:Multiple effects. Lungs, Thorax, or Respiration:Other changes.

Species: Mouse
Route of Application: Oral
Dose: 62622 MG/KG
Exposure Time: 2Y
Frequency: C
Result: Liver:Tumors. Tumorigenic:Equivocal tumorigenic agent by

RTECS criteria.

Species: Rat
Route of Application: Oral
Dose: 80 GM/KG
Exposure Time: 2Y
Frequency: C
Result: Liver:Tumors. Tumorigenic:Carcinogenic by RTECS criteria. Tumorigenic Effects: 0varian tumors.

Species: Rat
Route of Application: Oral
Dose: 72800 MG/KG
Exposure Time: 2Y
Frequency: C
Result: Liver:Tumors. Tumorigenic:Carcinogenic by RTECS criteria.

Species: Rat
Route of Application: Oral
Dose: 87360 MG/KG
Exposure Time: 2Y
Frequency: C
Result: Tumorigenic:Carcinogenic by RTECS criteria. Liver:Tumors.

Species: Rat
Route of Application: Oral
Dose: 10920 MG/KG
Exposure Time: 1Y
Frequency: C
Result: Blood:Lymphomas including Hodgkin's disease. Tumorigenic:Equivocal tumorigenic agent by RTECS criteria.

Species: Rat
Route of Application: Oral
Dose: 45500 MG/KG
Exposure Time: 1Y
Frequency: C
Result: Blood:Lymphomas including Hodgkin's disease. Tumorigenic:Equivocal tumorigenic agent by RTECS criteria.

IARC CARCINOGEN LIST

Rating: Group 3

NTP CARCINOGEN LIST

Rating: No evidence.
Species: Mouse/rat
Route: Feed

ACGIH CARCINOGEN LIST

Rating: A4

CHRONIC EXPOSURE - TERATOGEN

Species: Rat
Dose: 2 GM/KG
Route of Application: Oral
Exposure Time: (6-15D PREG)

Result: Specific Developmental Abnormalities: Musculoskeletal system.

Species: Mouse
Dose: 3 GM/KG
Route of Application: Oral
Exposure Time: (6-15D PREG)
Result: Effects on Embryo or Fetus: Fetal death.

CHRONIC EXPOSURE - MUTAGEN

Species: Rat
Dose: 150 UMOL/L
Cell Type: liver
Mutation test: DNA damage

Species: Rat
Route: Oral
Dose: 28 GM/KG
Exposure Time: 10W
Mutation test: sperm

Species: Mouse
Dose: 10 MG/L (+S9)
Cell Type: lymphocyte
Mutation test: Mutation in microorganisms

Species: Mouse
Dose: 2 MG/L
Cell Type: fibroblast
Mutation test: Morphological transformation.

Species: Mouse
Route: Oral
Dose: 6 MG/KG
Exposure Time: 50D
Mutation test: Cytogenetic analysis

Species: Hamster
Dose: 10 MG/L
Cell Type: Embryo
Mutation test: Morphological transformation.

Species: Hamster
Route: Intraperitoneal
Dose: 50 MG/KG
Mutation test: Cytogenetic analysis

CHRONIC EXPOSURE - REPRODUCTIVE HAZARD
Result: Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Species: Rat
Dose: 66 GM/KG
Route of Application: Oral
Exposure Time: (33D MALE)
Result: Paternal Effects: Testes, epididymis, sperm duct.
Paternal Effects: Prostate, seminal vessicle, Cowper's gland, accessory glands.

Species: Rat
Dose: 2 GM/KG
Route of Application: Oral
Exposure Time: (6-15D PREG)
Result: Effects on Fertility: Litter size (e.g.; # fetuses per litter; measured before birth). Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Rat
Dose: 4250 MG/KG
Route of Application: Oral
Exposure Time: (42D PRE-21D POST)
Result: Effects on Newborn: Physical. Maternal Effects: Ovaries, fallopian tubes. Effects on Newborn: Delayed effects.

Species: Rat
Dose: 10625 MG/KG
Route of Application: Oral
Exposure Time: (42D PRE-21D POST)
Result: Effects on Fertility: Mating performance (e.g., # sperm positive females per # females mated; # copulations per # estrus cycles). Maternal Effects: Uterus, cervix, vagina. Effects on Fertility: Female fertility index (e.g., # females pregnant per # sperm positive females; # females pregnant per # females mated).

Species: Rat
Dose: 7 GM/KG
Route of Application: Unreported
Exposure Time: (70D MALE)
Result: Paternal Effects: Spermatogenesis (including genetic material, sperm morphology,motility, and count).

Species: Rat
Dose: 2100 MG/KG
Route of Application: Unreported
Exposure Time: (21D PRE)
Result: Maternal Effects: Oogenesis.

Species: Rat
Dose: 9100 MG/KG
Route of Application: Unreported
Exposure Time: (70D MALE/21D PRE)
Result: Effects on Fertility: Mating performance (e.g., # sperm positive females per # females mated; # copulations per # estrus cycles).

Species: Mouse
Dose: 1 GM/KG
Route of Application: Oral
Exposure Time: (20D PREG)
Result: Maternal Effects: Ovaries, fallopian tubes.

Species: Mouse
Dose: 900 MG/KG
Route of Application: Oral
Exposure Time: (6-8D PREG)
Result: Maternal Effects: Uterus, cervix, vagina.

Species: Mouse
Dose: 2 GM/KG
Route of Application: Oral
Exposure Time: (6-15D PREG)
Result: Maternal Effects: Parturition.

Species: Mouse
Dose: 800 MG/KG
Route of Application: Intraperitoneal
Exposure Time: (1D PREG)
Result: Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Species: Mouse
Dose: 99 MG/KG
Route of Application: Subcutaneous
Exposure Time: (5-7D PREG)
Result: Effects on Newborn: Behavioral. Effects on Newborn: Biochemical and metabolic.

Species: Rabbit
Dose: 330 MG/KG
Route of Application: Oral
Exposure Time: (6-27D PREG)
Result: Maternal Effects: Other effects. Specific Developmental Abnormalities: Musculoskeletal system.

Section 12 - Ecological Information

No data available.

Section 13 - Disposal Considerations

APPROPRIATE METHOD OF DISPOSAL OF SUBSTANCE OR PREPARATION
Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT
Proper Shipping Name: Environmentally hazardous substances, solid, n.o.s.
UN#: 3077
Class: 9
Packing Group: Packing Group III
Hazard Label: Class 9
PIH: Not PIH

IATA
Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information

EU ADDITIONAL CLASSIFICATION

Symbol of Danger: Xn
Indication of Danger: Harmful.
R: 20/21/22-40
Risk Statements: Harmful by inhalation, in contact with skin and if swallowed. Limited evidence of a carcinogenic effect.
S: 7-23-36/37/39-45
Safety Statements: Keep container tightly closed. Do not breathe fumes. Wear suitable protective clothing, gloves, and eye/face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

US CLASSIFICATION AND LABEL TEXT
Indication of Danger: Harmful.
Risk Statements: Harmful by inhalation, in contact with skin and if swallowed. Limited evidence of a carcinogenic effect.
Safety Statements: Keep container tightly closed. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Do not breathe fumes. Wear suitable protective clothing, gloves, and eye/face protection.
US Statements: Possible mutagen. Reproductive hazard. Target organ(s): Nerves. Kidneys.

UNITED STATES REGULATORY INFORMATION
SARA LISTED: Yes
NOTES: This product is subject to SARA section 313 reporting requirements.

CANADA REGULATORY INFORMATION
WHMIS Classification: This product has been classified in accordance with the hazard criteria of the CPR, and the MSDS contains all the information required by the CPR.
DSL: Yes
NDSL: No

Section 16 - Other Information

DISCLAIMER
For R&D use only. Not for drug, household or other uses.

WARRANTY
The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Inc., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.
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Methyl chloride (Refrigerant gas R 40)

Safety Data Sheet P-4622

This SDS conforms to U.S. Code of Federal Regulations 29 CFR 1910.1200, Hazard Communication.

Date of issue: 01/01/1980 Revision date: 10/17/2016 Supersedes: 10/14/2015

SECTION: 1. Product and company identification

1.1. Product identifier

Product form : Substance

Name : Methyl chloride (Refrigerant gas R 40)

CAS No : 74-87-3

Formula : CH3Cl

Other means of identification : methylchloride, halocarbon 40, monochoromethane

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Industrial use. Use as directed.

1.3. Details of the supplier of the safety data sheet

Praxair, Inc.
10 Riverview Drive
Danbury, CT 06810-6268 - USA
T 1-800-772-9247 (1-800-PRAXAIR) - F 1-716-879-2146
www.praxair.com

1.4. Emergency telephone number

Emergency number : Onsite Emergency: 1-800-645-4633

CHEMTREC, 24hr/day 7days/week
— Within USA: 1-800-424-9300, Outside USA: 001-703-527-3887
(collect calls accepted, Contract 17729)

SECTION 2: Hazard identification

2.1. Classification of the substance or mixture

GHS-US classification

Flam. Gas 1	H220
Liquefied gas	H280
Acute Tox. 4 (Inhalation:gas)	H332
Carc. 2	H351
STOT RE 2	H373

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :

GHS02 GHS04 GHS07 GHS08

Signal word (GHS-US) : DANGER

Hazard statements (GHS-US) : H220 - **EXTREMELY FLAMMABLE GAS**
H280 - CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED
H332 - HARMFUL IF INHALED
H351 - SUSPECTED OF CAUSING CANCER
H373 - MAY CAUSE DAMAGE TO ORGANS (LUNG, KIDNEYS, LIVER, CENTRAL NERVOUS SYSTEM) THROUGH PROLONGED OR REPEATED EXPOSURE
CGA-HG04 - MAY FORM EXPLOSIVE MIXTURES WITH AIR
CGA-HG01 - MAY CAUSE FROSTBITE

Precautionary statements (GHS-US) : P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P210 - Keep away from Heat, Open flames, Sparks, Hot surfaces. - No smoking
P260 - Do not breathe gas

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P262 - Do not get in eyes, on skin, or on clothing
P271+P403 - Use and store only outdoors or in a well-ventilated place
P280+P284 - Wear protective gloves, protective clothing, eye protection, respiratory protection, and/or face protection
P377 - Leaking gas fire: Do not extinguish, unless leak can be stopped safely
P381 - Eliminate all ignition sources if safe to do so
P405 - Store locked up
P501 - Dispose of contents/container in accordance with container Supplier/owner instructions
CGA-PG05 - Use a back flow preventive device in the piping
CGA-PG12 - Do not open valve until connected to equipment prepared for use
CGA-PG06 - Close valve after each use and when empty
CGA-PG02 - Protect from sunlight when ambient temperature exceeds 52°C (125°F)

2.3. Other hazards

Other hazards not contributing to the classification : Contact with liquid may cause cold burns/frostbite.

2.4. Unknown acute toxicity (GHS US)

No data available

SECTION 3: Composition/Information on ingredients

3.1. Substance

Name	Product identifier	%
Methyl chloride (Refrigerant gas R 40) (Main constituent)	(CAS No) 74-87-3	100

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Remove to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, trained personnel should give oxygen. Call a physician.

First-aid measures after skin contact : The liquid may cause frostbite. For exposure to liquid, immediately warm frostbite area with warm water not to exceed 105°F (41°C). Water temperature should be tolerable to normal skin. Maintain skin warming for at least 15 minutes or until normal coloring and sensation have returned to the affected area. In case of massive exposure, remove clothing while showering with warm water. Seek medical evaluation and treatment as soon as possible.

First-aid measures after eye contact : Immediately flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. Contact an ophthalmologist immediately.

First-aid measures after ingestion : Ingestion is not considered a potential route of exposure.

4.2. Most important symptoms and effects, both acute and delayed

No additional information available

4.3. Indication of any immediate medical attention and special treatment needed

Obtain medical assistance.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Carbon dioxide, Dry chemical, Water spray or fog. Use extinguishing media appropriate for surrounding fire.

5.2. Special hazards arising from the substance or mixture

Fire hazard : **EXTREMELY FLAMMABLE GAS**. If venting or leaking gas catches fire, do not extinguish flames. Flammable vapors may spread from leak, creating an explosive reignition hazard. Vapors can be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharge, or other ignition sources at locations distant from product handling point. Explosive atmospheres may linger. Before entering an area, especially a confined area, check the atmosphere with an appropriate device.

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Explosion hazard	:	**EXTREMELY FLAMMABLE GAS**. Forms explosive mixtures with air and oxidizing agents.
Reactivity	:	No reactivity hazard other than the effects described in sub-sections below.

5.3. Advice for firefighters

Firefighting instructions	:	**DANGER! Toxic, flammable liquefied gas** Evacuate all personnel from the danger area. Use self-contained breathing apparatus (SCBA) and protective clothing. Immediately cool containers with water from maximum distance. Stop flow of gas if safe to do so, while continuing cooling water spray. Remove ignition sources if safe to do so. Remove containers from area of fire if safe to do so. On-site fire brigades must comply with OSHA 29 CFR 1910.156 and applicable standards under 29 CFR 1910 Subpart L—Fire Protection.
Special protective equipment for fire fighters	:	Standard protective clothing and equipment (Self Contained Breathing Apparatus) for fire fighters.
Other information	:	Containers are equipped with a pressure relief device. (Exceptions may exist where authorized by DOT.).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	:	**DANGER: Flammable, liquefied gas.** FORMS EXPLOSIVE MIXTURES WITH AIR. Immediately evacuate all personnel from danger area. Use self-contained breathing apparatus where needed. Remove all sources of ignition if safe to do so. Reduce vapors with fog or fine water spray, taking care not to spread liquid with water. Shut off flow if safe to do so. Ventilate area or move container to a well-ventilated area. Flammable vapors may spread from leak and could explode if reignited by sparks or flames. Explosive atmospheres may linger. Before entering area, especially confined areas, check atmosphere with an appropriate device.

6.1.1. For non-emergency personnel

No additional information available

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent waste from contaminating the surrounding environment. Prevent soil and water pollution. Dispose of contents/container in accordance with local/regional/national/international regulations. Contact supplier for any special requirements.

6.3. Methods and material for containment and cleaning up

No additional information available

6.4. Reference to other sections

See also sections 8 and 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling	:	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use only non-sparking tools. Use only explosion-proof equipment Wear leather safety gloves and safety shoes when handling cylinders. Protect cylinders from physical damage; do not drag, roll, slide or drop. While moving cylinder, always keep in place removable valve cover. Never attempt to lift a cylinder by its cap; the cap is intended solely to protect the valve. When moving cylinders, even for short distances, use a cart (trolley, hand truck, etc.) designed to transport cylinders. Never insert an object (e.g, wrench, screwdriver, pry bar) into cap openings; doing so may damage the valve and cause a leak. Use an adjustable strap wrench to remove over-tight or rusted caps. Slowly open the valve. If the valve is hard to open, discontinue use and contact your supplier. Close the container valve after each use; keep closed even when empty. Never apply flame or localized heat directly to any part of the container. High temperatures may damage the container and could cause the pressure relief device to fail prematurely, venting the container contents. For other precautions in using this product, see section 16.

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7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Store only where temperature will not exceed 125°F (52°C). Post “No Smoking/No Open Flames” signs in storage and use areas. There must be no sources of ignition. Separate packages and protect against potential fire and/or explosion damage following appropriate codes and requirements (e.g, NFPA 30, NFPA 55, NFPA 70, and/or NFPA 221 in the U.S.) or according to requirements determined by the Authority Having Jurisdiction (AHJ). Always secure containers upright to keep them from falling or being knocked over. Install valve protection cap, if provided, firmly in place by hand when the container is not in use. Store full and empty containers separately. Use a first-in, first-out inventory system to prevent storing full containers for long periods. For other precautions in using this product, see section 16

OTHER PRECAUTIONS FOR HANDLING, STORAGE, AND USE: When handling product under pressure, use piping and equipment adequately designed to withstand the pressures to be encountered. Never work on a pressurized system. Use a back flow preventive device in the piping. Gases can cause rapid suffocation because of oxygen deficiency; store and use with adequate ventilation. If a leak occurs, close the container valve and blow down the system in a safe and environmentally correct manner in compliance with all international, federal/national, state/provincial, and local laws; then repair the leak. Never place a container where it may become part of an electrical circuit.

7.3. Specific end use(s)

None.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Methyl chloride (Refrigerant gas R 40) (74-87-3)		
ACGIH	ACGIH TLV-TWA (ppm)	50 ppm
ACGIH	ACGIH TLV-STEL (ppm)	100 ppm
USA OSHA	OSHA PEL (TWA) (ppm)	100 ppm
USA OSHA	OSHA PEL (Ceiling) (ppm)	200 ppm
USA IDLH	US IDLH (mg/m³)	≈ mg/m³
USA IDLH	US IDLH (ppm)	2000 ppm

8.2. Exposure controls

Appropriate engineering controls : Use an explosion-proof local exhaust system. Local exhaust and general ventilation must be adequate to meet exposure standards. MECHANICAL (GENERAL): **Inadequate - Use only in a closed system.** Use explosion proof equipment and lighting. A canopy-type, forced-draft fume hood is preferred.

Eye protection : Wear safety glasses when handling cylinders; vapor-proof goggles and a face shield during cylinder changeout or whenever contact with product is possible. Select eye protection in accordance with OSHA 29 CFR 1910.133.

Skin and body protection : Wear metatarsal shoes and work gloves for cylinder handling, and protective clothing where needed. Wear appropriate chemical gloves during cylinder changeout or wherever contact with product is possible. Select per OSHA 29 CFR 1910.132, 1910.136, and 1910.138.

Respiratory protection : When workplace conditions warrant respirator use, follow a respiratory protection program that meets OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable). Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure. For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus (SCBA).

Thermal hazard protection : Wear cold insulating gloves when transfilling or breaking transfer connections.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Gas

Appearance : Colorless gas.

Molecular mass : 50.5 g/mol

Color : Colorless.

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Odor	:	Sweetish. Ethereal.
Odor threshold	:	< 0.01 ppm
pH	:	Not applicable.
Relative evaporation rate (butyl acetate=1)	:	No data available
Relative evaporation rate (ether=1)	:	Not applicable.
Melting point	:	-97.7 °C (-143.86°F)
Freezing point	:	No data available
Boiling point	:	-24.2 °C (-11.6°F)
Flash point	:	Not applicable.
Critical temperature	:	143.1 °C (289.6°F)
Auto-ignition temperature	:	632 °C (1170°F)
Decomposition temperature	:	No data available
Flammability (solid, gas)	:	8.1 - 17.4 vol %
Vapor pressure	:	5.1 bar (73.4 psia)(@21.1°C/70°F)
Critical pressure	:	66.5 bar (966 psia)
Relative vapor density at 20 °C	:	No data available
Relative density	:	0.92 (at 20°C/68°F)
Density	:	0.921 g/cm³ (at 20 °C)
Relative gas density	:	1.743 (at 21.1°C/70°F, 1 atm)
Solubility	:	Water: 6310 mg/l
Log Pow	:	0.91
Log Kow	:	Not applicable.
Viscosity, kinematic	:	Not applicable.
Viscosity, dynamic	:	Not applicable.
Explosive properties	:	Not applicable.
Oxidizing properties	:	None.
Explosion limits	:	No data available

9.2. Other information

Gas group	:	Liquefied gas
Additional information	:	Gas/vapor heavier than air. May accumulate in confined spaces, particularly at or below ground level

SECTION 10: Stability and reactivity

10.1. Reactivity

No reactivity hazard other than the effects described in sub-sections below.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

May occur.

10.4. Conditions to avoid

Avoid temperature above 752°F (400°C).

10.5. Incompatible materials

May react with aluminium. Reaction with aluminum may form pyrophoric trimethyl aluminum or aluminum alkyls. Oxidizing agents. Magnesium. Zinc. Potassium. Sodium. Aluminum chloride. Ethylene. Moisture. Rubber.

10.6. Hazardous decomposition products

Carbon dioxide. Carbon monoxide. Chlorine. On heating/burning: release of toxic and corrosive gases/vapors hydrogen chloride : formation of small quantities of phosgene.

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SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Inhalation:gas: HARMFUL IF INHALED.

Methyl chloride (Refrigerant gas R 40) (\f)74-87-3	
LD50 oral rat	1800 mg/kg
LC50 inhalation rat (mg/l)	5300 mg/m³ (Exposure time: 4 h)
LC50 inhalation rat (ppm)	8300 ppm/1h
ATE US (oral)	1800.000 mg/kg body weight
ATE US (gases)	8300.000 ppm/1h

Skin corrosion/irritation : Not classified

pH: Not applicable.

Serious eye damage/irritation : Not classified

pH: Not applicable.

Respiratory or skin sensitization : Not classified

Germ cell mutagenicity : Not classified

Carcinogenicity : SUSPECTED OF CAUSING CANCER.

Methyl chloride (Refrigerant gas R 40) (74-87-3)	
IARC group	3 - Not classifiable

Reproductive toxicity : Not classified

Specific target organ toxicity (single exposure) : Not classified

Specific target organ toxicity (repeated exposure) : MAY CAUSE DAMAGE TO ORGANS (LUNG, KIDNEYS, LIVER, CENTRAL NERVOUS SYSTEM) THROUGH PROLONGED OR REPEATED EXPOSURE.

Aspiration hazard : Not classified

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No known ecological damage caused by this product.

Methyl chloride (Refrigerant gas R 40) (74-87-3)	
LC50 fish 1	550 mg/l (Exposure time: 96 h - Species: Lepomis macrochirus [static])

12.2. Persistence and degradability

Methyl chloride (Refrigerant gas R 40) (74-87-3)	
Persistence and degradability	The substance is biodegradable. Unlikely to persist.

12.3. Bioaccumulative potential

Methyl chloride (Refrigerant gas R 40) (74-87-3)	
Log Pow	0.91
Log Kow	Not applicable.
Bioaccumulative potential	Not expected to bioaccumulate due to the low log Kow (log Kow < 4). Refer to section 9.

12.4. Mobility in soil

Methyl chloride (Refrigerant gas R 40) (74-87-3)	
Mobility in soil	No data available.
Ecology - soil	Because of its high volatility, the product is unlikely to cause ground or water pollution.

12.5. Other adverse effects

Other adverse effects : May cause pH changes in aqueous ecological systems.

Effect on ozone layer : None

Global warming potential [CO2=1] : 13

Effect on the global warming : Contains Fluorinated greenhouse gases covered by the Kyoto protocol

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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Regional legislation (waste) : U.S. - RCRA (Resource Conservation & Recovery Act) - Basis for Listing - Appendix VII. U.S. - RCRA (Resource Conservation & Recovery Act) - Constituents for Detection Monitoring. U.S. - RCRA (Resource Conservation & Recovery Act) - Hazardous Constituents - Appendix VIII to 40 CFR 261. U.S. - RCRA (Resource Conservation & Recovery Act) - List for Hazardous Constituents. U.S. - RCRA (Resource Conservation & Recovery Act) - Part 268 Appendix III - Halogenated Organic Compounds (HOCs). U.S. - RCRA (Resource Conservation & Recovery Act) - Phase 4 LDR Rule - Universal Treatment Standards. U.S. - RCRA (Resource Conservation & Recovery Act) - TSD Facilities Ground Water Monitoring. U.S. - RCRA (Resource Conservation & Recovery Act) - U Series Wastes - Acutely Toxic Wastes & Other Hazardous Characteristics.

Waste disposal recommendations : Do not attempt to dispose of residual or unused quantities. Return container to supplier.

SECTION 14: Transport information

In accordance with DOT

Transport document description : UN1063 Methyl chloride, 2.1

UN-No.(DOT) : UN1063

Proper Shipping Name (DOT) : Methyl chloride

Class (DOT) : 2.1 - Class 2.1 - Flammable gas 49 CFR 173.115

Hazard labels (DOT) : 2.1 - Flammable gas

DOT Special Provisions (49 CFR 172.102) : N86 - UN pressure receptacles made of aluminum alloy are not authorized
T50 - When portable tank instruction T50 is referenced in Column (7) of the 172.101 Table, the applicable liquefied compressed gases are authorized to be transported in portable tanks in accordance with the requirements of 173.313 of this subchapter

Additional information

Emergency Response Guide (ERG) Number : 115

Other information : No supplementary information available.

Special transport precautions : Avoid transport on vehicles where the load space is not separated from the driver's compartment. Ensure vehicle driver is aware of the potential hazards of the load and knows what to do in the event of an accident or an emergency. Before transporting product containers: - Ensure there is adequate ventilation. - Ensure that containers are firmly secured. - Ensure cylinder valve is closed and not leaking. - Ensure valve outlet cap nut or plug (where provided) is correctly fitted. - Ensure valve protection device (where provided) is correctly fitted.

Transport by sea

UN-No. (IMDG) : 1063

Proper Shipping Name (IMDG) : METHYL CHLORIDE (REFRIGERANT GAS R 40)

Class (IMDG) : 2 - Gases

MFAG-No : 115

Air transport

UN-No. (IATA) : 1063

Proper Shipping Name (IATA) : Methyl chloride

Class (IATA) : 2

Civil Aeronautics Law : Gases under pressure/Gases flammable under pressure

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SECTION 15: Regulatory information

15.1. US Federal regulations

Methyl chloride (Refrigerant gas R 40) (74-87-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313	
CERCLA RQ	100 lb
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard Sudden release of pressure hazard Fire hazard
SARA Section 313 - Emission Reporting	1.0 %

15.2. International regulations

CANADA

Methyl chloride (Refrigerant gas R 40) (74-87-3)
Listed on the Canadian DSL (Domestic Substances List)

EU-Regulations

Methyl chloride (Refrigerant gas R 40) (74-87-3)
Listed on the EEC inventory EINECS (European Inventory of Existing Commercial Chemical Substances)

15.2.2. National regulations

Methyl chloride (Refrigerant gas R 40) (74-87-3)
Listed on the AICS (Australian Inventory of Chemical Substances) Listed on IECSC (Inventory of Existing Chemical Substances Produced or Imported in China) Listed on the Japanese ENCS (Existing & New Chemical Substances) inventory Listed on the Korean ECL (Existing Chemicals List) Listed on NZIoC (New Zealand Inventory of Chemicals) Listed on PICCS (Philippines Inventory of Chemicals and Chemical Substances) Japanese Poisonous and Deleterious Substances Control Law Japanese Pollutant Release and Transfer Register Law (PRTR Law) Listed on the Canadian IDL (Ingredient Disclosure List) Listed on INSQ (Mexican National Inventory of Chemical Substances)

15.3. US State regulations

Methyl chloride (Refrigerant gas R 40)(74-87-3)	
U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	Yes
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	Yes
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) - Environmental Hazard List U.S. - Pennsylvania - RTK (Right to Know) List

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SECTION 16: Other information

Other information : When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Before using any plastics, confirm their compatibility with this product

Praxair asks users of this product to study this SDS and become aware of the product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this SDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information

The opinions expressed herein are those of qualified experts within Praxair, Inc. We believe that the information contained herein is current as of the date of this Safety Data Sheet. Since the use of this information and the conditions of use are not within the control of Praxair, Inc, it is the user's obligation to determine the conditions of safe use of the product

Praxair SDSs are furnished on sale or delivery by Praxair or the independent distributors and suppliers who package and sell our products. To obtain current SDSs for these products, contact your Praxair sales representative, local distributor, or supplier, or download from www.praxair.com. If you have questions regarding Praxair SDSs, would like the document number and date of the latest SDS, or would like the names of the Praxair suppliers in your area, phone or write the Praxair Call Center (Phone: 1-800-PRAXAIR/1-800-772-9247; Address: Praxair Call Center, Praxair, Inc, P.O. Box 44, Tonawanda, NY 14151-0044)

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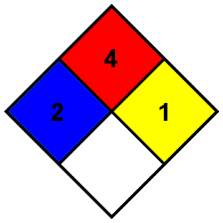
NFPA health hazard : 2 - Intense or continued exposure could cause temporary incapacitation or possible residual injury unless prompt medical attention is given.

NFPA fire hazard : 4 - Will rapidly or completely vaporize at normal pressure and temperature, or is readily dispersed in air and will burn readily.

NFPA reactivity : 1 - Normally stable, but can become unstable at elevated temperatures and pressures or may react with water with some release of energy, but not violently.



HMIS III Rating

Health : 2 Moderate Hazard - Temporary or minor injury may occur

Flammability : 4 Severe Hazard

Physical : 2 Moderate Hazard

SDS US (GHS HazCom 2012) - Praxair

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

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Fisher Scientific

Part of Thermo Fisher Scientific

SAFETY DATA SHEET

Creation Date 27-Jan-2010 **Revision Date** 02-Oct-2015 **Revision Number** 2

1. Identification

Product Name **Methylene chloride**

Cat No. : **D37-1; D37-4; D37-20; D37-200; D37-200LC; D37-500; D37FB-19; D37FB-50; D37FB-115; D37FB-200; D37POP-19; D37POPB-50; D37POPB-200; D37RB-19; D37RB-50; D37RB-115; D37RB-200; D37RS-19; D37RS-28; D37RS-50; D37RS-115; D37RS-200; D37SK-4; D37SK-4LC; D37SS-28; D37SS-50; D37SS-115; D37SS-200; D37SS-1350**

Synonyms Dichloromethane; DCM

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number
CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin Corrosion/irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Carcinogenicity	Category 1B
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Central nervous system (CNS), Respiratory system.	
Specific target organ toxicity - (repeated exposure)	Category 2
Target Organs - Liver, Kidney, Blood.	

Label Elements

Signal Word
Danger

Hazard Statements
Causes skin irritation
Causes serious eye irritation

May cause respiratory irritation
May cause drowsiness or dizziness
May cause cancer
May cause damage to organs through prolonged or repeated exposure

Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Wear eye/face protection
Do not breathe dust/fume/gas/mist/vapors/spray
Use only outdoors or in a well-ventilated area
Response
IF exposed or concerned: Get medical attention/advice
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Skin
IF ON SKIN: Wash with plenty of soap and water
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)

WARNING! This product contains a chemical known in the State of California to cause cancer, birth defects or other reproductive harm.

3. Composition / information on ingredients

Component	CAS-No	Weight %
Methylene chloride	75-09-2	>99.5
Methyl alcohol	67-56-1	0 - 0.4
Cyclohexene	110-83-8	0 - 0.01
2-Methyl-2-butene	513-35-9	0 - 0.01

4. First-aid measures

General Advice If symptoms persist, call a physician.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Obtain medical attention.

Ingestion Do not induce vomiting. Call a physician or Poison Control Center immediately.

Most important symptoms/effects Breathing difficulties. . Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable Extinguishing Media No information available

Flash Point No information available
Method - No information available

Autoignition Temperature 556 °C / 1032.8 °F

Explosion Limits
Upper 23 vol %
Lower 13 vol %
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products
Carbon monoxide (CO) Carbon dioxide (CO_2) Hydrogen chloride gas Phosgene
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
2	1	0	N/A

6. Accidental release measures

Personal Precautions Use personal protective equipment. Ensure adequate ventilation. Avoid contact with skin, eyes and clothing. Keep people away from and upwind of spill/leak.

Environmental Precautions Should not be released into the environment. See Section 12 for additional ecological information.

Methods for Containment and Clean Up Soak up with inert absorbent material. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Use only under a chemical fume hood.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Methylene chloride	TWA: 50 ppm	(Vacated) TWA: 500 ppm (Vacated) STEL: 2000 ppm (Vacated) Ceiling: 1000 ppm TWA: 25 ppm STEL: 125 ppm	IDLH: 2300 ppm
Methyl alcohol	TWA: 200 ppm STEL: 250 ppm Skin	(Vacated) TWA: 200 ppm (Vacated) TWA: 260 mg/m³ (Vacated) STEL: 250 ppm (Vacated) STEL: 325 mg/m³ Skin TWA: 200 ppm TWA: 260 mg/m³	IDLH: 6000 ppm TWA: 200 ppm TWA: 260 mg/m³ STEL: 250 ppm STEL: 325 mg/m³
Cyclohexene	TWA: 300 ppm	(Vacated) TWA: 300 ppm (Vacated) TWA: 1015 mg/m³ TWA: 300 ppm TWA: 1015 mg/m³	IDLH: 2000 ppm TWA: 300 ppm TWA: 1015 mg/m³

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Methylene chloride	TWA: 50 ppm TWA: 174 mg/m³	TWA: 100 ppm TWA: 330 mg/m³ STEL: 500 ppm STEL: 1740 mg/m³	TWA: 50 ppm
Methyl alcohol	TWA: 200 ppm TWA: 262 mg/m³ STEL: 250 ppm STEL: 328 mg/m³ Skin	TWA: 200 ppm TWA: 260 mg/m³ STEL: 250 ppm STEL: 310 mg/m³	TWA: 200 ppm STEL: 250 ppm Skin
Cyclohexene	TWA: 300 ppm TWA: 1010 mg/m³	TWA: 300 ppm TWA: 1015 mg/m³	TWA: 300 ppm

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Liquid
Appearance	Colorless
Odor	sweet
Odor Threshold	No information available
pH	Not applicable
Melting Point/Range	-97 °C / -142.6 °F
Boiling Point/Range	39 °C / 102.2 °F
Flash Point	No information available

Evaporation Rate	No information available
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	23 vol %
Lower	13 vol %
Vapor Pressure	20 mmHg @ 3502°C
Vapor Density	2.93 (Air = 1.0)
Specific Gravity	1.33
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	556 °C / 1032.8 °F
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	C H2 Cl2
Molecular Weight	84.93

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products. Excess heat.

Incompatible Materials Strong oxidizing agents, Strong acids, Amines

Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO_2), Hydrogen chloride gas, Phosgene

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Methylene chloride	> 2000 mg/kg (Rat)	> 2000 mg/kg (Rat)	53 mg/L (Rat) 6 h 76000 mg/m³ (Rat) 4 h
Methyl alcohol	LD50 = 6200 mg/kg (Rat)	LD50 = 15800 mg/kg (Rabbit)	64000 ppm (Rat) 4 h 83.2 mg/L (Rat) 4 h
Cyclohexene	LD50 = 2400 µL/kg (Rat)	>200 mg/kg (Rat)	>21.6 mg/L/4h (rat)
2-Methyl-2-butene	700-2600 mg/kg (Rat)	>2000 mg/kg (Rat)	LC50 > 61000 ppm (Rat) 4 h

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation Irritating to eyes and skin

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Methylene chloride	75-09-2	Group 2A	Reasonably Anticipated	A3	X	A3
Methyl alcohol	67-56-1	Not listed	Not listed	Not listed	Not listed	Not listed

Cyclohexene	110-83-8	Not listed	Not listed	Not listed	Not listed	Not listed
2-Methyl-2-butene	513-35-9	Not listed	Not listed	Not listed	Not listed	Not listed

IARC: (International Agency for Research on Cancer)

IARC: (International Agency for Research on Cancer)
Group 1 - Carcinogenic to Humans
Group 2A - Probably Carcinogenic to Humans
Group 2B - Possibly Carcinogenic to Humans

NTP: (National Toxicity Program)

NTP: (National Toxicity Program)
Known - Known Carcinogen
Reasonably Anticipated - Reasonably Anticipated to be a Human Carcinogen

ACGIH: (American Conference of Governmental Industrial Hygienists)

A1 - Known Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Animal Carcinogen
ACGIH: (American Conference of Governmental Industrial Hygienists)

Mexico - Occupational Exposure Limits - Carcinogens

Mexico - Occupational Exposure Limits - Carcinogens
A1 - Confirmed Human Carcinogen
A2 - Suspected Human Carcinogen
A3 - Confirmed Animal Carcinogen
A4 - Not Classifiable as a Human Carcinogen
A5 - Not Suspected as a Human Carcinogen

Mutagenic Effects Mutagenic effects have occured in microorganisms.

Reproductive Effects Experiments have shown reproductive toxicity effects on laboratory animals.

Developmental Effects Developmental effects have occurred in experimental animals.

Teratogenicity No information available.

STOT - single exposure Central nervous system (CNS) Respiratory system
STOT - repeated exposure Liver Kidney Blood

Aspiration hazard No information available

Symptoms / effects,both acute and delayed Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting
Endocrine Disruptor Information No information available

Other Adverse Effects Tumorigenic effects have been reported in experimental animals. See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity

.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Methylene chloride	EC50:>660 mg/L/96h	Pimephales promelas: LC50:193 mg/L/96h	EC50: 1 mg/L/24 h EC50: 2.88 mg/L/15 min	EC50: 140 mg/L/48h
Methyl alcohol	Not listed	Pimephales promelas: LC50 > 10000 mg/L 96h	EC50 = 39000 mg/L 25 min EC50 = 40000 mg/L 15 min EC50 = 43000 mg/L 5 min	EC50 > 10000 mg/L 24h
Cyclohexene	Not listed	Poecillia reticulata: 7.1 mg/L/96h	Not listed	Daphnia: EC50: 5.3 mg/L/48h
2-Methyl-2-butene	Not listed	Not listed	Not listed	EC50: = 3 mg/L, 48h (Daphnia magna)

Persistence and Degradability Persistence is unlikely based on information available.
Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its volatility.

Component	log Pow
Methylene chloride	1.25
Methyl alcohol	-0.74

Cyclohexene	3.27

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Methylene chloride - 75-09-2	U080	-
Methyl alcohol - 67-56-1	U154	-

14. Transport information

DOT

UN-No UN1593
Proper Shipping Name DICHLOROMETHANE
Hazard Class 6.1
Packing Group III

TDG

UN-No UN1593
Proper Shipping Name DICHLOROMETHANE
Hazard Class 6.1
Packing Group III

IATA

UN-No UN1593
Proper Shipping Name Dichloromethane
Hazard Class 6.1
Packing Group III

IMDG/IMO

UN-No UN1593
Proper Shipping Name Dichloromethane
Hazard Class 6.1
Packing Group III

15. Regulatory information

All of the components in the product are on the following Inventory lists: X = listed

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Methylene chloride	X	X	-	200-838-9	-		X	X	X	X	X
Methyl alcohol	X	X	-	200-659-6	-		X	X	X	X	X
Cyclohexene	X	X	-	203-807-8	-		X	X	X	X	X
2-Methyl-2-butene	X	X	-	208-156-3	-		X	X	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b)

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Methylene chloride	75-09-2	>99.5	0.1
Methyl alcohol	67-56-1	0 - 0.4	1.0

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Methylene chloride	-	-	X	X

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Methylene chloride	X		-
Methyl alcohol	X		-

OSHA Occupational Safety and Health Administration

Component	Specifically Regulated Chemicals	Highly Hazardous Chemicals
Methylene chloride	125 ppm STEL 12.5 ppm Action Level 25 ppm TWA	-

CERCLA

This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Methylene chloride	1000 lb 1 lb	-
Methyl alcohol	5000 lb	-

California Proposition 65 This product contains the following proposition 65 chemicals

Component	CAS-No	California Prop. 65	Prop 65 NSRL	Category
Methylene chloride	75-09-2	Carcinogen	200 µg/day 50 µg/day	Carcinogen
Methyl alcohol	67-56-1	Developmental	-	Developmental

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Methylene chloride	X	X	X	X	X
Methyl alcohol	X	X	X	X	X
Cyclohexene	X	X	X	-	X
2-Methyl-2-butene	X	X	X	-	-

U.S. Department of Transportation

Reportable Quantity (RQ):	Y
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class D1B Toxic materials
D2A Very toxic materials

16. Other information

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

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Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS

Division of Facilities Services

DOD Hazardous Material Information (ANSI Format)
For Cornell University Convenience Only

METHYL TERTIARY BUTYL ETHER

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Section 1 - Product and Company Identification
METHYL TERTIARY BUTYL ETHER

Product Identification: METHYL TERTIARY BUTYL ETHER
Date of MSDS: 11/01/1990 **Technical Review Date:** 12/21/1995
FSC: 6810 **NIIN: LIIN:** 00N066437
Submitter: N EN
Status Code: C
MFN: 01
Article: N
Kit Part: N

Manufacturer's Information

Manufacturer's Name: GENIUM PUBLISHING CORP
Manufacturer's Address1: 1145 CATALYN ST
Manufacturer's Address2: SCHENECTADY, NY 12303-1836
Manufacturer's Country: US
General Information Telephone: 518-377-8854
Emergency Telephone: 518-377-8854
Emergency Telephone: 518-377-8854
MSDS Preparer's Name: MJ ALLISON
Proprietary: N
Reviewed: N
Published: Y
CAGE: 5Z768
Special Project Code: N

Contractor Information

Contractor's Name: GENIUM PUBLISHING CORPORATION
Contractor's Address1: 1145 CATALYN ST
Contractor's Address2: SCHENECTADY, NY 12303-1836
Contractor's Telephone: 518-377-8854
Contractor's CAGE: 5Z768

Section 2 - Compositon/Information on Ingredients
METHYL TERTIARY BUTYL ETHER

Ingredient Name: EFTS OF OVEREXP:NOSE, THROAT, SKIN & CORNEA. ASPIR OF GASOLINE-MTBE MIX MAY CAUSE LUNG PNEUM. ACUTE:CONT W/EYES (ING 4)
Ingredient CAS Number: Ingredient CAS Code: X
RTECS Number: 9999999ZZ **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Enviromental Weight:
Other REC Limits: N/K
OSHA PEL: NOT APPLICABLE **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT APPLICABLE **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical:

Ingredient Name: ETHER, TERT-BUTYL METHYL; (METHYL TERT-BUTYL ETHER) (SARA 313) (CERCLA)
Ingredient CAS Number: 1634-04-4 **Ingredient CAS Code:** M
RTECS Number: KN5250000 **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: 100
% Enviromental Weight:
Other REC Limits: N/K
OSHA PEL: N/K (FP N) **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: N/K (FP N) **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity: 1 LB
DOT Reporting Quantity: 1 LB
Ozone Depleting Chemical: N

Ingredient Name: FIRST AID:MOUTH IF UNCON/CONVL. IF INGEST, CONSULT MD IMMED. DO NOT INDUCE VOMIT DUE TO ASPIR PNEUM RISK. IF (ING 7)
Ingredient CAS Number: Ingredient CAS Code: X
RTECS Number: 9999999ZZ **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Enviromental Weight:
Other REC Limits: N/K
OSHA PEL: NOT APPLICABLE **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT APPLICABLE **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical:

Ingredient Name: HYGIENE PRACT:DRINKING, SMKG, USING TOILET/APPLYING COSMETICS. CONTAMD EQUIP:NEVER WEAR CONT LENSES IN WORK (ING 23)
Ingredient CAS Number: Ingredient CAS Code: X
RTECS Number: 9999999ZZ **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Enviromental Weight:
Other REC Limits: N/K
OSHA PEL: NOT APPLICABLE **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT APPLICABLE **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical:

Ingredient Name: ING 10:SUBSTANTIAL MTBE EXPOS. PFT'S, CHEST X-RAYS & SUPPORTIVE CARE MAY BE NEC AFTER ASPIR EXPOSURES.
Ingredient CAS Number: Ingredient CAS Code: X
RTECS Number: 9999999ZZ **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Enviromental Weight:
Other REC Limits: N/K
OSHA PEL: NOT APPLICABLE **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT APPLICABLE **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical:

Ingredient Name: ING 12:(EXPLO)/WATERWAYS. MTBE IS MORE WATER SOL/OTHER

GASOLINE COMPONENTS, SO THERE MAY BE HIGHER MBTE CONC IN (ING 14)
Ingredient CAS Number: Ingredient CAS Code: X
RTECS Number: 9999999ZZ **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Enviromental Weight:
Other REC Limits: N/K
OSHA PEL: NOT APPLICABLE **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT APPLICABLE **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical:

Ingredient Name: ING 13:GROUNDWATER WHEN THERE IS SPILL OF GASOLINE-MTBE MIX. IT ALSO HAS MOD TO HIGH MOBILITY IN SOIL. MTBE IS (ING 15)
Ingredient CAS Number: Ingredient CAS Code: X
RTECS Number: 9999999ZZ **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Enviromental Weight:
Other REC Limits: N/K
OSHA PEL: NOT APPLICABLE **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT APPLICABLE **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical:

Ingredient Name: ING 14:POORLY BIODEGRADED BY MICROORGANISMS IN ACTIVATED SLUDGE. CLEANUP OF GROUNDWATER CONTAM IS DFCLT. WHEN (ING 16)

Ingredient CAS Number: Ingredient CAS Code: X
RTECS Number: 9999999ZZ **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Enviromental Weight:
Other REC Limits: N/K
OSHA PEL: NOT APPLICABLE **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT APPLICABLE **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical:

Ingredient Name: ING 15:HIGH AIR-TO-WATER RATIOS ARE USED, AIR STRIPPING SYS CAN REMOVE MTBE. PROD OF ATM DEGRADATION INCL (ING 17)
Ingredient CAS Number: Ingredient CAS Code: X
RTECS Number: 9999999ZZ **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Enviromental Weight:
Other REC Limits: N/K
OSHA PEL: NOT APPLICABLE **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT APPLICABLE **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical:

Ingredient Name: ING 16:T-BUTYL FORMATE, ACETONE, & METHYL RADICALS. FOLLOW APPLIC OSHA REGS (29 CFR 1910.120).
Ingredient CAS Number: Ingredient CAS Code: X

RTECS Number: 9999999ZZ **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Enviromental Weight:
Other REC Limits: N/K
OSHA PEL: NOT APPLICABLE **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT APPLICABLE **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical:

Ingredient Name: ING 18:PRACTICE GOOD PERSONAL HYGIENE & HOUSEKEEPING PROCEDURES.
Ingredient CAS Number: Ingredient CAS Code: X
RTECS Number: 9999999ZZ **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Enviromental Weight:
Other REC Limits: N/K
OSHA PEL: NOT APPLICABLE **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT APPLICABLE **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical:

Ingredient Name: ING 22:AREA; SOFT LENSES MAY ABSORB, & ALL LENSES CONC, IRRITANTS. REMOVE THIS MATL FROM YOUR SHOES & EQUIP. (ING 24)
Ingredient CAS Number: Ingredient CAS Code: X
RTECS Number: 9999999ZZ **RTECS Code:** M

=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Enviromental Weight:
Other REC Limits: N/K
OSHA PEL: NOT APPLICABLE **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT APPLICABLE **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical:

Ingredient Name: ING 23:LAUNDER CONTAM CLOTHING BEFORE WEARING.
Ingredient CAS Number: Ingredient CAS Code: X
RTECS Number: 9999999ZZ **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Enviromental Weight:
Other REC Limits: N/K
OSHA PEL: NOT APPLICABLE **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT APPLICABLE **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical:

Ingredient Name: ING 3:OR SKIN MAY CAUSE IRRIT/BURNING @ HIGH CONC. INHAL MAY RSLT IN NAUS, VOMIT, SEDATION & GEN ATHESIA (CNS & (ING 5)
Ingredient CAS Number: Ingredient CAS Code: X
RTECS Number: 9999999ZZ **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:

>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Enviromental Weight:
Other REC Limits: N/K
OSHA PEL: NOT APPLICABLE **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT APPLICABLE **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical:

Ingredient Name: ING 4:RESP DEPRESS). INGEST OF MTBE MAY RSLT IN ASPIR PNEUM. CHRONIC:CHRONIC INHAL CAUSES NASAL & TRACHEAL INFLAMM.
Ingredient CAS Number: Ingredient CAS Code: X
RTECS Number: 9999999ZZ **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Enviromental Weight:
Other REC Limits: N/K
OSHA PEL: NOT APPLICABLE **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT APPLICABLE **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical:

Ingredient Name: ING 6:PERS IS COUGH/CHOCKING, ASPIR MAY HAVE ALREADY OCCURRED; TRANSPORT TO EMER MED FACILITY. AFTER FIRST AID, (ING 8)
Ingredient CAS Number: Ingredient CAS Code: X
RTECS Number: 9999999ZZ **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:

>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Enviromental Weight:
Other REC Limits: N/K
OSHA PEL: NOT APPLICABLE **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT APPLICABLE **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical:

Ingredient Name: ING 7:INGEST BECAUSE OF IT'S POOR ABSORBING QUALITIES. CAREFULLY OBSERVE FOR ANY DEVELOPMENT OF SYSTEMIC SIGNS. (ING 9)
Ingredient CAS Number: Ingredient CAS Code: X
RTECS Number: 9999999ZZ **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Enviromental Weight:
Other REC Limits: N/K
OSHA PEL: NOT APPLICABLE **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT APPLICABLE **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical:

Ingredient Name: ING 8:IF LG QTYS OF MTBE INGESTED, SYRUP OF IPECAC IS PREF TO LAVAGE IN ALERT PATIENT REQ EMESIS. IF ASPIR HAS (ING 10)
Ingredient CAS Number: Ingredient CAS Code: X
RTECS Number: 9999999ZZ **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:

<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Enviromental Weight:
Other REC Limits: N/K
OSHA PEL: NOT APPLICABLE **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT APPLICABLE **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical:

Ingredient Name: ING 9:OCCURRED, OBTAIN BASELINE CHEST X-RAY & VITAL SIGNS. LIVER FUNC STUDIES MAY BE INDICATED FOLLOWING (ING 11)
Ingredient CAS Number: Ingredient CAS Code: X
RTECS Number: 9999999ZZ **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Enviromental Weight:
Other REC Limits: N/K
OSHA PEL: NOT APPLICABLE **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT APPLICABLE **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical:

Ingredient Name: OTHER PREC:PROT PROGRAM THAT INCL REGULAR TRAINING, MAINTENANCE, INSPECTION, & EVAL. AVOID HEAT & IGNIT SOURCES.(ING 19)
Ingredient CAS Number: Ingredient CAS Code: X
RTECS Number: 9999999ZZ **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:

<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Enviromental Weight:
Other REC Limits: N/K
OSHA PEL: NOT APPLICABLE **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT APPLICABLE **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical:

Ingredient Name: RESP PROT:SCBA. WARNING! NIOSH/MSHA APPRVD AIR-PURIFYING RESPS DO NOT PROTECT WORKERS IN OXYG-DEFICIENT ATM.
Ingredient CAS Number: Ingredient CAS Code: X
RTECS Number: 9999999ZZ **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Enviromental Weight:
Other REC Limits: N/K
OSHA PEL: NOT APPLICABLE **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT APPLICABLE **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical:

Ingredient Name: SPILL PROC:FOR DISP. FOR LG SPILLS, DIKE FAR AHEAD OF SPILL TO CNTN. DO NOT ALLOW MTBE TO ENTER ENCLOSED AREAS(ING 13)
Ingredient CAS Number: Ingredient CAS Code: X
RTECS Number: 9999999ZZ **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:

% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Enviromental Weight:
Other REC Limits: N/K
OSHA PEL: NOT APPLICABLE **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT APPLICABLE **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical:

Ingredient Name: SUPDAT:RADICALS. IF PRESENT IS SUFFICIENT CONC, THESE PROD OF PARTIAL OXIDATION CAN POSE SERIOUS HLTH HAZARD.
Ingredient CAS Number: Ingredient CAS Code: X
RTECS Number: 9999999ZZ **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:
% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Enviromental Weight:
Other REC Limits: N/K
OSHA PEL: NOT APPLICABLE **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT APPLICABLE **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical:

Ingredient Name: VENT:PRODUCTIVITY LOC EXHST VENT IS PREF SINCE IT PVNT CONTAM DISPERSION INTO WORK AREA BY CONTROLLING IT @ ITS SOURCE.
Ingredient CAS Number: Ingredient CAS Code: X
RTECS Number: 9999999ZZ **RTECS Code:** M
=WT: =WT Code:
=Volume: =Volume Code:
>WT: >WT Code:
>Volume: >Volume Code:
<WT: <WT Code:
<Volume: <Volume Code:
% Low WT: % Low WT Code:

% High WT: % High WT Code:
% Low Volume: % Low Volume Code:
% High Volume: % High Volume Code:
% Text: N/K
% Enviromental Weight:
Other REC Limits: N/K
OSHA PEL: NOT APPLICABLE **OSHA PEL Code:** M
OSHA STEL: OSHA STEL Code:
ACGIH TLV: NOT APPLICABLE **ACGIH TLV Code:** M
ACGIH STEL: N/P **ACGIH STEL Code:**
EPA Reporting Quantity:
DOT Reporting Quantity:
Ozone Depleting Chemical:

Section 3 - Hazards Identification, Including Emergency Overview
METHYL TERTIARY BUTYL ETHER

Health Hazards Acute & Chronic: TARGET ORGANS:UPPER RESP TRACT, CNS. MTBE INGEST & INHAL TOX ARE BASED ON ANIMAL STUDIES. HUMAN EXPOS ARE REPORTED PRIMARILY W/EXPOS TO GASOLINE-MTBE MIX & W/USE OF MTBE IN DISSOLVING GALL BLADDER STO NES BY DIRECT INFUSION. RPTS REVEAL MTBE'S PRIMARY ANESTH EFT ON CNS. PROGRESSION OF NAUS, VOMIT & (EFTS OF OVEREXP)

Signs & Symptoms of Overexposure:
HLTH HAZ:SEDATION FOLLOWED BY GEN ANESTH IS NOTED W/INCRG EXPOS. WARM/BURNING SENSATION IS REPORTED W/GALL BLADDER INSTILLATION. ELEVATED LIVER FUNC STUDIES, DUODENAL INFLAMM, KIDNEY FAILURE, BLOOD CE LL HEMOLYSIS, & FOUL BREATH ODOR ARE ALSO NOTED W/THIS PROC. ANIMAL STUDIES NOTE PRIMARY IRRIT TO MUC MEMB (ING 3)

Medical Conditions Aggravated by Exposure:
NONE REPORTED.

LD50 LC50 Mixture: LD50:(ORAL,RAT) 4 G/KG

Route of Entry Indicators:
- **Inhalation:** YES
- **Skin:** YES
- **Ingestion:** YES

Carcenogenicity Indicators
- **NTP:** NO
- **IARC:** NO
- **OSHA:** NO

Carcinogenicity Explanation: NOT RELEVANT.

Section 4 - First Aid Measures
METHYL TERTIARY BUTYL ETHER

First Aid:
EYES:GENTLY LIFT LIDS & FLUSH IMMED & CONTINUOUSLY W/FLOODING AMTS OF WATER FOR @ LEAST 15 MIN UNTIL TRANSPORTED TO EMER MED FACILITY. CONSULT MD IMMED. SKIN:QUICKLY REMOVE CONTAMD CLTHG. RINSE W/FLOO DING AMTS OF WATER FOR @ LEAST 15 MIN. FOR RED/BLISTERED SKIN, CONSULT MD. WASH AFFECTED AREA W/SOAP & WATER. INHAL:REMOVE TO FRESH AIR & SUPPORT BRTHG AS NEEDED. INGEST:NEVER GIVE ANYTHING BY (ING 6)

Section 5 - Fire Fighting Measures
METHYL TERTIARY BUTYL ETHER

Fire Fighting Procedures:
NIOSH/MSHA APPRVD SCBA & FULL PROT EQUIP(FP N) (INCLG GOGG, RUB OVER-CLTHG, GLOVES & BOOTS). IF FEASIBLE, REMOVE CNTNRS FROM FIRE-RISK AREA. OTHERWISE (SUPDAT)
Unusual Fire or Explosion Hazard:
MTBE IS EXTREMELY FLAM. VAP MAY EXPLODE IF IGNIT IN ENCLSD AREA/TRAVEL TO SOURCE OF IGNIT & FLASH BACK. @ TEMP AT/ABOVE FL PT, MTBE CAN RELS VAPS THAT (SUPDAT)
Extinguishing Media:
USE DRY CHEMICAL, CARBON DIOXIDE, HALON, WATER SPRAY, OR ALCOHOL FOAM AS EXTINGUISHING MEDIA.
Flash Point: Flash Point Text: <18F,<-8C

Autoignition Temperature:
Autoignition Temperature Text: N/A
Lower Limit(s): 1.6%
Upper Limit(s): 8.4%

Section 6 - Accidental Release Measures
METHYL TERTIARY BUTYL ETHER

Spill Release Procedures:
NOTIFY SFTY PERS, EVAC ALL UNNEC PERS, REMOVE ALL HEAT & IGNIT SOURCES, & PROVIDE MAX EXPLO-PROOF VENT. CLEANUP PERS SHOULD PROTECT AGAINST VAP INHAL & SKIN/EYE CONT. TAKE UP SPILLED MATL W/NONCOMBUST ABSORB MATL & PLACE IN APPROP CNTNRS (ING 12)

Section 7 - Handling and Storage
METHYL TERTIARY BUTYL ETHER

Handling and Storage Precautions:

Other Precautions:

Section 8 - Exposure Controls & Personal Protection
METHYL TERTIARY BUTYL ETHER

Repiratory Protection:
SEEK PROFESSIONAL ADVICE PRIOR TO RESP SELECTION & USE. FOLLOW OSHA RESP

REGS (29 CFR 1910.134) &, IF NEC, WEAR NIOSH/MSHA APPRVD RESP. FOR EMER/NONROUTINE OPERATIONS (CLEANING SPILLS, REACTOR VESSELS /STOR TANKS), WEAR NIOSH/MSHA (ING 20)
Ventilation:
PROVIDE GEN & LOC EXPLO-PROOF VENT SYS TO MAINTAIN AIRBORNE CONC @ LEV THAT PROMOTE WORKER SFTY & (ING 21)
Protective Gloves:
IMPERVIOUS GLOVES.
Eye Protection: ANSI APPRVD CHEM WORKERS GOGG & FSHLD.
Other Protective Equipment: IMPERVIOUS BOOTS, APRONS, & GAUNTLETS. ANSI APPRVD EMER EYE WASH & DELUGE SHOWER (FP N).
Work Hygenic Practices: NEVER EAT, DRINK/SMOKE IN WORK AREAS. PRACTICE GOOD PERSONAL HYGIENE AFTER USING MATL, EXPECIALLY BEFORE EATING,(ING 22)
Supplemental Health & Safety Information: APPEAR/ODOR:MINT OR TERPENE-LIKE ODOR. FIRE FIGHT PROC:USE WATER SPRAY TO COOL FIRE-EXPOS CNTNRS. BE AWARE OF RUNOFF FROM FIRE CTL METH. DO NOT RELS TO ENCLSD AREAS, SEWERS/WATERWAYS DUE TO POTNTL EXP LO & HLTH HAZ MTBE PRESENT. EXPLO HAZ: FORM FLAM MIXS. CNDTNS TO AVOID: IN ACID SOLNS. HAZ DECOMP:& METHYL (ING 2)

Section 9 - Physical & Chemical Properties
METHYL TERTIARY BUTYL ETHER

HCC:
NRC/State License Number:
Net Property Weight for Ammo:
Boiling Point: Boiling Point Text: 131F,55C
Melting/Freezing Point: Melting/Freezing Text: <166F,<74C
Decomposition Point: Decomposition Text: N/K
Vapor Pressure: 245 @ 77F **Vapor Density:** N/K
Percent Volatile Organic Content:
Specific Gravity: 0.7405(20C/4C)
Volatile Organic Content Pounds per Gallon:
pH: N/K
Volatile Organic Content Grams per Liter:
Viscosity: N/P
Evaporation Weight and Reference: NOT KNOWN
Solubility in Water: 4.8G/100G
Appearance and Odor: A CLEAR, COLORLESS LIQUID WITH A SLIGHT HYDROCARBON ODOR WITH A MILD (SUPDAT)
Percent Volatiles by Volume: N/K
Corrosion Rate: N/K

Section 10 - Stability & Reactivity Data
METHYL TERTIARY BUTYL ETHER

Stability Indicator: YES
Materials to Avoid:
INCOMPAT & UNSTABLE W/STRONG OXIDIZING AGENTS, STRONG ACIDS, CAUSTICS, AMINES, ALDEHYDES, AMMONIA, & CHLORINATED CMPDS.
Stability Condition to Avoid:

HEAT & IGNIT SOURCES. MTBE IS STABLE @ ROOM TEMP IN CLSD CNTNRS UNDER NORM STOR & HNDLG CNDTNS. MTBE IS UNSTABLE(SUPDAT)
Hazardous Decomposition Products:
THERM OXIDATIVE DECOMP CAN PRDCE: CO*2 & H*2O VAP; INCOMPLETE COMBUST:CO, T-BUTYL FORMATE, ACETONE, FORMIC ACID (SUPDAT)
Hazardous Polymerization Indicator: NO
Conditions to Avoid Polymerization:
NOT RELEVANT.

Section 11 - Toxicological Information
METHYL TERTIARY BUTYL ETHER

Toxicological Information:
N/P

Section 12 - Ecological Information
METHYL TERTIARY BUTYL ETHER

Ecological Information:
N/P

Section 13 - Disposal Considerations
METHYL TERTIARY BUTYL ETHER

Waste Disposal Methods:
CONTACT YOUR SUPPLIER/LICENSED CONTRACTOR FOR DETAILED RECOMMENDATIONS. FOLLOW APPLIC FEDERAL, STATE, AND LOCAL REGS.

Section 14 - MSDS Transport Information
METHYL TERTIARY BUTYL ETHER

Transport Information:
N/P

Section 15 - Regulatory Information
METHYL TERTIARY BUTYL ETHER

SARA Title III Information:
N/P
Federal Regulatory Information:
N/P
State Regulatory Information:
N/P

Section 16 - Other Information
METHYL TERTIARY BUTYL ETHER

Other Information:
N/P

HAZCOM Label Information

Product Identification: METHYL TERTIARY BUTYL ETHER
CAGE: 5Z768

Assigned Individual: N
Company Name: GENIUM PUBLISHING CORPORATION
Company PO Box:
Company Street Address1: 1145 CATALYN ST
Company Street Address2: SCHENECTADY, NY 12303-1836 US
Health Emergency Telephone: 518-377-8854
Label Required Indicator: Y
Date Label Reviewed: 12/21/1995
Status Code: C
Manufacturer's Label Number:
Date of Label: 12/21/1995
Year Procured: N/K
Organization Code: G
Chronic Hazard Indicator: Y
Eye Protection Indicator: YES
Skin Protection Indicator: YES
Respiratory Protection Indicator: YES
Signal Word: DANGER
Health Hazard: Severe
Contact Hazard: Severe
Fire Hazard: Severe
Reactivity Hazard: Slight

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SAFETY DATA SHEET

Version 5.5
Revision Date 06/02/2016
Print Date 06/21/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : *m*-Xylene

Product Number : 95670
Brand : Sigma-Aldrich
Index-No. : 601-022-00-9

CAS-No. : 108-38-3

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 3), H226
Acute toxicity, Dermal (Category 4), H312
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Aspiration hazard (Category 1), H304
Acute aquatic toxicity (Category 3), H402
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H226 Flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.
H312 Harmful in contact with skin.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

H412	Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ eye protection/ face protection.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER/doctor.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P312	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P331	Do NOT induce vomiting.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	:	1,3-Dimethylbenzene
Formula	:	C_8H_{10}
Molecular weight	:	106.17 g/mol
CAS-No.	:	108-38-3
EC-No.	:	203-576-3
Index-No.	:	601-022-00-9

Hazardous components

Component	Classification	Concentration
m-Xylene		
	Flam. Liq. 3; Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3; Asp. Tox. 1; Aquatic Acute 3; Aquatic Chronic 3; H226, H304, H312, H315, H319, H335, H412	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

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

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
m-Xylene	108-38-3	TWA	100.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Eye & Upper Respiratory Tract irritation Central Nervous System impairment Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		STEL	150.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Eye & Upper Respiratory Tract irritation Central Nervous System impairment Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		TWA	100.000000 ppm 435.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	150.000000 ppm 655.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	100.000000 ppm 435.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		
		TWA	100.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation Eye irritation Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		STEL	150.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation Eye irritation Substances for which there is a Biological Exposure Index or Indices (see BEI® section)		

		Not classifiable as a human carcinogen		
		TWA	100 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation Eye irritation Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		STEL	150 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation Eye irritation Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		TWA	100 ppm 435 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
m-Xylene	108-38-3	Methylhippuric acids	1.5g/g creatinine	Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			
		Methylhippuric acids	1,500.0000 mg/g	Urine	ACGIH - Biological Exposure Indices (BEI)
		End of shift (As soon as possible after exposure ceases)			

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 30 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid Colour: colourless
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -48 °C (-54 °F) - lit.
f)	Initial boiling point and boiling range	138 - 139 °C (280 - 282 °F) - lit.
g)	Flash point	25.0 °C (77.0 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 7 %(V) Lower explosion limit: 1.1 %(V)
k)	Vapour pressure	8.0 hPa (6.0 mmHg) at 20.0 °C (68.0 °F) 21.3 hPa (16.0 mmHg) at 37.7 °C (99.9 °F)
l)	Vapour density	No data available
m)	Relative density	0.868 g/mL at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	log Pow: 3.2 at 20 °C (68 °F)
p)	Auto-ignition temperature	465.0 °C (869.0 °F) 528.0 °C (982.4 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available

t) Oxidizing properties No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Vapours may form explosive mixture with air.

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - male - 6,602 mg/kg
(OECD Test Guideline 401)

LC50 Inhalation - Rat - male - 4 h - 6700 ppm
(Directive 67/548/EEC, Annex V, B.2.)

LD50 Dermal - Rabbit - male - 12,126 mg/kg

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Skin irritation - 24 h

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Severe eye irritation - 24 h

Respiratory or skin sensitisation
- Mouse
Result: Does not cause skin sensitisation.
(OECD Test Guideline 429)

Germ cell mutagenicity
No data available

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (m-Xylene)

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

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
May be fatal if swallowed and enters airways.

Additional Information
RTECS: ZE2275000

Liver injury may occur., Kidney injury may occur., Blood disorders, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, narcosis, Lung irritation, chest pain, pulmonary edema, Central nervous system depression, Dermatitis, Gastrointestinal disturbance

Kidney -

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	mortality LC50 - Fish - 11.23 mg/l - 96 h (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates	Remarks: No data available
Toxicity to algae	Remarks: No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life with long lasting effects.

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1307 Class: 3 Packing group: III
Proper shipping name: Xylenes
Reportable Quantity (RQ): 1000 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1307 Class: 3 Packing group: III EMS-No: F-E, S-D
Proper shipping name: XYLENES

IATA
UN number: 1307 Class: 3 Packing group: III
Proper shipping name: Xylenes

15. REGULATORY INFORMATION

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

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
m-Xylene	108-38-3	2007-07-01

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
m-Xylene	108-38-3	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
m-Xylene	108-38-3	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
m-Xylene	108-38-3	2007-07-01

California Prop. 65 Components

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

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Asp. Tox.	Aspiration hazard
Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquids
H226	Flammable liquid and vapour.

H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	0

Further information

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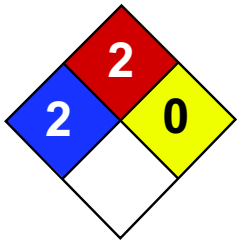
Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.5 Revision Date: 06/02/2016 Print Date: 06/21/2016



Material Safety Data Sheet
Naphthalene MSDS

Section 1: Chemical Product and Company Identification

Product Name: Naphthalene

Catalog Codes: SLN1789, SLN2401

CAS#: 91-20-3

RTECS: QJ0525000

TSCA: TSCA 8(b) inventory: Naphthalene

CI#: Not available.

Synonym:

Chemical Name: Not available.

Chemical Formula: C10H8

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call:
1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Naphthalene	91-20-3	100

Toxicological Data on Ingredients: Naphthalene: ORAL (LD50): Acute: 490 mg/kg [Rat]. 533 mg/kg [Mouse]. 1200 mg/kg [Guinea pig]. DERMAL (LD50): Acute: 20001 mg/kg [Rabbit]. VAPOR (LC50): Acute: 170 ppm 4 hour(s) [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of ingestion. Hazardous in case of eye contact (irritant), of inhalation. Slightly hazardous in case of skin contact (irritant, permeator). Severe over-exposure can result in death.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Classified Development toxin [POSSIBLE]. The substance is toxic to blood, kidneys, the nervous system, the reproductive system, liver, mucous membranes, gastrointestinal tract, upper respiratory tract, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage. Repeated exposure to an highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Cold water may be used. Do not use an eye ointment. Seek medical attention.

Skin Contact:
After contact with skin, wash immediately with plenty of water. Gently and thoroughly wash the contaminated skin with running water and non-abrasive soap. Be particularly careful to clean folds, crevices, creases and groin. Cover the irritated skin with an emollient. If irritation persists, seek medical attention. Wash contaminated clothing before reusing.

Serious Skin Contact: Not available.

Inhalation: Allow the victim to rest in a well ventilated area. Seek immediate medical attention.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:
Do not induce vomiting. Examine the lips and mouth to ascertain whether the tissues are damaged, a possible indication that the toxic material was ingested; the absence of such signs, however, is not conclusive. Loosen tight clothing such as a collar, tie, belt or waistband. If the victim is not breathing, perform mouth-to-mouth resuscitation. Seek immediate medical attention.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: 567°C (1052.6°F)

Flash Points: CLOSED CUP: 88°C (190.4°F). OPEN CUP: 79°C (174.2°F).

Flammable Limits: LOWER: 0.9% UPPER: 5.9%

Products of Combustion: These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances: Not available.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
Flammable solid. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

Special Remarks on Fire Hazards: Not available.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill:
Flammable solid. Stop leak if without risk. Do not touch spilled material. Use water spray curtain to divert vapor drift. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not ingest. Do not breathe dust. Avoid contact with eyes Wear suitable protective clothing In case of insufficient ventilation, wear suitable respiratory equipment If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents.

Storage:
Flammable materials should be stored in a separate safety storage cabinet or room. Keep away from heat. Keep away from sources of ignition. Keep container tightly closed. Keep in a cool, well-ventilated place. Ground all equipment containing material. Keep container dry. Keep in a cool place.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:
Splash goggles. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
Israel: TWA: 10 (ppm) TWA: 10 STEL: 15 (ppm) from ACGIH (TLV) [1995] TWA: 52 STEL: 79 (mg/m3) from ACGIH [1995] Australia: STEL: 15 (ppm) Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Crystalline solid.)

Odor: Aromatic.

Taste: Not available.

Molecular Weight: 128.19 g/mole

Color: White.

pH (1% soln/water): Not available.

Boiling Point: 218°C (424.4°F)

Melting Point: 80.2°C (176.4°F)

Critical Temperature: Not available.

Specific Gravity: 1.162 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: 4.4 (Air = 1)

Volatility: Not available.

Odor Threshold: 0.038 ppm

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties:
Partially dispersed in hot water, methanol, n-octanol. Very slightly dispersed in cold water. See solubility in methanol, n-octanol.

Solubility:
Partially soluble in methanol, n-octanol. Very slightly soluble in cold water, hot water.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Not available.

Incompatibility with various substances: Highly reactive with oxidizing agents.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity: Not available.

Special Remarks on Corrosivity: May attack some forms of rubber and plastic

Polymerization: No.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

Toxicity to Animals:
WARNING: THE LC50 VALUES HEREUNDER ARE ESTIMATED ON THE BASIS OF A 4-HOUR EXPOSURE. Acute oral toxicity (LD50): 490 mg/kg [Rat]. Acute dermal toxicity (LD50): 20001 mg/kg [Rabbit]. Acute toxicity of the vapor (LC50): 170 ppm 4 hour(s) [Rat].

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH. DEVELOPMENTAL TOXICITY: Classified Development toxin [POSSIBLE]. The substance is toxic to blood, kidneys, the nervous system, the reproductive system, liver, mucous membranes, gastrointestinal tract, upper respiratory tract, central nervous system (CNS).

Other Toxic Effects on Humans:
Very hazardous in case of ingestion. Hazardous in case of inhalation. Slightly hazardous in case of skin contact (irritant, permeator).

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans: Not available.

Section 12: Ecological Information

Ecotoxicity: Ecotoxicity in water (LC50): 305.2 ppm 96 hour(s) [Trout].

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are more toxic.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:

Section 14: Transport Information

DOT Classification: CLASS 4.1: Flammable solid.

Identification: : Naphthalene, refined : UN1334 PG: III

Special Provisions for Transport: Marine Pollutant

Section 15: Other Regulatory Information

Federal and State Regulations:
Rhode Island RTK hazardous substances: Naphthalene Pennsylvania RTK: Naphthalene Florida: Naphthalene Minnesota: Naphthalene Massachusetts RTK: Naphthalene TSCA 8(b) inventory: Naphthalene TSCA 8(a) PAIR: Naphthalene TSCA 8(d) H and S data reporting: Naphthalene: 06/01/87 SARA 313 toxic chemical notification and release reporting: Naphthalene: 1% CERCLA: Hazardous substances.: Naphthalene: 100 lbs. (45.36 kg)

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):
CLASS B-4: Flammable solid. CLASS D-1B: Material causing immediate and serious toxic effects (TOXIC). CLASS D-2B: Material causing other toxic effects (TOXIC).

DSCL (EEC):
R36- Irritating to eyes. R40- Possible risks of irreversible effects. R48/22- Harmful: danger of serious damage to health by prolonged exposure if swallowed. R48/23- Toxic: danger of serious damage to health by prolonged exposure through inhalation. R63- Possible risk of harm to the unborn child.

HMIS (U.S.A.):

Health Hazard: 2

Fire Hazard: 2

Reactivity: 0

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 2

Flammability: 2

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/11/2005 01:30 PM

Last Updated: 11/06/2008 12:00 PM

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SAFETY DATA SHEET

Version 4.4
Revision Date 11/04/2015
Print Date 12/17/2015

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Butylbenzene

Product Number : B90203
Brand : Aldrich

CAS-No. : 104-51-8

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 3), H226
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H226 Flammable liquid and vapour.
H410 Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face

	protection.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P391	Collect spillage.
P403 + P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms : 1-Phenylbutane

Formula : $C_{10}H_{14}$
Molecular weight : 134.22 g/mol
CAS-No. : 104-51-8
EC-No. : 203-209-7

Hazardous components

Component	Classification	Concentration
Butylbenzene		
	Flam. Liq. 3; Aquatic Acute 1; Aquatic Chronic 1; H226, H410	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

In case of eye contact
Flush eyes with water as a precaution.

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

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

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact

Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Impervious clothing, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid, clear Colour: colourless
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -88 °C (-126 °F) - lit.
f)	Initial boiling point and boiling range	183 °C (361 °F) - lit.
g)	Flash point	59.0 °C (138.2 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 5.8 %(V) Lower explosion limit: 0.8 %(V)
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	0.86 g/cm3 at 25 °C (77 °F)
n)	Water solubility	insoluble
o)	Partition coefficient: n-octanol/water	log Pow: 4.26
p)	Auto-ignition temperature	412.0 °C (773.6 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available

s) Explosive properties No data available

t) Oxidizing properties No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

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

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: CY9070000

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

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to daphnia and other aquatic invertebrates	Immobilization EC50 - Daphnia magna (Water flea) - 0.34 mg/l - 48 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Very toxic to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

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

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

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

15. REGULATORY INFORMATION

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

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

SARA 311/312 Hazards
Fire Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Butylbenzene	104-51-8	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Butylbenzene	104-51-8	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Butylbenzene	104-51-8	1993-04-24

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Flam. Liq.	Flammable liquids
H226	Flammable liquid and vapour.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

HMIS Rating

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

NFPA Rating

Health hazard:	0
Fire Hazard:	2
Reactivity Hazard:	0

Further information
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Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.4 Revision Date: 11/04/2015 Print Date: 12/17/2015

SAFETY DATA SHEET

Creation Date 26-Oct-2009 **Revision Date** 02-Apr-2014 **Revision Number** 1

1. Identification

Product Name **n-Hexane**

Cat No. : **AC326920000; AC326920010; AC326920025; AC326921000; AC326922500**

Synonyms Hex

Recommended Use Laboratory chemicals

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Entity / Business Name
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-ACROS-01 /
Europe call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 /
Europe: +32 14 57 52 99
CHEMTREC Tel. No.**US:**001-800-424-9300 /
Europe:001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	Category 2
Skin Corrosion/irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 2
Reproductive Toxicity	Category 2
Specific target organ toxicity (single exposure)	Category 3
Target Organs - Respiratory system, Central nervous system (CNS).	
Specific target organ toxicity - (repeated exposure)	Category 1
Target Organs - Liver, Heart, Blood.	
Aspiration Toxicity	Category 1

Label Elements

Signal Word
Danger

Hazard Statements
Highly flammable liquid and vapor

May be fatal if swallowed and enters airways
Causes skin irritation
Causes serious eye irritation
May cause respiratory irritation
May cause drowsiness or dizziness
Suspected of damaging fertility
Causes damage to organs through prolonged or repeated exposure

Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Wear eye/face protection
Do not breathe dust/fume/gas/mist/vapors/spray
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Keep cool
Response
IF exposed or concerned: Get medical attention/advice
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Skin
If skin irritation occurs: Get medical advice/attention
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Wash contaminated clothing before reuse
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention.
Ingestion
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Do NOT induce vomiting
Fire
In case of fire: Use CO2, dry chemical, or foam for extinction
Storage
Store locked up
Store in a well-ventilated place. Keep container tightly closed
Disposal
Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)
Toxic to aquatic life with long lasting effects

3. Composition / information on ingredients

Haz/Non-haz

Component	CAS-No	Weight %
Hexane	110-54-3	>95

4. First-aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Obtain medical attention.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Obtain medical attention. Aspiration into lungs can produce severe lung damage.

Ingestion Do not induce vomiting. Call a physician or Poison Control Center immediately. If vomiting occurs, lean victim forward to reduce the risk of aspiration.

Most important symptoms/effects Breathing difficulties. . Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Notes to Physician Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media CO_2, dry chemical, dry sand, alcohol-resistant foam. Cool closed containers exposed to fire with water spray.

Unsuitable Extinguishing Media Water may be ineffective, This material is lighter than water and insoluble in water. The fire could easily be spread by the use of water in an area where the water cannot be contained.

Flash Point -22°C / -7.6°F

Method - No information available

Autoignition Temperature 223°C / 433.4°F

Explosion Limits

Upper 7.5 vol %

Lower 1.1 vol %

Sensitivity to Mechanical Impact No information available

Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical

Flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated.

Hazardous Combustion Products Carbon monoxide (CO), Carbon dioxide (CO_2).

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health	Flammability	Instability	Physical hazards
2	3	0	N/A

6. Accidental release measures

Personal Precautions Use personal protective equipment. Ensure adequate ventilation. Evacuate personnel to safe areas. Remove all sources of ignition. Take precautionary measures against static discharges.

Environmental Precautions Do not flush into surface water or sanitary sewer system. Avoid release to the environment. Collect spillage.

Methods for Containment and Clean Up Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Take precautionary measures against static discharges.

7. Handling and storage

Handling Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Do not breathe vapors or spray mist. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Use explosion-proof equipment. Take precautionary measures against static discharges. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. Flammables area.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Hexane	TWA: 50 ppm Skin	(Vacated) TWA: 50 ppm (Vacated) TWA: 180 mg/m^3 TWA: 500 ppm TWA: 1800 mg/m^3	IDLH: 1100 ppm TWA: 50 ppm TWA: 180 mg/m^3

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Hexane	TWA: 50 ppm TWA: 176 mg/m^3 Skin	TWA: 50 ppm TWA: 176 mg/m^3	TWA: 50 ppm Skin

Legend
ACGIH *- American Conference of Governmental Hygienists*
OSHA *- Occupational Safety and Health Administration*
NIOSH IDLH: *The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health*

Engineering Measures Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location. Use explosion-proof electrical/ventilating/lighting/equipment.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice

9. Physical and chemical properties

Physical State	Liquid
Appearance	Colorless
Odor	Petroleum distillates
Odor Threshold	No information available.
pH	No information available.
Melting Point/Range	-95°C / -139°F
Boiling Point/Range	69°C / 156.2°F@ 760 mmHg
Flash Point	-22°C / -7.6°F
Evaporation Rate	No information available.
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	
Upper	7.5 vol %
Lower	1.1 vol %
Vapor Pressure	160 mbar @ 20 °C
Vapor Density	2.97
Relative Density	0.659
Solubility	Insoluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	223°C / 433.4°F
Decomposition temperature	No information available.
Viscosity	0.31 mPa s at 20 °C
Molecular Formula	C6 H14
Molecular Weight	86.18

10. Stability and reactivity

Reactive Hazard None known, based on information available.

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products. Heat, flames and sparks. Exposure to light. Keep away from open flames, hot surfaces and sources of ignition.

Incompatible Materials Strong oxidizing agents, Halogens

Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO_2)

Hazardous Polymerization Hazardous polymerization does not occur

Hazardous Reactions None under normal processing

11. Toxicological information

Acute Toxicity

Product Information

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Hexane	25 g/kg (Rat)	3000 mg/kg (Rabbit)	48000 ppm (Rat) 4 h

Toxicologically Synergistic Products No information available.

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation Irritating to eyes and skin

Sensitization No information available.

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Hexane	110-54-3	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects Mutagenic effects have occurred in experimental animals.

Reproductive Effects Experiments have shown reproductive toxicity effects on laboratory animals.

Developmental Effects Developmental effects have occurred in experimental animals.

Teratogenicity Teratogenic effects have occurred in experimental animals..

STOT - single exposure Respiratory system, Central nervous system (CNS).

STOT - repeated exposure Liver, Heart, Blood.

Aspiration hazard No information available.

Symptoms / effects, both acute and delayed Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting. Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting.

Endocrine Disruptor Information No information available

Other Adverse Effects Tumorigenic effects have been reported in experimental animals.. See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Hexane	Not listed	2.1 - 2.98 mg/L LC50 96 h	Not listed	EC50: 3.87 mg/L/48h

Persistence and Degradability Persistence is unlikely, based on information available.

Bioaccumulation/ Accumulation No information available

Mobility Will likely be mobile in the environment due to its volatility.

Component	log Pow
Hexane	4.11

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No	UN1208
Proper Shipping Name	Hexanes
Hazard Class	3
Packing Group	II

TDG

UN-No	UN1208
Proper Shipping Name	HEXANES
Hazard Class	3
Packing Group	II

IATA

UN-No	UN1208
Proper Shipping Name	Hexanes
Hazard Class	3
Packing Group	II

IMDG/IMO

UN-No	UN1208
Proper Shipping Name	Hexanes
Hazard Class	3
Packing Group	II

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Hexane	X	X	-	203-777-6	-		X	X	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Hexane	110-54-3	>95	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act Not applicable

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Hexane	X		-

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Hexane	5000 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals.

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Hexane	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ):	Y
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

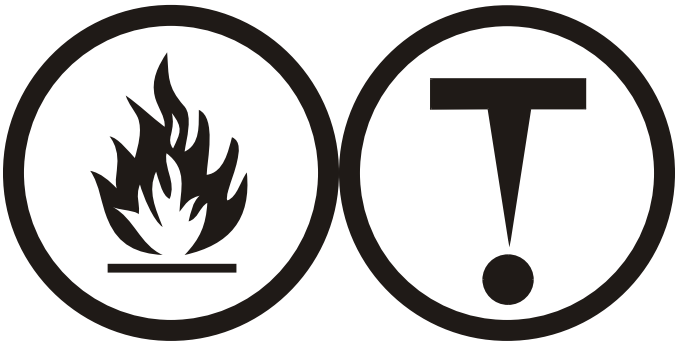
U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade Serious risk, Grade 3

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class B2 Flammable liquid
D2A Very toxic materials



16. Other information

Prepared By	Regulatory Affairs Thermo Fisher Scientific Email: EMSDS.RA@thermofisher.com
Creation Date	26-Oct-2009
Revision Date	02-Apr-2014
Print Date	02-Apr-2014
Revision Summary	This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS

SAFETY DATA SHEET

Creation Date 04-Oct-2010 **Revision Date** 10-Feb-2015 **Revision Number** 1

1. Identification

Product Name **Nickel, powder**

Cat No. : **AC193610000; AC193610250; AC193611000; AC193615000**

Synonyms Raney alloy

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Entity / Business Name
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Skin Sensitization	Category 1
Carcinogenicity	Category 2
Specific target organ toxicity - (repeated exposure)	Category 1
Target Organs - Kidney, Blood.	

Label Elements

Signal Word
Danger

Hazard Statements
May cause an allergic skin reaction
Causes damage to organs through prolonged or repeated exposure
Suspected of causing cancer

Precautionary Statements

Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Wear protective gloves/protective clothing/eye protection/face protection
Do not breathe dust/fume/gas/mist/vapors/spray
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Contaminated work clothing should not be allowed out of the workplace
Response
IF exposed or concerned: Get medical attention/advice
Skin
IF ON SKIN: Wash with plenty of soap and water
If skin irritation or rash occurs: Get medical advice/attention
Wash contaminated clothing before reuse
Storage
Store locked up
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Harmful to aquatic life with long lasting effects

3. Composition / information on ingredients

Component	CAS-No	Weight %
Nickel powder	7440-02-0	>95

4. First-aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Immediate medical attention is required.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Immediate medical attention is required.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Do not use mouth-to-mouth resuscitation if victim ingested or inhaled the substance; induce artificial respiration with a respiratory medical device. Immediate medical attention is required.

Ingestion Do not induce vomiting. Call a physician or Poison Control Center immediately.

Most important symptoms/effects May cause allergic skin reaction. Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable Extinguishing Media No information available

Flash Point No information available
Method - No information available

Autoignition Temperature 400 °C / 752 °F
Explosion Limits
Upper No data available
Lower No data available

Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Combustible material.

Hazardous Combustion Products
Nickel oxides.
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health	Flammability	Instability	Physical hazards
3	1	0	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment. Keep people away from and upwind of spill/leak. Evacuate personnel to safe areas. Avoid dust formation.

Environmental Precautions Should not be released into the environment. See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage.

Methods for Containment and Clean Up Sweep up or vacuum up spillage and collect in suitable container for disposal. Avoid dust formation.

7. Handling and storage

Handling Use only under a chemical fume hood. Wear personal protective equipment. Do not get in eyes, on skin, or on clothing. Avoid dust formation. Do not breathe vapors/dust. Do not ingest.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Nickel powder	TWA: 1.5 mg/m³	(Vacated) TWA: 1 mg/m³ TWA: 1 mg/m³	IDLH: 10 mg/m³ TWA: 0.015 mg/m³

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Nickel powder	TWA: 1 mg/m³	TWA: 1 mg/m³	TWA: 1 mg/m³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures Use only under a chemical fume hood. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Solid
Appearance	Brown
Odor	Odorless
Odor Threshold	No information available
pH	No information available
Melting Point/Range	1455 °C / 2651 °F
Boiling Point/Range	2730 °C / 4946 °F
Flash Point	No information available
Evaporation Rate	No information available
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	1 mmHg @ 1810 °C
Vapor Density	No information available
Relative Density	No information available
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	400 °C / 752 °F
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	Ni
Molecular Weight	58.7

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products. Excess heat. Avoid dust formation.

Incompatible Materials Strong oxidizing agents

Hazardous Decomposition Products Nickel oxides

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Nickel powder	9000 mg/kg (Rat)	Not listed	Not listed

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization May cause sensitization by skin contact Nickel and nickel compounds may cause a form of dermatitis known as nickel itch. May cause an allergic skin reaction

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Nickel powder	7440-02-0	Group 2B	Reasonably Anticipated	Not listed	X	Not listed

IARC: (International Agency for Research on Cancer) *Group 2B - Possibly Carcinogenic to Humans*

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known
STOT - repeated exposure Kidney Blood

Aspiration hazard No information available

Symptoms / effects,both acute and delayed Symptoms of allergic reaction may include rash, itching, swelling, trouble breathing, tingling of the hands and feet, dizziness, lightheadedness, chest pain, muscle pain or flushing
Endocrine Disruptor Information No information available

Other Adverse Effects See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity
Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Do not empty into drains. Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Nickel powder	0.18 mg/L EC50 = 72 h 0.174 - 0.311 mg/L EC50 96 h	10.4 mg/L LC50 96 h 1.3 mg/L LC50 96 h 100 mg/L LC50 96 h	Not listed	1 mg/L EC50 = 48 h 100 mg/L EC50 > 48 h

Persistence and Degradability No information available
Bioaccumulation/ Accumulation No information available.

Mobility No information available.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT
- **UN-No** UN3089
- **Proper Shipping Name** METAL POWDERS, FLAMMABLE, N.O.S.
- **Hazard Class** 4.1
- **Packing Group** II

TDG
- **UN-No** UN3089
- **Proper Shipping Name** METAL POWDERS, FLAMMABLE, N.O.S.
- **Hazard Class** 4.1
- **Packing Group** II

IATA

UN-No	3089
Proper Shipping Name	METAL POWDERS, FLAMMABLE, N.O.S.
Hazard Class	4.1
Packing Group	II

IMDG/IMO

UN-No	3089
Proper Shipping Name	METAL POWDERS, FLAMMABLE, N.O.S.
Hazard Class	4.1
Packing Group	II

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Nickel powder	X	X	-	231-111-4	-		X	-	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Nickel powder	7440-02-0	>95	0.1

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Nickel powder	-	-	X	X

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Nickel powder	X		-

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive

Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Nickel powder	100 lb	-

California Proposition 65 This product contains the following Proposition 65 chemicals:

Component	CAS-No	California Prop. 65	Prop 65 NSRL	Category
Nickel powder	7440-02-0	Carcinogen	-	Carcinogen

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Nickel powder	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class D2A Very toxic materials

16. Other information

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date 04-Oct-2010
Revision Date 10-Feb-2015
Print Date 10-Feb-2015
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS

Material Safety Data Sheet

Version 4.0
Revision Date 07/28/2010
Print Date 12/27/2011

1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Propylbenzene
Product Number	:	P52407
Brand	:	Aldrich
Company	:	Sigma-Aldrich 3050 Spruce Street SAINT LOUIS MO 63103 USA
Telephone	:	+1 800-325-5832
Fax	:	+1 800-325-5052
Emergency Phone #	:	(314) 776-6555

2. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Combustible Liquid

Target Organs

Lungs, Eyes, Kidney

GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.
H335	May cause respiratory irritation.
H401	Toxic to aquatic life.

Precautionary statement(s)

P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P331	Do NOT induce vomiting.

HMIS Classification

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

NFPA Rating

Health hazard:	1
Fire:	2
Reactivity Hazard:	0

Potential Health Effects

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

Ingestion Aspiration hazard if swallowed - can enter lungs and cause damage. May be harmful if swallowed.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : 1-Phenylpropane

Formula : C_9H_{12}

Molecular Weight : 120.19 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Propylbenzene			
103-65-1	203-132-9	601-024-00-X	-

4. FIRST AID MEASURES

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

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

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

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

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

5. FIRE-FIGHTING MEASURES

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

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

Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

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

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

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

7. HANDLING AND STORAGE

Precautions for safe handling
Avoid inhalation of vapour or mist.

Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

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

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

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

Hand protection
For prolonged or repeated contact use protective gloves.

Eye protection
Face shield and safety glasses

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid, clear
Colour	colourless

Safety data

pH	no data available
Melting point	-99 °C (-146 °F) - lit.
Boiling point	159 °C (318 °F) - lit.
Flash point	42.0 °C (107.6 °F) - closed cup
Ignition temperature	450 °C (842 °F)
Lower explosion limit	0.8 %(V)
Upper explosion limit	6 %(V)
Density	0.862 g/cm3 at 25 °C (77 °F)
Water solubility	slightly soluble

10. STABILITY AND REACTIVITY

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
Vapours may form explosive mixture with air.

Conditions to avoid
Heat, flames and sparks.

Materials to avoid
Strong oxidizing agents

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

11. TOXICOLOGICAL INFORMATION

Acute toxicity
LD50 Oral - rat - 6,040 mg/kg
Remarks: Behavioral:Somnolence (general depressed activity).

LC50 Inhalation - rat - 2 h - 65000 ppm

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitization
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

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

Reproductive toxicity
no data available

Specific target organ toxicity - single exposure (Globally Harmonized System)
May cause respiratory irritation.

Specific target organ toxicity - repeated exposure (Globally Harmonized System)
no data available

Aspiration hazard
May be fatal if swallowed and enters airways.

Potential health effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Ingestion	Aspiration hazard if swallowed - can enter lungs and cause damage. May be harmful if swallowed.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.

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

Additional Information
RTECS: DA8750000

12. ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 1.55 mg/l - 96.0 h

Toxicity to daphnia and other aquatic invertebrates.	Immobilization EC50 - Daphnia magna (Water flea) - 2 mg/l - 24 h

Persistence and degradability
no data available

Bioaccumulative potential
no data available

Mobility in soil
no data available

PBT and vPvB assessment
no data available

Other adverse effects

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

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

Avoid release to the environment.

13. DISPOSAL CONSIDERATIONS

Product
This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 2364 Class: 3 Packing group: III
Proper shipping name: n-Propyl benzene
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 2364 Class: 3 Packing group: III EMS-No: F-E, S-D
Proper shipping name: PROPYLBENZENE
Marine pollutant: No

IATA
UN-Number: 2364 Class: 3 Packing group: III
Proper shipping name: n-Propylbenzene

15. REGULATORY INFORMATION

OSHA Hazards
Combustible Liquid

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

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

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

SARA 311/312 Hazards
Fire Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Propylbenzene	103-65-1	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Propylbenzene	103-65-1	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Propylbenzene	103-65-1	2007-03-01

California Prop. 65 Components

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

16. OTHER INFORMATION

Further information

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

SAFETY DATA SHEET

Version 4.2
Revision Date 07/09/2014
Print Date 04/20/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : 1,4-Diethylbenzene

Product Number : D91004
Brand : Aldrich

CAS-No. : 105-05-5

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 3), H226
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H226 Flammable liquid and vapour.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.

P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P312	Call a POISON CENTER or doctor/ physician if you feel unwell.
P321	Specific treatment (see supplemental first aid instructions on this label).
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	$C_{10}H_{14}$
Molecular Weight	:	134.22 g/mol
CAS-No.	:	105-05-5
EC-No.	:	203-265-2

Hazardous components

Component	Classification	Concentration
1,4-Diethylbenzene		
	Flam. Liq. 3; Skin Irrit. 2; Eye Irrit. 2A; STOT SE 3; H226, H315, H319, H335	-

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

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

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
no data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

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

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 30 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
impervious clothing, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: clear, liquid Colour: colourless
b)	Odour	no data available
c)	Odour Threshold	no data available
d)	pH	no data available
e)	Melting point/freezing point	Melting point/range: -43 °C (-45 °F) - lit.
f)	Initial boiling point and boiling range	184 °C (363 °F) - lit.
g)	Flash point	55 °C (131 °F) - closed cup
h)	Evapouration rate	no data available
i)	Flammability (solid, gas)	no data available
j)	Upper/lower flammability or	no data available

	explosive limits	
k)	Vapour pressure	no data available
l)	Vapour density	4.63 - (Air = 1.0)
m)	Relative density	0.862 g/cm3 at 25 °C (77 °F)
n)	Water solubility	no data available
o)	Partition coefficient: n-octanol/water	no data available
p)	Auto-ignition temperature	no data available
q)	Decomposition temperature	no data available
r)	Viscosity	no data available
s)	Explosive properties	no data available
t)	Oxidizing properties	no data available

9.2 Other safety information

Relative vapour density 4.63 - (Air = 1.0)

10. STABILITY AND REACTIVITY

10.1 Reactivity
no data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
no data available

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - no data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
no data available

Dermal: no data available

no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitisation
no data available

Germ cell mutagenicity
no data available

Carcinogenicity

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

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

no data available

Specific target organ toxicity - single exposure
Inhalation - May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
no data available

Aspiration hazard
no data available

Additional Information
RTECS: Not available

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

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity
no data available

12.2 Persistence and degradability
no data available

12.3 Bioaccumulative potential
no data available

12.4 Mobility in soil
no data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 2049 Class: 3 Packing group: III
Proper shipping name: Diethylbenzene
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 2049 Class: 3 Packing group: III EMS-No: F-E, S-D
Proper shipping name: DIETHYLBENZENE
Marine pollutant: No

IATA
UN number: 2049 Class: 3 Packing group: III
Proper shipping name: Diethylbenzene

15. REGULATORY INFORMATION

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

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

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
1,4-Diethylbenzene	105-05-5	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
1,4-Diethylbenzene	105-05-5	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
1,4-Diethylbenzene	105-05-5	1993-04-24

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquids
H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
Skin Irrit.	Skin irritation
STOT SE	Specific target organ toxicity - single exposure

HMIS Rating

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

NFPA Rating

Health hazard:	2
Fire Hazard:	2

Reactivity Hazard: 0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.2 Revision Date: 07/09/2014 Print Date: 04/20/2016

SAFETY DATA SHEET

Version 4.5
Revision Date 07/08/2014
Print Date 06/22/2019

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : 4-Ethyltoluene

Product Number : E49800
Brand : Aldrich

CAS-No. : 622-96-8

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 3), H226
Aspiration hazard (Category 1), H304

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H226 Flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.

P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P331	Do NOT induce vomiting.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula : C_9H_{12}
Molecular Weight : 120.19 g/mol
CAS-No. : 622-96-8
EC-No. : 210-761-2

Hazardous components

Component	Classification	Concentration
4-Ethyltoluene		
	Flam. Liq. 3; Asp. Tox. 1; H226, H304	-

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

In case of eye contact
Flush eyes with water as a precaution.

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
no data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

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

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm

Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: clear, liquid Colour: light yellow
b)	Odour	no data available
c)	Odour Threshold	no data available
d)	pH	no data available
e)	Melting point/freezing point	no data available
f)	Initial boiling point and boiling range	162 °C (324 °F) - lit.
g)	Flash point	43 °C (109 °F) - closed cup
h)	Evapouration rate	no data available
i)	Flammability (solid, gas)	no data available
j)	Upper/lower flammability or explosive limits	no data available
k)	Vapour pressure	no data available
l)	Vapour density	no data available
m)	Relative density	0.861 g/cm3 at 25 °C (77 °F)
n)	Water solubility	no data available
o)	Partition coefficient: n-octanol/water	no data available
p)	Auto-ignition temperature	no data available
q)	Decomposition temperature	no data available
r)	Viscosity	no data available
s)	Explosive properties	no data available

t) Oxidizing properties no data available

9.2 Other safety information
no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
no data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
no data available

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - no data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - rat - 4,850 mg/kg
Remarks: Behavioral:Convulsions or effect on seizure threshold. Behavioral:Ataxia.

Inhalation: no data available

Dermal: no data available

no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitisation
no data available

Germ cell mutagenicity

mouse
Sister chromatid exchange

Carcinogenicity

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

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

Reproductive toxicity - rat - Oral
Maternal Effects: Other effects. Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

no data available

Specific target organ toxicity - single exposure
no data available

Specific target organ toxicity - repeated exposure
no data available

Aspiration hazard
The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Additional Information
RTECS: XT2550000

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

12. ECOLOGICAL INFORMATION

12.1 Toxicity
no data available

12.2 Persistence and degradability
no data available

12.3 Bioaccumulative potential
no data available

12.4 Mobility in soil
no data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3295 Class: 3 Packing group: III
Proper shipping name: Hydrocarbons, liquid, n.o.s.
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 3295 Class: 3 Packing group: III EMS-No: F-E, S-D
Proper shipping name: HYDROCARBONS, LIQUID, N.O.S.
Marine pollutant: No

IATA

UN number: 3295 Class: 3 Packing group: III
Proper shipping name: Hydrocarbons, liquid, n.o.s.

15. REGULATORY INFORMATION

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

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

SARA 311/312 Hazards
Fire Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
4-Ethyltoluene	622-96-8	

New Jersey Right To Know Components

	CAS-No.	Revision Date
4-Ethyltoluene	622-96-8	

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Asp. Tox.	Aspiration hazard
Flam. Liq.	Flammable liquids
H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.

HMIS Rating

Health hazard:	1
Chronic Health Hazard:	
Flammability:	2
Physical Hazard	0

NFPA Rating

Health hazard:	0
Fire Hazard:	2
Reactivity Hazard:	0

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

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

SAFETY DATA SHEET

Version 4.5
Revision Date 07/08/2014
Print Date 10/12/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : 4-Ethyltoluene

Product Number : E49800
Brand : Aldrich

CAS-No. : 622-96-8

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 3), H226
Aspiration hazard (Category 1), H304

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H226 Flammable liquid and vapour.
H304 May be fatal if swallowed and enters airways.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.

P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P331	Do NOT induce vomiting.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula : C_9H_{12}
Molecular Weight : 120.19 g/mol
CAS-No. : 622-96-8
EC-No. : 210-761-2

Hazardous components

Component	Classification	Concentration
4-Ethyltoluene		
	Flam. Liq. 3; Asp. Tox. 1; H226, H304	-

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

In case of eye contact
Flush eyes with water as a precaution.

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
no data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

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

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm

Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: clear, liquid Colour: light yellow
b)	Odour	no data available
c)	Odour Threshold	no data available
d)	pH	no data available
e)	Melting point/freezing point	no data available
f)	Initial boiling point and boiling range	162 °C (324 °F) - lit.
g)	Flash point	43 °C (109 °F) - closed cup
h)	Evapouration rate	no data available
i)	Flammability (solid, gas)	no data available
j)	Upper/lower flammability or explosive limits	no data available
k)	Vapour pressure	no data available
l)	Vapour density	no data available
m)	Relative density	0.861 g/cm3 at 25 °C (77 °F)
n)	Water solubility	no data available
o)	Partition coefficient: n-octanol/water	no data available
p)	Auto-ignition temperature	no data available
q)	Decomposition temperature	no data available
r)	Viscosity	no data available
s)	Explosive properties	no data available

t) Oxidizing properties no data available

9.2 Other safety information
no data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
no data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
no data available

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - no data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - rat - 4,850 mg/kg
Remarks: Behavioral:Convulsions or effect on seizure threshold. Behavioral:Ataxia.

Inhalation: no data available

Dermal: no data available

no data available

Skin corrosion/irritation
no data available

Serious eye damage/eye irritation
no data available

Respiratory or skin sensitisation
no data available

Germ cell mutagenicity

mouse
Sister chromatid exchange

Carcinogenicity

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

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
no data available

Reproductive toxicity - rat - Oral
Maternal Effects: Other effects. Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

no data available

Specific target organ toxicity - single exposure
no data available

Specific target organ toxicity - repeated exposure
no data available

Aspiration hazard
The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Additional Information
RTECS: XT2550000

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

12. ECOLOGICAL INFORMATION

12.1 Toxicity
no data available

12.2 Persistence and degradability
no data available

12.3 Bioaccumulative potential
no data available

12.4 Mobility in soil
no data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

no data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3295 Class: 3 Packing group: III
Proper shipping name: Hydrocarbons, liquid, n.o.s.
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 3295 Class: 3 Packing group: III EMS-No: F-E, S-D
Proper shipping name: HYDROCARBONS, LIQUID, N.O.S.
Marine pollutant: No

IATA

UN number: 3295 Class: 3 Packing group: III
Proper shipping name: Hydrocarbons, liquid, n.o.s.

15. REGULATORY INFORMATION

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

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

SARA 311/312 Hazards
Fire Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
4-Ethyltoluene	622-96-8	

New Jersey Right To Know Components

	CAS-No.	Revision Date
4-Ethyltoluene	622-96-8	

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Asp. Tox.	Aspiration hazard
Flam. Liq.	Flammable liquids
H226	Flammable liquid and vapour.
H304	May be fatal if swallowed and enters airways.

HMIS Rating

Health hazard:	1
Chronic Health Hazard:	
Flammability:	2
Physical Hazard	0

NFPA Rating

Health hazard:	0
Fire Hazard:	2
Reactivity Hazard:	0

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

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

SAFETY DATA SHEET

Creation Date 01-May-2012 **Revision Date** 11-Aug-2014 **Revision Number** 1

1. Identification

Product Name **Phenanthrene**

Cat No. : **AC130090000; AC130090050; AC130090500; AC130095000**

Synonyms No information available

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Entity / Business Name
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute oral toxicity	Category 4

Label Elements

Signal Word
Warning

Hazard Statements
Harmful if swallowed

Precautionary Statements
Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Ingestion
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Very toxic to aquatic life with long lasting effects

3. Composition / information on ingredients

Component	CAS-No	Weight %
Phenanthrene	85-01-8	>95

4. First-aid measures

General Advice If symptoms persist, call a physician.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact Obtain medical attention. Wash off immediately with plenty of water for at least 15 minutes.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Obtain medical attention.

Ingestion Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

Most important symptoms/effects None reasonably foreseeable.
Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable Extinguishing Media No information available

Flash Point No information available
Method - No information available

Autoignition Temperature Not applicable
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous Combustion Products
Carbon monoxide (CO) Carbon dioxide (CO_2)
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
1	1	0	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment. Avoid dust formation.

Environmental Precautions Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage.

Methods for Containment and Clean Up Sweep up or vacuum up spillage and collect in suitable container for disposal. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling Wear personal protective equipment. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls / personal protection

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

- **Eye/face Protection** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
- **Skin and body protection** Long sleeved clothing.
- **Respiratory Protection** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
- **Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Solid
Appearance	Beige
Odor	Odorless
Odor Threshold	No information available
pH	No information available
Melting Point/Range	95 - 101 °C / 203 - 213.8 °F
Boiling Point/Range	336 °C / 636.8 °F
Flash Point	No information available
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	1 mmHg @ 116 °C
Vapor Density	Not applicable
Relative Density	1.063
Solubility	Insoluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	Not applicable
Decomposition temperature	No information available
Viscosity	Not applicable
Molecular Formula	C14 H10
Molecular Weight	178.23

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products. Excess heat. Avoid dust formation.

Incompatible Materials Strong oxidizing agents

Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO_2)

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Phenanthrene	1.8 g/kg (Rat)	Not listed	Not listed

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Phenanthrene	85-01-8	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea

Phenanthrene	Not listed	LC50 = 3.2 mg/L 96h	Not listed	LC50 = 0.35 mg/L 48h

Persistence and Degradability Insoluble in water May persist

Bioaccumulation/ Accumulation No information available.

Mobility . Is not likely mobile in the environment due its low water solubility.

Component	log Pow
Phenanthrene	4.46

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No UN3077
Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE,SOLID, N.O.S.
Hazard Class 9
Packing Group III

TDG

UN-No UN3077
Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE,SOLID, N.O.S.
Hazard Class 9
Packing Group III

IATA

UN-No UN3077
Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.*
Hazard Class 9
Packing Group III

IMDG/IMO

UN-No UN3077
Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Hazard Class 9
Packing Group III

15. Regulatory information

All of the components in the product are on the following Inventory lists: X = listed

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Phenanthrene	X	X	-	201-581-5	-		X	X	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Phenanthrene	85-01-8	>95	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Phenanthrene	-	-	X	X

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Phenanthrene	5000 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Phenanthrene	X	X	X	-	-

U.S. Department of Transportation

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class Non-controlled

16. Other information

Prepared By Regulatory Affairs

Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date	01-May-2012
Revision Date	11-Aug-2014
Print Date	11-Aug-2014
Revision Summary	This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS

SAFETY DATA SHEET

Version 3.10
Revision Date 03/03/2015
Print Date 02/07/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Potassium

Product Number : 244864
Brand : Aldrich

CAS-No. : 7440-09-7

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Substances and mixtures, which in contact with water, emit flammable gases (Category 1), H260
Skin corrosion (Category 1A), H314
Serious eye damage (Category 1), H318
Carcinogenicity (Category 1A), H350

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H260	In contact with water releases flammable gases which may ignite spontaneously.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H350	May cause cancer.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P223	Keep away from any possible contact with water, because of violent reaction and possible flash fire.

P231 + P232	Handle under inert gas. Protect from moisture.
P260	Do not breathe dust or mist.
P264	Wash skin thoroughly after handling.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P281	Use personal protective equipment as required.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P335 + P334	Brush off loose particles from skin. Immerse in cool water/ wrap in wet bandages.
P363	Wash contaminated clothing before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P402 + P404	Store in a dry place. Store in a closed container.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Reacts violently with water.
May form explosive peroxides.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Formula : K
Molecular weight : 39.10 g/mol

Hazardous components

Component		Classification	Concentration
Potassium			
CAS-No. EC-No. Index-No.	7440-09-7 231-119-8 019-001-00-2	Water-react. 1; Skin Corr. 1A; Eye Dam. 1; H260, H314	>= 90 - <= 100 %
Paraffin oils			
CAS-No. EC-No.	8012-95-1 232-384-2	Carc. 1A; H350	>= 1 - < 5 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.Continue rinsing eyes during transport to hospital.

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Dry powder

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Potassium oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.Keep away from sources of ignition - No smoking.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Never allow product to get in contact with water during storage.

Handle and store under inert gas.
Storage class (TRGS 510): Hazardous materials, which set free flammable gases upon contact with water

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Paraffin oils	8012-95-1	STEL	10.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	10.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract irritation 2014 Adoption Not classifiable as a human carcinogen		
		Upper Respiratory Tract irritation 2014 Adoption Exposure by all routes should be carefully controlled to levels as low as possible. Suspected human carcinogen		
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Upper Respiratory Tract irritation Exposure by all routes should be carefully controlled to levels as low as possible. Suspected human carcinogen		
		TWA	5.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Not classifiable as a human carcinogen		
		TWA	5.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	10.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Upper Respiratory Tract irritation Exposure by all routes should be carefully controlled to levels as low as possible. Suspected human carcinogen		

8.2 Exposure controls

Appropriate engineering controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: Fragments Colour: grey
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 64 °C (147 °F)
f)	Initial boiling point and boiling range	774 °C (1,425 °F) at 1,013 hPa (760 mmHg)
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower	No data available

	flammability or explosive limits	
k)	Vapour pressure	0.12 hPa (0.09 mmHg) at 260 °C (500 °F)
l)	Vapour density	No data available
m)	Relative density	0.860 g/cm3
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Reacts violently with water.

10.4 Conditions to avoid
Exposure to moisture

10.5 Incompatible materials
Oxidizing agents, Strong oxidizing agents, Carbon oxides, Reacts violently with water., Reacts with water to generate Hydrogen gas.

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC: 1 - Group 1: Carcinogenic to humans (Paraffin oils)

NTP: Known to be human carcinogenThe reference note has been added by TD based on the background information of the NTP. (Paraffin oils)

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: Not available

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 2257 Class: 4.3 Packing group: I
Proper shipping name: Potassium
Reportable Quantity (RQ):

Poison Inhalation Hazard: No

IMDG
UN number: 2257 Class: 4.3 Packing group: I EMS-No: F-G, S-N
Proper shipping name: POTASSIUM

IATA
UN number: 2257 Class: 4.3 Packing group: I
Proper shipping name: Potassium
IATA Passenger: Not permitted for transport

15. REGULATORY INFORMATION

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

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

SARA 311/312 Hazards
Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Potassium	7440-09-7	1993-04-24
Paraffin oils	8012-95-1	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Potassium	7440-09-7	1993-04-24
Paraffin oils	8012-95-1	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Potassium	7440-09-7	1993-04-24
Paraffin oils	8012-95-1	2007-03-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Paraffin oils	8012-95-1	1987-02-27

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Carc.	Carcinogenicity
Eye Dam.	Serious eye damage
H260	In contact with water releases flammable gases which may ignite spontaneously.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H350	May cause cancer.
Skin Corr.	Skin corrosion
Water-react.	Substances and mixtures, which in contact with water, emit flammable gases

HMIS Rating
Health hazard: 3

Chronic Health Hazard:	*
Flammability:	4
Physical Hazard	2

NFPA Rating

Health hazard:	3
Fire Hazard:	4
Reactivity Hazard:	2
Special hazard.I:	W

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 3.10 Revision Date: 03/03/2015 Print Date: 02/07/2016

SAFETY DATA SHEET

Version 4.6
Revision Date 02/25/2016
Print Date 03/03/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Propylene

Product Number : 295663
Brand : Aldrich
Index-No. : 601-011-00-9

CAS-No. : 115-07-1

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable gases (Category 1), H220
Gases under pressure (Liquefied gas), H280
Simple Asphyxiant,

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.
May displace oxygen and cause rapid suffocation.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381 Eliminate all ignition sources if safe to do so.
P410 + P403 Protect from sunlight. Store in a well-ventilated place.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms : Propene

Formula : C_3H_6
Molecular weight : 42.08 g/mol
CAS-No. : 115-07-1
EC-No. : 204-062-1
Index-No. : 601-011-00-9

Hazardous components

Component	Classification	Concentration
Propene		
	Flam. Gas 1; Press. Gas Liquefied gas; SA ; H220, H280,	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

In case of eye contact
Flush eyes with water as a precaution.

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

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

No data available

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Clean up promptly by sweeping or vacuum.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid inhalation of vapour or mist.
Use explosion-proof equipment.Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Contents under pressure.
Storage class (TRGS 510): Gases

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Propene	115-07-1	TWA	500 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract irritation Asphyxia Not classifiable as a human carcinogen		
		TWA	500.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Asphyxia Not classifiable as a human carcinogen		

8.2 Exposure controls

Appropriate engineering controls

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

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 60 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Impervious clothing, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: gaseous, liquid
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -185 °C (-301 °F) - lit.
f)	Initial boiling point and boiling range	-47.7 °C (-53.9 °F) - lit.
g)	Flash point	-107.99 °C (-162.38 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 11.1 %(V) Lower explosion limit: 2 %(V)
k)	Vapour pressure	15,604 hPa (11,704 mmHg) at 37.7 °C (99.9 °F)
l)	Vapour density	1.45 - (Air = 1.0)
m)	Relative density	No data available

n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

Relative vapour density 1.45 - (Air = 1.0)

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents, Strong acids

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (Propene)

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: UC6740000

Dizziness, Headache, Central nervous system depression
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1077 Class: 2.1
Proper shipping name: Propylene

Reportable Quantity (RQ):

Poison Inhalation Hazard: No

IMDG
UN number: 1077 Class: 2.1 EMS-No: F-D, S-U
Proper shipping name: PROPYLENE

IATA
UN number: 1077 Class: 2.1
Proper shipping name: Propylene
IATA Passenger: Not permitted for transport

15. REGULATORY INFORMATION

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

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Propene	115-07-1	1993-04-24

SARA 311/312 Hazards
Fire Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Propene	115-07-1	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Propene	115-07-1	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Propene	115-07-1	1993-04-24

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

	May displace oxygen and cause rapid suffocation.
Flam. Gas	Flammable gases
H220	Extremely flammable gas.
H280	Contains gas under pressure; may explode if heated.
Press. Gas	Gases under pressure
SA	Simple Asphyxiant

HMIS Rating

Health hazard:	0
Chronic Health Hazard:	
Flammability:	4
Physical Hazard	3

NFPA Rating

Health hazard:	0
Fire Hazard:	4
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.6 Revision Date: 02/25/2016 Print Date: 03/03/2016

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU

p-Xylene ≥99 %, for synthesis

article number: **8817**
Version: **3.0 en**
Replaces version of: 04.07.2016
Version: (2)

date of compilation: 11.05.2015
Revision: 11.04.2019

SECTION 1: Identification of the substance/mixture and of the company/ undertaking

1.1 Product identifier

Identification of the substance	**p-Xylene**
Article number	8817
Registration number (REACH)	It is not required to list the identified uses because the substance is not subject to registration according to REACH (< 1 t/a)
Index No	601-022-00-9
EC number	203-396-5
CAS number	106-42-3

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses:	laboratory chemical laboratory and analytical use

1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
Germany

Telephone: +49 (0) 721 - 56 06 0
Telefax: +49 (0) 721 - 56 06 149
e-mail: sicherheit@carlroth.de
Website: www.carlroth.de

Competent person responsible for the safety data sheet	: Department Health, Safety and Environment
e-mail (competent person)	**: sicherheit@carlroth.de**

1.4 Emergency telephone number

Emergency information service	**Poison Centre Munich: +49/(0)89 19240**

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Classification acc. to GHS

Section	Hazard class	Hazard class and category	Hazard statement
2.6	flammable liquid	(Flam. Liq. 3)	H226
3.1D	acute toxicity (dermal)	(Acute Tox. 4)	H312
3.1I	acute toxicity (inhal.)	(Acute Tox. 4)	H332
3.2	skin corrosion/irritation	(Skin Irrit. 2)	H315

Classification acc. to GHS			
Section	**Hazard class**	**Hazard class and category**	**Hazard statement**
3.3	serious eye damage/eye irritation	(Eye Irrit. 2)	H319
3.8R	specific target organ toxicity - single exposure (respiratory tract irritation)	(STOT SE 3)	H335
3.10	aspiration hazard	(Asp. Tox. 1)	H304

2.2 Label elements

Labelling according to Regulation (EC) No 1272/2008 (CLP)

Signal word **Danger**

Pictograms

GHS02, GHS07, GHS08

Hazard statements

H226	Flammable liquid and vapour
H304	May be fatal if swallowed and enters airways
H312+H332	Harmful in contact with skin or if inhaled
H315	Causes skin irritation
H319	Causes serious eye irritation
H335	May cause respiratory irritation

Precautionary statements

Precautionary statements - prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P280	Wear protective gloves/protective clothing/eye protection/face protection.

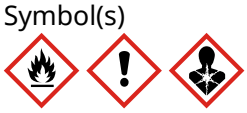
Precautionary statements - response

P301+P310	IF SWALLOWED: Immediately call a doctor.
P302+P352	IF ON SKIN: Wash with plenty of water/...
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P331	Do NOT induce vomiting.

Labelling of packages where the contents do not exceed 125 ml

Signal word: **Danger**

Symbol(s)



H304	May be fatal if swallowed and enters airways.
P301+P310	IF SWALLOWED: Immediately call a doctor.
P331	Do NOT induce vomiting.

2.3 Other hazards

There is no additional information.

SECTION 3: Composition/information on ingredients

3.1 Substances

Name of substance	1,4-Dimethylbenzene
Index No	601-022-00-9
EC number	203-396-5
CAS number	106-42-3
Molecular formula	C_8H_{10}
Molar mass	106,2 $^{g}/_{mol}$

SECTION 4: First aid measures

4.1 Description of first aid measures

General notes

Take off contaminated clothing.

Following inhalation

Provide fresh air. In all cases of doubt, or when symptoms persist, seek medical advice.

Following skin contact

Rinse skin with water/shower. In case of skin irritation, consult a physician.

Following eye contact

Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart. In case of eye irritation consult an ophthalmologist.

Following ingestion

Rinse mouth immediately and drink plenty of water. Observe aspiration hazard if vomiting occurs. Call a physician immediately.

4.2 Most important symptoms and effects, both acute and delayed

Irritant effects. Vertigo. Dizziness. Unconsciousness. Aspiration hazard. Headache. Cough. Breathing difficulties. Nausea. Vomiting.

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings

water spray, foam, dry extinguishing powder, carbon dioxide (CO2)

Unsuitable extinguishing media

water jet

5.2 Special hazards arising from the substance or mixture

Combustible. Vapours can form explosive mixtures with air.

Hazardous combustion products

In case of fire may be liberated: carbon monoxide (CO), carbon dioxide (CO2)

5.3 Advice for firefighters

Vapours are heavier than air. Beware of reignition. Fight fire with normal precautions from a reasonable distance. Wear self-contained breathing apparatus.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Use personal protective equipment as required. Avoid contact with skin, eyes and clothes. Do not breathe vapour/spray. Avoidance of ignition sources.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Explosive properties.

6.3 Methods and material for containment and cleaning up

Advices on how to contain a spill

Covering of drains.

Advices on how to clean up a spill

Absorb with liquid-binding material (e.g. sand, diatomaceous earth, acid- or universal binding agents).

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Provide adequate ventilation as well as local exhaustion at critical locations. Avoid exposure. When not in use, keep containers tightly closed.

- **Measures to prevent fire as well as aerosol and dust generation**

Keep away from sources of ignition - No smoking.

Take precautionary measures against static discharge.

Advice on general occupational hygiene

Wash hands before breaks and after work. Keep away from food, drink and animal feedingstuffs. When using do not smoke.

7.2 Conditions for safe storage, including any incompatibilities

Store in a well-ventilated place. Keep container tightly closed. Protect from sunlight.

Incompatible substances or mixtures

Observe hints for combined storage.

Consideration of other advice

Ground/bond container and receiving equipment.

• Ventilation requirements

Use local and general ventilation.

• Specific designs for storage rooms or vessels

Recommended storage temperature: 15 – 25 °C.

7.3 Specific end use(s)

No information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

National limit values

Occupational exposure limit values (Workplace Exposure Limits)

Coun-try	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m³]	STEL [ppm]	STEL [mg/m³]	Source
EU	p-xylene	106-42-3	IOELV	50	221	100	442	2000/39/EC
MT	p-xylene	106-42-3	OELV	50	221	100	442	CAP. 424

Notation

STEL Short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)

TWA Time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

Relevant DNELs/DMELs/PNECs and other threshold levels

• human health values

Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
DNEL	221 mg/m³	human, inhalatory	worker (industry)	chronic - systemic effects
DNEL	442 mg/m³	human, inhalatory	worker (industry)	acute - systemic effects
DNEL	221 mg/m³	human, inhalatory	worker (industry)	chronic - local effects
DNEL	442 mg/m³	human, inhalatory	worker (industry)	acute - local effects
DNEL	212 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

• environmental values

Endpoint	Threshold level	Environmental compartment	Exposure time
PNEC	0,25 mg/l	water	intermittent release
PNEC	0,044 mg/l	freshwater	short-term (single instance)
PNEC	0,004 mg/l	marine water	short-term (single instance)
PNEC	1,6 mg/l	sewage treatment plant (STP)	short-term (single instance)
PNEC	2,52 mg/kg	freshwater sediment	short-term (single instance)
PNEC	0,252 mg/kg	marine sediment	short-term (single instance)
PNEC	0,852 mg/kg	soil	short-term (single instance)

8.2 Exposure controls

Individual protection measures (personal protective equipment)

Eye/face protection

Use safety goggle with side protection.

Skin protection

• hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

• type of material

FKM (fluoro rubber)

• material thickness

0,4 mm.

• breakthrough times of the glove material

>480 minutes (permeation: level 6)

• other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended.

Respiratory protection

Respiratory protection necessary at: Aerosol or mist formation. Type: A (against organic gases and vapours with a boiling point of > 65 °C , colour code: Brown).

Environmental exposure controls

Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	liquid (fluid)
Colour	colourless
Odour	characteristic
Odour threshold	No data available

Other physical and chemical parameters

pH (value)	This information is not available.
Melting point/freezing point	13,25 °C at 1.013 hPa
Initial boiling point and boiling range	138,2 °C at 1.013 hPa
Flash point	27 °C at 1.013 hPa
Evaporation rate	no data available
Flammability (solid, gas)	not relevant (fluid)
Explosive limits	
• lower explosion limit (LEL)	0,9 vol%
• upper explosion limit (UEL)	7 vol%
Explosion limits of dust clouds	not relevant
Vapour pressure	8,7 hPa at 20 °C
Density	0,86 $^{g}/_{cm^3}$ at 25 °C
Vapour density	This information is not available.
Bulk density	Not applicable
Relative density	Information on this property is not available.
Solubility(ies)	
Water solubility	170,5 $^{mg}/_{l}$ at 25 °C
Partition coefficient	
n-octanol/water (log KOW)	3,15 (pH value: 7, 20 °C) (ECHA)
Soil organic carbon/water (log KOC)	2,73 (ECHA)
Auto-ignition temperature	528 °C at 1.013 hPa - ECHA
Decomposition temperature	no data available
Viscosity	
• kinematic viscosity	0,7012 $^{mm^2}/_{s}$
• dynamic viscosity	0,603 mPa s at 25 °C
Explosive properties	Shall not be classified as explosive

Oxidising properties	none

9.2 Other information

Surface tension	28,01 $^{mN}/_{m}$ (25 °C)
Temperature class (EU, acc. to ATEX)	T1 (Maximum permissible surface temperature on the equipment: 450°C)

SECTION 10: Stability and reactivity

10.1 Reactivity

Risk of ignition. In case of warming: Vapours can form explosive mixtures with air.

10.2 Chemical stability

The material is stable under normal ambient and anticipated storage and handling conditions of temperature and pressure.

10.3 Possibility of hazardous reactions

Violent reaction with: Oxidisers, Nitric acid, Sulphuric acid, Sulphur

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

10.5 Incompatible materials

Rubber articles, different plastics

10.6 Hazardous decomposition products

Hazardous combustion products: see section 5.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Exposure route	Endpoint	Value	Species	Source
inhalation: vapour	LC50	19,8 $^{mg}/_{l}$/4h	rat	GESTIS
oral	LD50	3.523 $^{mg}/_{kg}$	rat	ECHA
dermal	LD50	12.126 $^{mg}/_{kg}$	rabbit	ECHA

Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitisation

Shall not be classified as a respiratory or skin sensitiser.

Summary of evaluation of the CMR properties

Shall not be classified as germ cell mutagenic, carcinogenic nor as a reproductive toxicant

• Specific target organ toxicity - single exposure

May cause respiratory irritation.

• Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

May be fatal if swallowed and enters airways.

Symptoms related to the physical, chemical and toxicological characteristics

• If swallowed

vomiting, aspiration hazard

• If in eyes

Causes serious eye irritation

• If inhaled

irritant effects, cough, breathing difficulties, pulmonary oedema

• If on skin

causes skin irritation, risk of absorption via the skin

Other information

Other adverse effects: Headache, Vertigo, Dizziness, Nausea, Unconsciousness, Liver and kidney damage, Symptoms can occur only after several hours

SECTION 12: Ecological information

12.1 Toxicity

acc. to 1272/2008/EC: Shall not be classified as hazardous to the aquatic environment.

Aquatic toxicity (acute)

Endpoint	Value	Species	Source	Exposure time
LC50	2,6 $^{mg}/_{l}$	fish	ECHA	96 h
ErC50	4,7 $^{mg}/_{l}$	algae	ECHA	72 h

Aquatic toxicity (chronic)

Endpoint	Value	Species	Source	Exposure time
EC50	2,2 $^{mg}/_{l}$	algae	ECHA	73 h
NOEC	1,57 $^{mg}/_{l}$	aquatic invertebrates	ECHA	21 d
NOEC	0,44 $^{mg}/_{l}$	algae	ECHA	73 h
growth rate (ErCx) 10%	1,9 $^{mg}/_{l}$	algae	ECHA	73 h

12.2 Process of degradability

The substance is readily biodegradable.
Theoretical Oxygen Demand: 3,165 $^{mg}/_{mg}$
Theoretical Carbon Dioxide: 3,316 $^{mg}/_{mg}$

Process	Degradation rate	Time
carbon dioxide generation	50 %	13 d
oxygen depletion	90 %	28 d

12.3 Bioaccumulative potential

Does not significantly accumulate in organisms.

n-octanol/water (log KOW)	3,15 (pH value: 7, 20 °C)
BCF	>5,5 – <12,2 (ECHA)

12.4 Mobility in soil

Henry's law constant	623 $^{Pa\ m^3}/_{mol}$ at 25 °C
The Organic Carbon normalised adsorption coefficient	2,73

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used.

Sewage disposal-relevant information

Do not empty into drains.

Waste treatment of containers/packagings

It is a dangerous waste; only packagings which are approved (e.g. acc. to ADR) may be used.

13.2 Relevant provisions relating to waste

The allocation of waste identity numbers/waste descriptions must be carried out according to the EEC, specific to the industry and process.

13.3 Remarks

Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities. Please consider the relevant national or regional provisions.

SECTION 14: Transport information

14.1	UN number	**1307**
14.2	UN proper shipping name	**XYLENES**
	Hazardous ingredients	p-Xylene
14.3	Transport hazard class(es)	
	Class	3 (flammable liquids)
14.4	Packing group	III (substance presenting low danger)
14.5	Environmental hazards	none (non-environmentally hazardous acc. to the dangerous goods regulations)

14.6 Special precautions for user

Provisions for dangerous goods (ADR) should be complied within the premises.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code

The cargo is not intended to be carried in bulk.

14.8 Information for each of the UN Model Regulations

• Transport of dangerous goods by road, rail and inland waterway (ADR/RID/ADN)

UN number	1307
Proper shipping name	XYLENES
Particulars in the transport document	UN1307, XYLENES, 3, III, (D/E)
Class	3
Classification code	F1
Packing group	III
Danger label(s)	3

Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 L
Transport category (TC)	3
Tunnel restriction code (TRC)	D/E
Hazard identification No	30

• International Maritime Dangerous Goods Code (IMDG)

UN number	1307
Proper shipping name	XYLENES
Particulars in the shipper's declaration	UN1307, XYLENES, 3, III, 27°C c.c.
Class	3

Marine pollutant	-
Packing group	III
Danger label(s)	3

Special provisions (SP)	223
Excepted quantities (EQ)	E1
Limited quantities (LQ)	5 L
EmS	F-E, S-D
Stowage category	A

• International Civil Aviation Organization (ICAO-IATA/DGR)

UN number	1307
Proper shipping name	Xylenes
Particulars in the shipper's declaration	UN1307, Xylenes, 3, III
Class	3
Packing group	III
Danger label(s)	3

Special provisions (SP)	A3
Excepted quantities (EQ)	E1
Limited quantities (LQ)	10 L

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

Relevant provisions of the European Union (EU)

• Regulation 649/2012/EU concerning the export and import of hazardous chemicals (PIC)

Not listed.

• Regulation 1005/2009/EC on substances that deplete the ozone layer (ODS)

Not listed.

• Regulation 850/2004/EC on persistent organic pollutants (POP)

Not listed.

• Restrictions according to REACH, Annex XVII

Name of substance	CAS No	Wt%	Type of registration	Conditions of restriction	No
p-Xylene		100	1907/2006/EC annex XVII	R3	3
p-Xylene		100	1907/2006/EC annex XVII	R40	40

Legend

R3

1. Shall not be used in:
- ornamental articles intended to produce light or colour effects by means of different phases, for example in ornamental lamps and ashtrays,
- tricks and jokes,
- games for one or more participants, or any article intended to be used as such, even with ornamental aspects,
2. Articles not complying with paragraph 1 shall not be placed on the market.
3. Shall not be placed on the market if they contain a colouring agent, unless required for fiscal reasons, or perfume, or both, if they:
- can be used as fuel in decorative oil lamps for supply to the general public, and,
- present an aspiration hazard and are labelled with R65 or H304,
4. Decorative oil lamps for supply to the general public shall not be placed on the market unless they conform to the European Standard on Decorative oil lamps (EN 14059) adopted by the European Committee for Standardisation (CEN).
5. Without prejudice to the implementation of other Community provisions relating to the classification, packaging and labelling of dangerous substances and mixtures, suppliers shall ensure, before the placing on the market, that the following requirements are met:
(a) lamp oils, labelled with R65 or H304, intended for supply to the general public are visibly, legibly and indelibly marked as follows: 'Keep lamps filled with this liquid out of the reach of children'; and, by 1 December 2010, 'Just a sip of lamp oil - or even sucking the wick of lamps - may lead to life-threatening lung damage';
(b) grill lighter fluids, labelled with R65 or H304, intended for supply to the general public are legibly and indelibly marked by 1 December 2010 as follows: 'Just a sip of grill lighter may lead to life threatening lung damage';
(c) lamp oils and grill lighters, labelled with R65 or H304, intended for supply to the general public are packaged in black opaque containers not exceeding 1 litre by 1 December 2010.
6. No later than 1 June 2014, the Commission shall request the European Chemicals Agency to prepare a dossier, in accordance with Article 69 of the present Regulation with a view to ban, if appropriate, grill lighter fluids and fuel for decorative lamps, labelled R65 or H304, intended for supply to the general public.
7. Natural or legal persons placing on the market for the first time lamp oils and grill lighter fluids, labelled with R65 or H304, shall by 1 December 2011, and annually thereafter, provide data on alternatives to lamp oils and grill lighter fluids labelled R65 or H304 to the competent authority in the Member State concerned. Member States shall make those data available to the Commission.

R40

1. Shall not be used, as substance or as mixtures in aerosol dispensers where these aerosol dispensers are intended for supply to the general public for entertainment and decorative purposes such as the following:
- metallic glitter intended mainly for decoration,
- artificial snow and frost,
- 'whoopee' cushions,
- silly string aerosols,
- imitation excrement,
- horns for parties,
- decorative flakes and foams,
- artificial cobwebs,
- stink bombs.
2. Without prejudice to the application of other Community provisions on the classification, packaging and labelling of substances, suppliers shall ensure before the placing on the market that the packaging of aerosol dispensers referred to above is marked visibly, legibly and indelibly with:
'For professional users only'.
3. By way of derogation, paragraphs 1 and 2 shall not apply to the aerosol dispensers referred to Article 8 (1a) of Council Directive 75/324/EEC (2).
4. The aerosol dispensers referred to in paragraphs 1 and 2 shall not be placed on the market unless they conform to the requirements indicated.

• Restrictions according to REACH, Title VIII

None.

• List of substances subject to authorisation (REACH, Annex XIV)/SVHC - candidate list

not listed

• Seveso Directive

2012/18/EU (Seveso III)				
No	**Dangerous substance/hazard categories**	**Qualifying quantity (tonnes) for the application of lower and upper-tier requirements**		**Notes**
P5c	flammable liquids (cat. 2, 3)	5.000	50.000	51)

Notation
51) Flammable liquids, categories 2 or 3 not covered by P5a and P5b

• Directive 75/324/EEC relating to aerosol dispensers

Filling batch

Deco-Paint Directive (2004/42/EC)

VOC content	100 % 860 $^{g}/_{l}$

Directive on industrial emissions (VOCs, 2010/75/EU)

VOC content	100 %
VOC content	860 $^{g}/_{l}$

Directive 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) - Annex II

not listed

Regulation 166/2006/EC concerning the establishment of a European Pollutant Release and Transfer Register (PRTR)

not listed

Directive 2000/60/EC establishing a framework for Community action in the field of water policy (WFD)

not listed

Regulation 98/2013/EU on the marketing and use of explosives precursors

not listed

Regulation 111/2005/EC laying down rules for the monitoring of trade between the Community and third countries in drug precursors

not listed

National inventories

Substance is listed in the following national inventories:

Country	National inventories	Status
AU	AICS	substance is listed
CA	DSL	substance is listed
CN	IECSC	substance is listed
EU	ECSI	substance is listed
EU	REACH Reg.	substance is listed
JP	CSCL-ENCS	substance is listed

Country	National inventories	Status
JP	ISHA-ENCS	substance is listed
KR	KECI	substance is listed
MX	INSQ	substance is listed
NZ	NZIoC	substance is listed
PH	PICCS	substance is listed
TR	CICR	substance is listed
TW	TCSI	substance is listed
US	TSCA	substance is listed

Legend

AICS	Australian Inventory of Chemical Substances
CICR	Chemical Inventory and Control Regulation
CSCL-ENCS	List of Existing and New Chemical Substances (CSCL-ENCS)
DSL	Domestic Substances List (DSL)
ECSI	EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
INSQ	National Inventory of Chemical Substances
ISHA-ENCS	Inventory of Existing and New Chemical Substances (ISHA-ENCS)
KECI	Korea Existing Chemicals Inventory
NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances
REACH Reg.	REACH registered substances
TCSI	Taiwan Chemical Substance Inventory
TSCA	Toxic Substance Control Act

15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance.

SECTION 16: Other information

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
2000/39/EC	Commission Directive establishing a first list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC
ADN	Accord européen relatif au transport international des marchandises dangereuses par voies de navigation intérieures (European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways)
ADR	Accord européen relatif au transport international des marchandises dangereuses par route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
BCF	bioconcentration factor
CAP. 424	Occupational Health and Safety Authority Act (CAP. 424)
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
CMR	Carcinogenic, Mutagenic or toxic for Reproduction
DGR	Dangerous Goods Regulations (see IATA/DGR)
DMEL	Derived Minimal Effect Level
DNEL	Derived No-Effect Level
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances

Abbr.	Descriptions of used abbreviations
EmS	Emergency Schedule
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
index No	the Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
IOELV	indicative occupational exposure limit value
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NLP	No-Longer Polymer
PBT	Persistent, Bioaccumulative and Toxic
PNEC	Predicted No-Effect Concentration
ppm	parts per million
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Règlement concernant le transport International ferroviaire des marchandises Dangereuses (Regulations concerning the International carriage of Dangerous goods by Rail)
STEL	short-term exposure limit
SVHC	Substance of Very High Concern
TWA	time-weighted average
VOC	Volatile Organic Compounds
vPvB	very Persistent and very Bioaccumulative

Key literature references and sources for data

- Regulation (EC) No. 1907/2006 (REACH), amended by 2015/830/EU
- Regulation (EC) No. 1272/2008 (CLP, EU GHS)
- Dangerous Goods Regulations (DGR) for the air transport (IATA)
- International Maritime Dangerous Goods Code (IMDG)

List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H226	flammable liquid and vapour
H304	may be fatal if swallowed and enters airways
H312	harmful in contact with skin
H315	causes skin irritation
H319	causes serious eye irritation
H332	harmful if inhaled
H335	may cause respiratory irritation

Disclaimer

The above information describes exclusively the safety requirements of the product and is based on our present-day knowledge. The information is intended to give you advice about the safe handling of the product named in this safety data sheet, for storage, processing, transport and disposal. The information cannot be transferred to other products. In the case of mixing the product with other products or in the case of processing, the information on this safety data sheet is not necessarily valid for the new made-up material.

Fisher Scientific

Part of Thermo Fisher Scientific

SAFETY DATA SHEET

Revision Date 10-Feb-2015 **Revision Number** 1

1. Identification

Product Name **Pyrene, ca 96%**

Cat No. : **AC157651000; AC157655000**

Synonyms Benzo[def]phenanthrene

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Entity / Business Name
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification
Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Label Elements
None required

Hazards not otherwise classified (HNOC)
Very toxic to aquatic life with long lasting effects

3. Composition / information on ingredients

Component	CAS-No	Weight %
Pyrene	129-00-0	96.0

4. First-aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes.

Inhalation Move to fresh air.

Ingestion Do not induce vomiting.

Most important symptoms/effects No information available.
Notes to Physician Treat symptomatically

5. Fire-fighting measures

Unsuitable Extinguishing Media No information available

Flash Point °C
Method - No information available

Autoignition Temperature No information available
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products
None known
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
1	1	0	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment.
Environmental Precautions See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage.

Methods for Containment and Clean Up No information available.

7. Handling and storage

Handling Ensure adequate ventilation.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls / personal protection

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by

OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Powder Solid
Appearance	Yellow
Odor	Odorless
Odor Threshold	No information available
pH	
Melting Point/Range	156 °C
Boiling Point/Range	°C @ 760 mmHg
Flash Point	°C
Evaporation Rate	No information available
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	< 1 mmHg @ 20 °C
Vapor Density	No information available
Relative Density	No information available
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	C16H10
Molecular Weight	202.25

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products.

Incompatible Materials Strong oxidizing agents

Hazardous Decomposition Products None under normal use conditions

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Pyrene	2700 mg/kg (Rat)	Not listed	Not listed

Toxicologically Synergistic No information available

Products

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Pyrene	129-00-0	group 3	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known
STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Pyrene	Not listed	Oncorhynchus mykiss: LC50 > 2mg/L 96h	Not listed	EC50 48h 1.8 mg/L EC50 48h 0.002-0.003 mg/L

Persistence and Degradability No information available
Bioaccumulation/ Accumulation No information available.

Mobility No information available.

Component	log Pow
Pyrene	4.88

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT Not regulated
TDG Not regulated
IATA Not regulated
IMDG/IMO Not regulated

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Pyrene	X	X	-	204-927-3	-		X	X	X	X	-

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313 Not applicable

SARA 311/312 Hazardous Categorization

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Pyrene	-	-	X	X

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
Not applicable

Component	Hazardous Substances RQs	CERCLA EHS RQs
Pyrene	5000 lb	5000 lb

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Pyrene	X	X	X	X	-

U.S. Department of Transportation

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class Non-controlled

16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Revision Date 10-Feb-2015
Print Date 10-Feb-2015
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS

Material Safety Data Sheet
sec-Butylbenzene, 99+%

MSDS# 73785

Section 1 - Chemical Product and Company Identification

MSDS Name:	sec-Butylbenzene, 99+%
Catalog Numbers:	AC107860000, AC107860050, AC107860500, AC107861000, AC107862500, AC107865000 AC107865000
Synonyms:	2-Phenylbutane; Benzene, (1-methylpropyl)-; (1-Methylpropyl)benzene; Benzene, sec-butyl-
Company Identification:	Acros Organics BVBA Janssen Pharmaceuticalaan 3a 2440 Geel, Belgium
Company Identification: (USA)	Acros Organics One Reagent Lane Fair Lawn, NJ 07410
For information in the US, call:	800-ACROS-01
For information in Europe, call:	+32 14 57 52 11
Emergency Number, Europe:	+32 14 57 52 99
Emergency Number US:	201-796-7100
CHEMTREC Phone Number, US:	800-424-9300
CHEMTREC Phone Number, Europe:	703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#:	135-98-8
Chemical Name:	sec-Butylbenzene
%:	99+
EINECS#:	205-227-0

Hazard Symbols: XI

Risk Phrases: 10 36/37/38

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Warning! Flammable liquid and vapor. May cause central nervous system depression. Causes eye, skin, and respiratory tract irritation. Target Organs: Central nervous system.

Potential Health Effects

Eye: Causes eye irritation.

Skin: Causes skin irritation.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Ingestion of large amounts may cause CNS depression.

Inhalation: Causes respiratory tract irritation.

Chronic: Prolonged or repeated skin contact may cause dermatitis.

Section 4 - First Aid Measures

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

Section 5 - Fire Fighting Measures

General Information:	As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Will burn if involved in a fire. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire. Flammable liquid and vapor.
Extinguishing Media:	For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Use agent most appropriate to extinguish fire. Do NOT use straight streams of water.
Autoignition Temperature:	415 deg C (779.00 deg F)
Flash Point:	45 deg C (113.00 deg F)
Explosion Limits: Lower:	0.80 vol %
Explosion Limits: Upper:	6.90 vol %
NFPA Rating:	health: 2; flammability: 2; instability: 0;

Section 6 - Accidental Release Measures

General Information:	Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks:	Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors.

Section 7 - Handling and Storage

Handling:	Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.
Storage:	Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area.

Section 8 - Exposure Controls, Personal Protection

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
sec-Butylbenzene	none listed	none listed	none listed

OSHA Vacated PELs: sec-Butylbenzene: None listed

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local explosion-proof ventilation to keep airborne levels to acceptable levels.

Exposure Limits

Personal Protective Equipment

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

Section 9 - Physical and Chemical Properties

Physical State:	Liquid
Color:	clear colorless
Odor:	None reported.
pH:	Not available
Vapor Pressure:	4 mm Hg @ 37.7 deg C
Vapor Density:	4.62
Evaporation Rate:	Not available
Viscosity:	Not available
Boiling Point:	173 - 174 deg C @ 760 mm Hg
Freezing/Melting Point:	-75 deg C (-103.00°F)
Decomposition Temperature:	Not available
Solubility in water:	0.015 g/L water
Specific Gravity/Density:	0.8630 g/cm3
Molecular Formula:	C10H14
Molecular Weight:	134.22

Section 10 - Stability and Reactivity

Chemical Stability:	Stable under normal temperatures and pressures.
Conditions to Avoid:	Ignition sources, excess heat.
Incompatibilities with Other Materials	Strong oxidizing agents.
Hazardous Decomposition Products	Carbon monoxide, carbon monoxide, carbon dioxide.
Hazardous Polymerization	Has not been reported.

Section 11 - Toxicological Information

RTECS#: CAS# 135-98-8: CY9100000

RTECS:

LD50/LC50:
CAS# 135-98-8: Draize test, rabbit, eye: 500 mg/24H Mild;
Draize test, rabbit, skin: 100 mg/24H Moderate;
Oral, mouse: LD50 = 8700 mg/kg;
Oral, rat: LD50 = 2240 uL/kg;
Oral, rat: LD50 = 6300 mg/kg;
Skin, rabbit: LD50 = >16 mL/kg;
.

Carcinogenicity: sec-Butylbenzene - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Not available

Section 13 - Disposal Considerations

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

Section 14 - Transport Information

US DOT
Shipping Name: BUTYL BENZENES
Hazard Class: 3
UN Number: UN2709
Packing Group: III
Canada TDG

Shipping Name: Not available
Hazard Class:
UN Number:
Packing Group:

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XI

Risk Phrases:

R 10 Flammable.

R 36/37/38 Irritating to eyes, respiratory system and skin.

Safety Phrases:

S 9 Keep container in a well-ventilated place.

S 16 Keep away from sources of ignition - No smoking.

S 33 Take precautionary measures against static discharges.

WGK (Water Danger/Protection)

CAS# 135-98-8: 1

Canada

CAS# 135-98-8 is listed on Canada's DSL List

Canadian WHMIS Classifications: B3, D2B

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

CAS# 135-98-8 is not listed on Canada's Ingredient Disclosure List.

US Federal

TSCA

CAS# 135-98-8 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date: 9/02/1997

Revision #9 Date 7/20/2009

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

SAFETY DATA SHEET

Revision Date 10-Feb-2015 **Revision Number** 1

1. Identification

Product Name **Selenium**

Cat No. : **AC419270000; AC419271000; AC419275000**

Synonyms None

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Entity / Business Name
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute oral toxicity	Category 3
Acute Inhalation Toxicity - Dusts and Mists	Category 3
Specific target organ toxicity - (repeated exposure)	Category 2

Label Elements

Signal Word
Danger

Hazard Statements
Toxic if swallowed
Toxic if inhaled
May cause damage to organs through prolonged or repeated exposure

Precautionary Statements
Prevention

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray

Response

Get medical attention/advice if you feel unwell

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician

Ingestion

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Rinse mouth

Storage

Store locked up
Store in a well-ventilated place. Keep container tightly closed

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

May cause long lasting harmful effects to aquatic life

3. Composition / information on ingredients

Component	CAS-No	Weight %
Selenium	7782-49-2	> 99.5

4. First-aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Inhalation Remove from exposure, lie down. Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Immediate medical attention is required.

Ingestion Do not induce vomiting. Never give anything by mouth to an unconscious person. Drink plenty of water. Call a physician immediately. If possible drink milk afterwards.

Most important symptoms/effects No information available.
Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Water spray. Carbon dioxide (CO_2). Dry chemical. chemical foam.

Unsuitable Extinguishing Media No information available

Flash Point No information available
Method - No information available

Autoignition Temperature No information available
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical

Vapors may form explosive mixtures with air.

Hazardous Combustion Products
None known
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
3	0	0	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment.
Environmental Precautions See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage.

Methods for Containment and Clean Up Sweep up or vacuum up spillage and collect in suitable container for disposal.

7. Handling and storage

Handling Avoid contact with skin and eyes. Do not breathe dust. Do not breathe vapors or spray mist. Use only in area provided with appropriate exhaust ventilation.

Storage Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep under nitrogen.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Selenium	TWA: 0.2 mg/m³	(Vacated) TWA: 0.2 mg/m³	IDLH: 1 mg/m³ TWA: 0.2 mg/m³

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Selenium	TWA: 0.2 mg/m³	TWA: 0.2 mg/m³	TWA: 0.2 mg/m³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection A NIOSH/MSHA approved air purifying dust or mist respirator or European Standard EN 149.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Powder Solid
Appearance	Grey
Odor	No information available
Odor Threshold	No information available
pH	No information available
Melting Point/Range	217 - 222 °C / 422.6 - 431.6 °F
Boiling Point/Range	685 °C / 1265 °F
Flash Point	No information available
Evaporation Rate	No information available
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	1 mmHg @ 345 °C
Vapor Density	No information available
Relative Density	4.810
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	Se
Molecular Weight	78.96

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products.

Incompatible Materials Acids, Strong oxidizing agents, Fluorine, oxygen, Metals

Hazardous Decomposition Products None under normal use conditions

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information No acute toxicity information is available for this product

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Selenium	6700 mg/kg (Rat)	Not listed	Not listed

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Selenium	7782-49-2	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known
STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available
Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity
Do not empty into drains.

Persistence and Degradability No information available
Bioaccumulation/ Accumulation No information available.

Mobility No information available.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT
- **UN-No** UN3283
- **Hazard Class** 6.1
- **Packing Group** III

TDG
- **UN-No** UN3283
- **Hazard Class** 6.1
- **Packing Group** III

IATA
- **UN-No** 3283
- **Proper Shipping Name** SELENIUM COMPOUND, SOLID, N.O.S.
- **Hazard Class** 6.1
- **Packing Group** III

IMDG/IMO
- **UN-No** 3283
- **Proper Shipping Name** SELENIUM COMPOUND, SOLID, N.O.S.
- **Hazard Class** 6.1
- **Packing Group** III

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Selenium	X	X	-	231-957-4	-		X	-	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Selenium	7782-49-2	> 99.5	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Selenium	-	-	X	X

Clean Air Act Not applicable

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Selenium	X		-

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Selenium	100 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Selenium	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class D1A Very toxic materials
D2B Toxic materials

16. Other information

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Revision Date 10-Feb-2015
Print Date 10-Feb-2015
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS

SAFETY DATA SHEET

Version 4.11
Revision Date 03/05/2015
Print Date 02/07/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Sodium

Product Number : 483745
Brand : Aldrich

CAS-No. : 7440-23-5

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Substances and mixtures, which in contact with water, emit flammable gases (Category 1), H260
Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318
Carcinogenicity (Category 1A), H350

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H260	In contact with water releases flammable gases which may ignite spontaneously.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H350	May cause cancer.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P223	Keep away from any possible contact with water, because of violent reaction and possible flash fire.

P231 + P232	Handle under inert gas. Protect from moisture.
P260	Do not breathe dust or mist.
P264	Wash skin thoroughly after handling.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P281	Use personal protective equipment as required.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P335 + P334	Brush off loose particles from skin. Immerse in cool water/ wrap in wet bandages.
P363	Wash contaminated clothing before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P402 + P404	Store in a dry place. Store in a closed container.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Reacts violently with water.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Formula : Na
Molecular weight : 22.99 g/mol

Hazardous components

Component		Classification	Concentration
Sodium			
CAS-No. EC-No. Index-No.	7440-23-5 231-132-9 011-001-00-0	Water-react. 1; Skin Corr. 1B; Eye Dam. 1; H260, H314	>= 90 - <= 100 %
Paraffin oils			
CAS-No. EC-No.	8012-95-1 232-384-2	Carc. 1A; H350	>= 90 - <= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.Continue rinsing eyes during transport to hospital.

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Dry powder

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.Keep away from sources of ignition - No smoking.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Never allow product to get in contact with water during storage.

Handle and store under inert gas. Air sensitive.
Storage class (TRGS 510): Hazardous materials, which set free flammable gases upon contact with water

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Paraffin oils	8012-95-1	STEL	10.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	10.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract irritation 2014 Adoption Not classifiable as a human carcinogen		
		Upper Respiratory Tract irritation 2014 Adoption Exposure by all routes should be carefully controlled to levels as low as possible. Suspected human carcinogen		
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Upper Respiratory Tract irritation Exposure by all routes should be carefully controlled to levels as low as possible. Suspected human carcinogen		
		TWA	5.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Not classifiable as a human carcinogen		
		TWA	5.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	10.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Upper Respiratory Tract irritation Exposure by all routes should be carefully controlled to levels as low as possible. Suspected human carcinogen		

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: Pieces
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 97.8 °C (208.0 °F) - lit.
f)	Initial boiling point and boiling range	883 °C (1,621 °F) - lit.
g)	Flash point	82 °C (180 °F)
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	0.97 g/cm3

n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Reacts violently with water.

10.4 Conditions to avoid
Air Do not allow water to enter container.
Exposure to moisture

10.5 Incompatible materials
Oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC: 1 - Group 1: Carcinogenic to humans (Paraffin oils)

NTP: Known to be human carcinogenThe reference note has been added by TD based on the background information of the NTP. (Paraffin oils)

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: Not available

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Aspiration may lead to:, lipid pneumonia, Effects due to ingestion may include:, laxative effect, Gastrointestinal disturbance, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1428 Class: 4.3 Packing group: I
Proper shipping name: Sodium
Reportable Quantity (RQ): 10 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1428 Class: 4.3 Packing group: I EMS-No: F-G, S-N
Proper shipping name: SODIUM

IATA
UN number: 1428 Class: 4.3 Packing group: I
Proper shipping name: Sodium
IATA Passenger: Not permitted for transport

15. REGULATORY INFORMATION

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

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

SARA 311/312 Hazards
Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Sodium	7440-23-5	1993-04-24
Paraffin oils	8012-95-1	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Sodium	7440-23-5	1993-04-24
Paraffin oils	8012-95-1	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Sodium	7440-23-5	1993-04-24
Paraffin oils	8012-95-1	2007-03-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Paraffin oils	8012-95-1	1987-02-27

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Carc.	Carcinogenicity
Eye Dam.	Serious eye damage
H260	In contact with water releases flammable gases which may ignite spontaneously.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H350	May cause cancer.
Skin Corr.	Skin corrosion
Water-react.	Substances and mixtures, which in contact with water, emit flammable gases

HMIS Rating

Health hazard:	3
Chronic Health Hazard:	*
Flammability:	4
Physical Hazard	2

NFPA Rating

Health hazard:	3
Fire Hazard:	4
Reactivity Hazard:	2
Special hazard.I:	W

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.11 Revision Date: 03/05/2015 Print Date: 02/07/2016

SAFETY DATA SHEET

Version 3.14
Revision Date 12/02/2015
Print Date 02/18/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Styrene

Product Number : 240869
Brand : Aldrich
Index-No. : 601-026-00-0

CAS-No. : 100-42-5

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 3), H226
Acute toxicity, Inhalation (Category 4), H332
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Carcinogenicity (Category 2), H351
Reproductive toxicity (Category 2), H361
Specific target organ toxicity - repeated exposure (Category 1), H372
Acute aquatic toxicity (Category 2), H401

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H226 Flammable liquid and vapour.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H351 Suspected of causing cancer.
H361 Suspected of damaging fertility or the unborn child.

H372	Causes damage to organs through prolonged or repeated exposure.
H401	Toxic to aquatic life.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Lachrymator.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	:	Phenylethylene Vinylbenzene
Formula	:	$C_8H_8C_8H_8$
Molecular weight	:	104.15 g/mol
CAS-No.	:	100-42-5
EC-No.	:	202-851-5
Index-No.	:	601-026-00-0

Hazardous components

Component	Classification	Concentration
Styrene		
	Flam. Liq. 3; Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2A; Carc. 2; Repr. 2; STOT RE 1; Aquatic Acute 2; H226, H315, H319, H332, H351, H361, H372, H401	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

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

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides
Container explosion may occur under fire conditions., Vapours may form explosive mixture with air.

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

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

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

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

Recommended storage temperature 2 - 8 °C

Light sensitive.
Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Styrene	100-42-5	TWA	50.000000 ppm 215.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	100.000000 ppm 425.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
	Remarks	See Table Z-2		
		TWA	100.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.15-1969		
		CEIL	200.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.15-1969		
		Peak	600.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.15-1969		
		TWA	20.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation Peripheral neuropathy Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		STEL	40.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation Peripheral neuropathy Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		TWA	100 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.15-1969		

		CEIL	200 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.15-1969		
		Peak	600 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.15-1969		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Styrene	100-42-5	Mandelic acid plus phenylglyoxylic acid	400mg/g Creatinine	Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			
		Styrene	0.2000 mg/l	In venous blood	ACGIH - Biological Exposure Indices (BEI)
		End of shift (As soon as possible after exposure ceases)			
		Mandelic acid plus phenylglyoxylic acid	400mg/g Creatinine	Urine	ACGIH - Biological Exposure Indices (BEI)
		End of shift (As soon as possible after exposure ceases)			
		Styrene	40 µg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
		End of shift (As soon as possible after exposure ceases)			

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 32 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid, clear Colour: colourless
b)	Odour	sweet
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -31 °C (-24 °F) - lit.
f)	Initial boiling point and boiling range	145 - 146 °C (293 - 295 °F) - lit.
g)	Flash point	32.0 °C (89.6 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 8.9 %(V) Lower explosion limit: 1.1 %(V)
k)	Vapour pressure	6 hPa (5 mmHg) at 20 °C (68 °F)
l)	Vapour density	3.6
m)	Relative density	0.906 g/cm3 at 25 °C (77 °F)
n)	Water solubility	0.05 g/l at 25 °C (77 °F) - slightly soluble
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	490.0 °C (914.0 °F) 480.0 °C (896.0 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

Relative vapour density	3.6

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.
Test for peroxide formation before distillation or evaporation. Test for peroxide formation or discard after 1 year.
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Vapours may form explosive mixture with air.Vapours may form explosive mixture with air.

10.4 Conditions to avoid
May polymerize on exposure to light.
Heat, flames and sparks.

10.5 Incompatible materials
Oxidizing agents, Copper

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - > 6,000 mg/kg

LC50 Inhalation - Rat - 4 h - 12,000 mg/m3

LD50 Dermal - Rat - male and female - > 2,000 mg/kg

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Skin irritation
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Eye irritation - 24 h

Respiratory or skin sensitisation
Maximisation Test (GPMT) - Guinea pig
Does not cause skin sensitisation.
(OECD Test Guideline 406)

Germ cell mutagenicity
Laboratory experiments have shown mutagenic effects.

Carcinogenicity

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

IARC:	2B - Group 2B: Possibly carcinogenic to humans (Styrene)
NTP:	Reasonably anticipated to be a human carcinogen (Styrene)
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
Suspected of damaging the unborn child. Suspected human reproductive toxicant

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard
No data available

Additional Information
RTECS: WL3675000

Dermatitis, Central nervous system depression, Nausea, Dizziness, Headache, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Endocrine system. -

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	NOEC - Pimephales promelas (fathead minnow) - 4 mg/l - 96 h
	LC50 - Pimephales promelas (fathead minnow) - 32 mg/l - 96 h
	LOEC - Pimephales promelas (fathead minnow) - 7.6 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 4.7 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	IC50 - Pseudokirchneriella subcapitata (green algae) - 1.4 mg/l - 72 h

12.2 Persistence and degradability

Biodegradability	aerobic - Exposure time 28 d Result: > 60 % - Readily biodegradable

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life.

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 2055 Class: 3 Packing group: III
Proper shipping name: Styrene monomer, stabilized
Reportable Quantity (RQ): 1000 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 2055 Class: 3 Packing group: III EMS-No: F-E, S-D
Proper shipping name: STYRENE MONOMER, STABILIZED

IATA
UN number: 2055 Class: 3 Packing group: III
Proper shipping name: Styrene monomer, stabilized

15. REGULATORY INFORMATION

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

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Styrene	100-42-5	2007-07-01

SARA 311/312 Hazards
Fire Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Styrene	100-42-5	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Styrene	100-42-5	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Styrene	100-42-5	2007-07-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Carc.	Carcinogenicity
Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquids
H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H351	Suspected of causing cancer.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H401	Toxic to aquatic life.

HMIS Rating

Health hazard:	1
Chronic Health Hazard:	*
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 3.14 Revision Date: 12/02/2015 Print Date: 02/18/2016

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MATHESON TRI-GAS, INC.
150 Allen Road Suite 302
Basking Ridge, New Jersey 07920
Information: 1-800-416-2505

Emergency Contact:
CHEMTREC 1-800-424-9300
Calls Originating Outside the US:
703-527-3887 (Collect Calls Accepted)

SUBSTANCE: TERT-BUTANOL

TRADE NAMES/SYNONYMS:
T-BUTANOL; 1,1-DIMETHYLETHANOL; TRIMETHYLCARBINOL; TRIMETHYLMETHANOL; TRIMETHYL METHANOL; BUTYL ALCOHOL; 2-METHYL-2-PROPANOL; TERT-BUTYL ALCOHOL; TRIMETHYL CARBINOL; UN 1120; C4H10O; 00230215; RTECS EO1925000

CHEMICAL FAMILY: aliphatic, alcohols

CREATION DATE: Dec 01 2003
REVISION DATE: Dec 11 2008

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: TERT-BUTANOL
CAS NUMBER: 75-65-0
PERCENTAGE: 100

3. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=2 FIRE=3 REACTIVITY=0

EMERGENCY OVERVIEW:
CHANGE IN APPEARANCE: hygroscopic
COLOR: colorless
PHYSICAL FORM: crystals, liquid
ODOR: pungent odor
MAJOR HEALTH HAZARDS: respiratory tract irritation, eye irritation, central nervous system depression
PHYSICAL HAZARDS: Flammable liquid and vapor. Vapor may cause flash fire.

POTENTIAL HEALTH EFFECTS:

INHALATION:
SHORT TERM EXPOSURE: irritation, nausea, vomiting, difficulty breathing, headache, drowsiness, dizziness, loss of coordination, blurred vision
LONG TERM EXPOSURE: no information on significant adverse effects
SKIN CONTACT:
SHORT TERM EXPOSURE: irritation
LONG TERM EXPOSURE: irritation
EYE CONTACT:
SHORT TERM EXPOSURE: irritation, blurred vision
LONG TERM EXPOSURE: irritation
INGESTION:
SHORT TERM EXPOSURE: nausea, vomiting, diarrhea, stomach pain, headache, drowsiness, dizziness, loss of coordination, unconsciousness
LONG TERM EXPOSURE: no information on significant adverse effects

4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

SKIN CONTACT: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

EYE CONTACT: Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: If a large amount is swallowed, get medical attention.

NOTE TO PHYSICIAN: For inhalation, consider oxygen.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Severe fire hazard. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Vapor/air mixtures are explosive.

EXTINGUISHING MEDIA: alcohol-resistant foam, carbon dioxide, regular dry chemical, water

Large fires: Use alcohol-resistant foam or flood with fine water spray.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Dike for later disposal. Do not scatter spilled material with high-pressure water streams. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Withdraw immediately in case of rising sound from

venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile). Do not attempt to extinguish fire unless flow of material can be stopped first. Flood with fine water spray. Do not scatter spilled material with high-pressure water streams. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

FLASH POINT: 52 F (11 C) (CC)
LOWER FLAMMABLE LIMIT: 2.4%
UPPER FLAMMABLE LIMIT: 8.0%
AUTOIGNITION: 892 F (478 C)
FLAMMABILITY CLASS (OSHA): IB

6. ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:
Avoid heat, flames, sparks and other sources of ignition. Remove sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Large spills: Dike for later disposal. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.

7. HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.106. Grounding and bonding required. Keep separated from incompatible substances.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:
TERT-BUTANOL:
TERT-BUTYL ALCOHOL:
100 ppm (300 mg/m3) OSHA TWA
150 ppm (450 mg/m3) OSHA STEL (vacated by 58 FR 35338, June 30, 1993)
100 ppm ACGIH TWA
100 ppm (300 mg/m3) NIOSH recommended TWA 10 hour(s)
150 ppm (450 mg/m3) NIOSH recommended STEL

VENTILATION: Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant gloves.

RESPIRATOR: The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.
1600 ppm
Any supplied-air respirator operated in a continuous-flow mode.
Any powered, air-purifying respirator with organic vapor cartridge(s).
Any air-purifying respirator with a full facepiece and an organic vapor canister.
Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted organic vapor canister.
Any self-contained breathing apparatus with a full facepiece.
Any supplied-air respirator with a full facepiece.
Emergency or planned entry into unknown concentrations or IDLH conditions -
Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.
Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.
Escape -
Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted organic vapor canister.
Any appropriate escape-type, self-contained breathing apparatus.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: liquid
COLOR: colorless
CHANGE IN APPEARANCE: hygroscopic
PHYSICAL FORM: crystals, liquid
ODOR: pungent odor
MOLECULAR WEIGHT: 74.12
MOLECULAR FORMULA: (C-H3)3-C-O-H
BOILING POINT: 180 F (82 C)
MELTING POINT: 79 F (26 C)
VAPOR PRESSURE: 31 mmHg @ 20 C
VAPOR DENSITY (air=1): 2.6
SPECIFIC GRAVITY (water=1): 0.7887
WATER SOLUBILITY: soluble
PH: Not available
VOLATILITY: Not available
ODOR THRESHOLD: 73 ppm

EVAPORATION RATE: 1.05 (butyl acetate=1)
VISCOSITY: 3.3 cP @ 30 C
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available
SOLVENT SOLUBILITY:
Soluble: alcohol, ether, acetone, benzene

10. STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat.

INCOMPATIBILITIES: metals, acids, oxidizing materials, combustible materials, metal salts

HAZARDOUS DECOMPOSITION:
Thermal decomposition products: oxides of carbon

POLYMERIZATION: Will not polymerize.

11. TOXICOLOGICAL INFORMATION

TERT-BUTANOL:
IRRITATION DATA: 500 ul/24 hour(s) skin-rabbit mild; 100 ul/24 hour(s) eyes-rabbit severe
TOXICITY DATA: >10000 ppm/4 hour(s) inhalation-rat LC50; >2 gm/kg skin-rabbit LD50; 2743 mg/kg oral-rat LD50
CARCINOGEN STATUS: ACGIH: A4 -Not Classifiable as a Human Carcinogen
LOCAL EFFECTS:
Irritant: inhalation, eye
ACUTE TOXICITY LEVEL:
Moderately Toxic: ingestion
TARGET ORGANS: central nervous system
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: kidney disorders, liver disorders, respiratory disorders, skin disorders and allergies
TUMORIGENIC DATA: Available.
MUTAGENIC DATA: Available.
REPRODUCTIVE EFFECTS DATA: Available.
ADDITIONAL DATA: Alcohol may enhance the toxic effects.

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:
FISH TOXICITY: 6410000 ug/L 96 hour(s) LC50 (Mortality) Fathead minnow (Pimephales promelas)

INVERTEBRATE TOXICITY: 5504000 ug/L 48 hour(s) EC50 (Immobilization) Water flea (Daphnia magna)

OTHER TOXICITY: 2450000 ug/L 48 hour(s) LC50 (Mortality) Clawed toad (Xenopus laevis)

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:
PROPER SHIPPING NAME: Butanols
ID NUMBER: UN1120
HAZARD CLASS OR DIVISION: 3
PACKING GROUP: II
LABELING REQUIREMENTS: 3

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:
SHIPPING NAME: Butanols
UN NUMBER: UN1120
CLASS: 3
PACKING GROUP/CATEGORY: II

15. REGULATORY INFORMATION

U.S. REGULATIONS:
CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): Not regulated.

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart B): Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart C): Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370 Subparts B and C):
ACUTE: Yes
CHRONIC: No
FIRE: Yes
REACTIVE: No

SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65):
TERT-BUTYL ALCOHOL

OSHA PROCESS SAFETY (29 CFR 1910.119): Not regulated.

STATE REGULATIONS:
California Proposition 65: Not regulated.

CANADIAN REGULATIONS:
WHMIS CLASSIFICATION: Not determined.

NATIONAL INVENTORY STATUS:
U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDSL): Not determined.

16. OTHER INFORMATION

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SAFETY DATA SHEET

Version 3.5
Revision Date 11/04/2015
Print Date 05/01/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : *tert*-Butylbenzene

Product Number : B90602
Brand : Aldrich

CAS-No. : 98-06-6

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 3), H226
Eye irritation (Category 2A), H319
Acute aquatic toxicity (Category 2), H401
Chronic aquatic toxicity (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H226 Flammable liquid and vapour.
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.

P264	Wash skin thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P391	Collect spillage.
P403 + P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms : 2-Methyl-2-phenylpropane

Formula : $C_{10}H_{14}$

Molecular weight : 134.22 g/mol

CAS-No. : 98-06-6

EC-No. : 202-632-4

Hazardous components

Component	Classification	Concentration
tert-Butylbenzene		
	Flam. Liq. 3; Eye Irrit. 2A; Aquatic Acute 2; Aquatic Chronic 2; H226, H319, H411	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

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

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

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

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Impervious clothing, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid, clear Colour: colourless
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -58 °C (-72 °F) - lit.
f)	Initial boiling point and boiling range	169 °C (336 °F) - lit.
g)	Flash point	34.0 °C (93.2 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower	Lower explosion limit: 0.8 %(V)

	flammability or explosive limits	
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	0.867 g/cm3 at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	log Pow: 3.80
p)	Auto-ignition temperature	450.0 °C (842.0 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Vapours may form explosive mixture with air.

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

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

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

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

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: CY9120000

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

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC0 - Leuciscus idus (Golden orfe) - 44 mg/l - 48.0 h
	LC50 - Leuciscus idus (Golden orfe) - 65 mg/l - 48.0 h
Toxicity to daphnia and other aquatic invertebrates	LC50 - Daphnia magna (Water flea) - 41 mg/l - 24 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

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

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

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

15. REGULATORY INFORMATION

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

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

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

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

New Jersey Right To Know Components

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

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquids

H226	Flammable liquid and vapour.
H319	Causes serious eye irritation.
H401	Toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	0

Further information

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Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 3.5 Revision Date: 11/04/2015 Print Date: 05/01/2016

SAFETY DATA SHEET

Version 4.17
Revision Date 03/03/2015
Print Date 02/18/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Trichlorofluoromethane

Product Number : 254991
Brand : Aldrich

CAS-No. : 75-69-4

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Dermal (Category 4), H312

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H312 Harmful in contact with skin.

Precautionary statement(s)
P280 Wear protective gloves/ protective clothing.
P302 + P352 + P312 IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell.
P363 Wash contaminated clothing before reuse.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms : Fluorotrichloromethane
CFC-11

Formula	:	CCl_3F CCl_3F
Molecular weight	:	137.37 g/mol
CAS-No.	:	75-69-4
EC-No.	:	200-892-3

Hazardous components

Component	Classification	Concentration
Trichlorofluoromethane		
	Acute Tox. 4; H312	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Hydrogen chloride gas, Hydrogen fluoride

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.
For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Recommended storage temperature 2 - 8 °C

Contents under pressure.
Storage class (TRGS 510): Non Combustible Liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Trichlorofluoromethane	75-69-4	C	1,000.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Cardiac sensitization Not classifiable as a human carcinogen		
		C	1,000.000000 ppm 5,600.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	1,000.000000 ppm 5,600.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		

8.2 Exposure controls

Appropriate engineering controls

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

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 480 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.2 mm
Break through time: 30 min

Material tested:Dermatril® P (KCL 743 / Aldrich Z677388, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

Control of environmental exposure
Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid, clear Colour: colourless
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	-110.99 - -109.99 °C (-167.78 - -165.98 °F)
f)	Initial boiling point and boiling range	23.7 °C (74.7 °F) - lit.
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	885.7 hPa (664.3 mmHg) at 20.0 °C (68.0 °F) 2,701.2 hPa (2,026.1 mmHg) at 55.0 °C (131.0 °F)
l)	Vapour density	No data available
m)	Relative density	1.494 g/cm3 at 25 °C (77 °F)
n)	Water solubility	1 g/l
o)	Partition coefficient: n-octanol/water	log Pow: 2.53
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available

t) Oxidizing properties No data available

9.2 Other safety information

Surface tension 18.0 mN/m at 25.0 °C (77.0 °F)

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing agents, Sodium/sodium oxides, Potassium, Magnesium, Aluminum, Zinc

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - > 15,000 mg/kg

LC50 Inhalation - Rat - 0.3 h - 130000 ppm
Remarks: Behavioral:Tremor. Behavioral:Convulsions or effect on seizure threshold. Respiratory disorder

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

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

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: PB6125000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated., Nausea, Dizziness, Headache, Vomiting, Diarrhoea, Abdominal pain, Weakness, Unconsciousness

Liver -

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3082 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (Trichlorofluoromethane)
Reportable Quantity (RQ): 5000 lbs

Poison Inhalation Hazard: No

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

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

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Trichlorofluoromethane	75-69-4	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Trichlorofluoromethane	75-69-4	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Trichlorofluoromethane	75-69-4	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Trichlorofluoromethane	75-69-4	2007-07-01

California Prop. 65 Components

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

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
H312	Harmful in contact with skin.

HMIS Rating

Health hazard:	1
Chronic Health Hazard:	
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	1
Fire Hazard:	0
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.17 Revision Date: 03/03/2015 Print Date: 02/18/2016

Safety Data Sheets (SDS)

SECTION 1-IDENTIFICATION

Product name: Toluene

Other names:-

Proper shipping name: Toluene

Recommended use of the chemical and restrictions on use:
The major use of toluene is as a mixture added to gasoline to improve octane ratings. Used as a solvent for paint, resins, lacquers inks & adhesives. Component of solvent blends and thinners. Used in the manufacture of chemicals, dyes, explosives, benzoic acid. Some grades of toluene may contain traces of xylene and benzene.
The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Before starting consider control of exposure by mechanical ventilation.
WARNING: Intentional misuse by concentrating/inhaling contents may be lethal.

Manufacturer/Supplier Name: Taiwan SM Corp., Kaohsiung plant
Address: NO.7, Industrial 1st Rd, Lin-Yuan Kaohsiung County 83203, Taiwan, R.O.C.
Phone No.: 886-7-6414511

Emergency phone No./Fax No.: 886-7-6414511 Ext. 221 (on duty), 886-7-6414517 (off duty)/886-7-6423828

SECTION 2-HAZARDS IDENTIFICATION

GHS Classification:

Flammable Liquid Category 2
Acute Toxicity (Oral) Category 4
Skin Corrosion/ Irritation Category 2
Serious Eye Damage/ Eye Irritation Category 2
Specific Target Organ Toxicity Repeated Exposure Category 2
Hazardous To The Aquatic Environment (Acute) Category 3
Aspiration Hazard Category 1

GHS Label elements:

Hazard symbols

Signal word

Danger

Hazard statements

Highly flammable liquid and vapor
Harmful if inhaled
Causes skin irritation
Causes serious eye irritation
May cause damage to organs through prolonged or repeated exposure.
May cause long lasting harmful effects to aquatic life.
May be fatal if swallowed and enters airways.

Precautionary statements

Use only in well ventilated area.
Control of exposure by mechanical ventilation in an unventilated or confined space.
Avoid breathing vapors and contact with skin and eyes.
Wear breathing apparatus/protective gloves/face protection.
Store in well-ventilated place.
Disposal must be in accordance with applicable federal, state, or local regulations.

Other hazards: —

SECTION 3-COMPOSITION/INFORMATION ON INGREDIENTS

CAS No.	Chemical Name	wt% by weight	EINECS No.
00108-88-3	Toluene	97.0 min.	203-625-9
Synonyms	**Methylbenzol; Methylbenzene; Toluol; Phenylmethane**		

SECTION 4-FIRST AID MEASURES

Description of necessary first aid measures

Eye:

1. Flush immediately with warm water for at least 20 minutes.
2. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
3. If pain persists or recurs seek medical attention.
4. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin:

1. Removing contaminated clothing, shoes, and leathery wearings, cleaning procedure is available before reused or waste treatment.
2. Washing affected area thoroughly with soap and water for at least 20 minutes.
3. Call a Physician if irritation develops or persists.

Ingestion:

1. If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomits.
2. If victim is conscious and alert, give 2～4 cupfuls of milk/water to dilute the substance in stomach.
3. Never give anything by mouth to an unconscious person.
4. Don't induce vomiting unless directed to do so by medical person.
5. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
6. Then seek for medical attention.

Inhalation:

1. Remove from further exposure and flush thoroughly with air.
2. Lay patient down. Keep warm and rested.
3. Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
4. If respiratory irritation, seek immediate medical assistance and call a physician.

Most important symptoms/effects, acute and delayed

Headache, fatigue, drowsiness, insomnia, anorexia and pain in limbs, nervousness, impairment of memory.

Indication of immediate medical attention and special treatment needed, if necessary

For acute or short term repeated exposures to toluene:

Inhalation:

1. Inhalation overexposure can produce toxic effects. Monitor for respiratory distress.
2. If cough or difficulty in breathing develops, evaluate for upper respiratory tract inflammation, bronchitis, and pneumonitis. Administer supplemental oxygen with assisted ventilation, as required.
3. This material (or a component) sensitizes the heart to the effects of sympathomimetic amines. Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in individuals exposed to this material.
4. Administration of sympathomimetic drugs should be avoided.

Ingestion:

1. If ingested, this material presents a significant aspiration and chemical pneumonitis hazard.
2. Induction of emesis is not recommended.
3. Consider activated charcoal and/or gastric lavage.
4. If patient is obtunded, protect the airway by cuffed endotracheal intubation or by placement of the body in a Trendelenburg and left lateral decubitus position.

SECTION 5-FIRE FIGHTING MEASURES

Extinguishing media

Foam、CO_2、Dry chemical、Water fog.

Specific hazards arising from the chemical

1. Liquid and vapor are highly flammable.
2. Severe fire hazard when exposed to heat, flame and/or oxidizers.
3. Vapor may travel a considerable distance to source of ignition.
4. Heating may cause expansion or decomposition leading to violent rupture of containers.
5. On combustion, may emit toxic fumes of carbon monoxide (CO).

Special protective equipment and precautions for fire-fighters

1. Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies.
2. Evacuate area and fight the fire from a maximum distance or use unmanned hose holders or monitor nozzles.
3. Cover pooling liquid with foam.
4. Containers can build pressure if exposed to radiant heat; cool adjacent containers with flooding quantities of water until well after the fire is out.
5. Withdraw immediately from the area if there is a rising sound from a venting safety device or discoloration of vessels, tanks, or pipelines.
6. Be aware that burning liquid will float on water.
7. Notify appropriate authorities of potential fire and explosion hazard if liquid enter sewers or waterways

SECTION 6-ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedure

1. Personal protective equipment (specified in Section 8)
   Eyes : Chemical safety goggles are recommended, and a face shield is added when needed.
   Skin : Wear appropriate protective gloves to avoid skin contact.
   Clothing: When direct contact is likely, use rubberized clothings, apron and boots.
   Respiratory : When limits are exceeded, wear a respirator approved by NIOSH/MSHA for protection against organic dust, mists and vapors.
2. Remove all sources of ignition. No smoking, naked lights or ignition sources. Ventilate area of leak or spill.
3. Keep unnecessary and unprotected personnel from entering. Evacuate personnel from the danger area. Consult with an expert about the emergency procedures.

Environmental precautions

1. Prevent spillage from entering drains, surface, and groundwater.
2. Contain and recover liquid when possible. Use non-sparking tools and equipment.
3. Collect liquid in an appropriate container or absorb with an inert material (e.g. vermiculite, dry sand, earth), and place in a chemical waste container.
4. Report the accidental spill/release to Local/State government.

Methods and materials for containment and cleaning up

Minor spill:

1. Remove all ignition sources.
2. Clean up all spills immediately.
3. Avoid breathing vapors and contact with skin and eyes.
4. Control personal contact by using protective equipment.
5. Contain and absorb small quantities with vermiculite or other absorbent material.
6. Wipe up.
7. Collect residues in a flammable waste container.

Major spill

1. Clear area of personnel and move upwind.
2. Alert emergency responders and tell them location and nature of hazard.
3. May be violently or explosively reactive.
4. Wear breathing apparatus plus protective gloves.
5. Prevent spillage from entering drains or water course.
6. No smoking, naked lights or ignition sources. Increase ventilation.
7. Stop leak if safe to do so.
8. Water spray or fog may be used to disperse/absorb vapor.
9. Contain spill with sand, earth or vermiculite.
10. Use only spark-free shovels and explosion proof equipment.
11. Collect recoverable product into labeled containers for recycling..
12. Absorb remaining product with sand, earth or vermiculite.
13. Collect solid residues and seal in labeled drums for disposal.
14. Wash area and prevent runoff into drains.
15. If contamination of drains or waterways occurs, advise emergency services.

SECTION 7-HANDLING AND STORAGE

Precautions for safe handling

1. Wash thoroughly after handling.
2. Use only in well ventilated area.
3. Ground and bond containers when transferring.
4. Use spark-free tools and explosion proof equipment.
5. Empty containers retain product residue (liquid/vapor), and can be dangerous.
6. Do not pressurize, cut, weld, braze, solder, drill, or expose empty containers to heat, sparks or open flames.

Conditions for safe storage, including any incompatibilities

1. Store in original containers in approved flame-proof area.
2. No smoking, naked lights, heat or ignition sources.
3. DO NOT store in pits, depressions, basements or areas where vapors may be trapped.
4. Keep containers securely sealed.
5. Store away from incompatible materials in a cool, dry well ventilated area.
6. Protect containers against physical damage and check regularly for leaks.
7. Keep containers tightly closed and store in a cool, dry, well-ventilated place, plainly labeled, and out of closed vehicles.
8. Ground all equipment containing this material.
9. Observe manufacturer's storing and handling recommendations.
10. Containers should be able to withstand pressures expected from warming and cooling in storage. This flammable liquid should be stored in a separate safety cabinet or room. A refrigerated room is preferable for materials with a flash point temperature lower than 70°F (21°C).

SECTION 8-EXPOSURE CONTROLS, PERSONAL PROTECTION

OSHA - Final PELs : 200 ppm TWA.
OSHA Ceiling : 300ppm.
ACGIH : 50 ppm, skin -potential forcutaneous absorption.
NIOSH : 100 ppm TWA; 375 mg/m^3 TWA; 500 ppm IDLH.
Taiwan TWA : 100 ppm (skin).
Taiwan STEL : 125 ppm (skin).
Taiwan Ceiling : -------.
Taiwan BEI : 1 mg/l (before on duty).

Engineering control

1. Process should be located at least 17 meter (50 feet) away from open flames and all high temperature operations likely to cause ignition of the styrene monomer vapor.
2. In venting styrene monomer vapors, consideration should be given to possible halogenation of the vapors by low concentrations of free chlorine and bromine with the resultant formation of lacrimations.
3. Process should be designed so that the operator is not exposed to direct contact with Toluene or the vapor. The technical problems of designing equipment, providing adequate ventilation and operating procedures which promise maximum security and economy, can best be handled by competent engineers.
4. It is essential for safety that equipment be used and maintained as recommended by the manufacturer.
5. Tanks used to store or process Toluene should be closed vessels vented to a safe point of discharge in the outside atmosphere away from operating stations, roadways, and at least 17 meter (50 feet) from possible sources of ignitions. All sparks, flames, heated surface, or other sources of ignition should be kept away from all vents. It is advisable, to provide suction on vessels when inspection or observation openings are made, to minimize or eliminate escape of vapors.

Personal protective equipment

Eye Protection:
Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. Chemical goggles should be worn during transfer operations or when there is a likelihood of misting, splashing, or spraying of this material. A suitable emergency eye wash water and safety shower should be located near the work station.

Skin protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Clothing:
Avoid skin contact. Wear long-sleeved fire-retardant garments (e.g., Nomex®) while working with flammable and combustible liquids. Additional chemical-resistant protective gear may be required if splashing or spraying conditions exist. This may include an apron, boots and additional facial protection. If product comes in contact with clothing, immediately remove soaked clothing and shower. Promptly remove and discard contaminated leather goods.

Respirators:
For known vapor concentrations above the occupational exposure guidelines (see below), use a NIOSH-approved organic vapor respirator if adequate protection is provided. Protection factors vary depending upon the type of respirator used. Respirators should be used in accordance with OSHA requirements (29 CFR 1910.134). For airborne vapor concentrations that exceed the recommended protection factors for organic vapor respirators, use a full-face, positive-pressure, supplied air respirator. Due to fire and explosion hazards, do not enter atmospheres containing concentrations greater than 10% of the lower flammable limit of this product.

SECTION 9-PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Transparent liquid	Upper/lower explosive limits : 1.2%～7.1%
Odour : pleasant aromatic petroleum odour	Vapor Pressure : 22 mmHg @20℃/68℉
Odour threshold : 0.16～37 ppm (detect) 1.9～69 ppm (recognition)	Vapor Density : 3.1 (air=1)
PH : Not available	Relative density : 0.86 (water=1)
Melting/Freezing Point : －95 ℃	Solubility in water : 54～58 mg/100 ml
Initial boiling point/boiling range : 110.6 ℃	Partition coefficient : 2.73 (n-octanol/water)
Flash point : 4.4 ℃ (closed cup)	Auto-ignition temperature : 480℃
Evaporation Rate : 2.24 (BuAc=1)	Decomposition temperature : Not available
Flammability (solid/gas) : Not available	Viscosity : 0.6 mPa.s max @20℃
Molecular Formula : $C_6H_5CH_3$	Molecular Weight : 92.056

SECTION 10-STABILITY AND REACTIVITY

Reactivity
Vapor is explosive when exposed to heat or flame

Chemical stability
Stable at room temperature in closed containers under normal storage and handling conditions.

Possibility of hazardous reaction
Has not been reported.

Condition to avoid
Product is highly flammable – Keep away from sources of ignition. Avoid the higher temperatures. Keep away from open fire, heating elements and heat radiating surface and prevent from forming of the vapours mixtures with air in explosion limits.

Incompatible materials
Heat, flame, strong oxidizers, nitric and sulfuric acids, chlorine, nitrogen tetraoxide; will attack some forms of plastics, rubber, coatings.

Hazardous decomposition products
Carbon monoxide, carbon dioxide, hydrocarbons.

SECTION 11-TOXICOLOGICAL INFORMATION

Routes of exposure
Eye, Skin, inhalation, Ingestion.

Symptoms (treatments as indicated in Section 4)
Eye: The liquid produces a high level of eye discomfort and is capable of causing pain and severe conjunctivitis. Corneal injury may develop, with possible permanent impairment of vision, if not promptly and adequately treated. There is evidence that material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Severe inflammation may be expected with pain. There may be damage to the cornea. Unless treatment is prompt and adequate there may be permanent loss of vision. Conjunctivitis can occur following repeated exposure.

Skin: Contact with the material may damage the health of the individual; systemic effects may result following absorption. The material may cause moderate inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterized by redness, swelling and blistering. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

Ingestion: Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual. Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733). Considered an unlikely route of entry in commercial/industrial environments. The liquid may produce gastrointestinal discomfort and may be harmful if swallowed. Ingestion may result in nausea, pain and vomiting. Vomit entering the lungs by aspiration may cause potentially lethal chemical pneumonitis.

Inhalation: Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual. There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo. Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination. If exposure to highly concentrated solvent atmosphere is prolonged this may lead to narcosis, unconsciousness, even coma and possible death. The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Before starting consider control of exposure by mechanical ventilation.

Chronic exposure: There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

Toxicity
LD50: <870 mg/kg (rat, oral)
LC50: 6000 ppm/6h (rat, inhalation)

Chronic effect
Carcinogenicity:
ACGIH : A4-Not classifiable as a Human Carcinogen.
OSHA : Possible select carcinogen.
IARC : Group 3 carcinogen.

Epide miology: Not available.

Teratogenicity: Teratogenic effects have occurred in experimental animals.

Reproductive Effects: Adverse reproductive effects have occurred in experimental animals.

Neurotoxicity: Not available.

Mutagenicity: Not available.

SECTION 12-ECOLOGICAL INFORMATION

Ecotoxicity
LC_{50} (96 hr.) Fish: 7.3～22.8 mg/l
EC_{50} (48 hr.) Water flea: —
Biocencentration factor (BCF): 1.67～380

Persistence and degradability
1. The material are expected to form a slick on the surface of waters after release in calm sea conditions. This is expected to evaporate and enter the atmosphere where it will be degraded through reaction with hydroxyl radicals.
2. Some of the material will become associated with benthic sediments, and it is likely to be spread over a fairly wide area of sea floor. Marine sediments may be either aerobic or anaerobic. The material, in probability, is biodegradable, under aerobic conditions. Evidence also suggests that the hydrocarbons may be degradable under anaerobic conditions although such degradation in benthic sediments may be a relatively slow process.
3. Under aerobic conditions the material will degrade to water and carbon dioxide, while under aerobic processes it will produce water, methane, carbon dioxide and carbon dioxide.
4. Based on test results, as well as theoretical considerations, the potential for bioaccumulation may be high. Toxic effects are often observed in species such as blue mussel, daphnia, freshwater green algae, marine copepods and amphipods.

Half-life (Air): 10～104 hr
Half-life (Surface water): 96～528 hr
Half-life (Ground water): 168～672 hr
Half-life (Soil): 96～528 hr

Bioaccumulative potential
This material is not expected to significantly bioaccumulate.

Mobility in soil: —

Other adverse effects: —

SECTION 13-DISPOSAL CONSIDERATIONS

Residues and spilled material are hazardous waste due to ignitability. Disposal must be in accordance with applicable federal, state, or local regulations.
The container for this product can present explosion or fire hazards, even when emptied. To avoid risk of injury, do not cut, puncture, or weld on or near this container. Since the emptied containers retain product residue, follow label warnings even after container is emptied.

SECTION 14-TRANSPORTATION INFORMATION

US DOT	Shipping Name	Toluene	Hazard Labels	
	Hazard Class	3		
	UN Number	1294		
	Packing Group	II		
Sea(IMO/IMDG)	Shipping Name	Toluene	Hazard Labels	
	Hazard Class	3.2		
	UN Number	1294		
	Packing Group	II		
	IMDG Code Page	3285		
	MARPOL	Not a DOT "Marine Pollutant" per 49 CFR 171.8.		
Air(ICAO/IATA)	Shipping Name	Toluene	Hazard Labels	
	Hazard Class	3.2		
	Subsidiary Class	1294		
	Packing Group	II		
RID/ ADR	No information available.			
Canadian TDG	Shipping Name	Toluene	Hazard Labels	
	Hazard Class	3		
	UN Number	1294		
	Packing Group	II		
	Subsidiary Class	9.2		

SECTION 15-REGULATORY INFORMATION

US FEDERAL

TSCA

CAS# 108-88-3 is listed on the TSCA inventory.

Health & Safety Reporting List

CAS# 108-88-3: Effective Date: 10/4/82; Sunset Date: 10/4/92

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA

Section 302 (RQ)

CAS# 108-88-3 : final RQ = 1000 pounds (454 kg)

Section 302 (TPQ)

None of the chemicals in this material have a TPQ.

SARA Codes

CAS# 108-88-3 : acute, flammable.

Section 313

This material contains Toluene (CAS# 108-88-3, 99% & 100%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 372.

Clean Air Act

CAS# 108-88-3 is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act

CAS# 108-88-3 is listed as a Hazardous Substance under the CWA.
CAS# 108-88-3 is listed as a Priority Pollutant under the Clean Water Act.
CAS# 108-88-3 is listed as a Toxic Pollutant under the Clean Water Act.

OSHA

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

Toluene can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

WARNING: This product contains Toluene, a chemical known to the state of California to cause birth defects or other reproductive harm.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN F
Risk Phrases : R 10 Flammable.
R 20 Harmful by inhalation.
Safety Phrases : S 9 Keep container in a well-ventilated place.
S 16 Keep away from sources of ignition - No smoking.
S 25 Avoid contact with eyes.
S 29 Do not empty into drains.
S 33 Take precautionary measures against static discharges.

WGK (Water Danger/Protection)

CAS# 108-88-3: 2

United Kingdom Occupational Exposure Limits

CAS# 108-88-3: OES-United Kingdom, TWA 50 ppm TWA; 191 mg/m3 TWA.
CAS# 108-88-3: OES-United Kingdom, STEL 150 ppm STEL; 574 mg/m3 STEL.

CANADA

CAS#100-42-5 is listed on Canada's DSL/NDSL list.
This product has a WHMIS classification of B2, D2A (99%)/B3, D2A (100%).
CAS# 105-05-5 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits

- CAS# 108-88-3: OEL-AUSTRALIA:TWA 100 ppm (375 mg/m3);STEL 150 ppm (560 mg/m3)
- OEL-BELGIUM:TWA 100 ppm (377 mg/m3);STEL 150 ppm (565 mg/m3)
- OEL-CZECHOSLOVAKIA:TWA 200 mg/m3;STEL 1000 mg/m3
- OEL-DENMARK:TWA 50 ppm (190 mg/m3);Skin
- OEL-FINLAND:TWA 100 ppm (375 mg/m3);STEL 150 ppm; Skin
- OEL-FRANCE:TWA 100 ppm (375 mg/m3);STEL 150 ppm (560 mg/m3)
- OEL-GERMANY:TWA 100 ppm (380 mg/m3)
- OEL-HUNGARY:TWA 100 mg/m3;STEL 300 mg/m3;Skin
- OEL-JAPAN:TWA 100 ppm (380 mg/m3)
- OEL-THE NETHERLANDS:TWA 100 ppm (375 mg/m3);Skin
- OEL-THE PHILIPPINES:TWA 100 ppm (375 mg/m3)
- OEL-POLAND:TWA 100 mg/m3
- OEL-RUSSIA:TWA 100 ppm; STEL 50 mg/m3
- OEL-SWEDEN:TWA 50 ppm (200 mg/m3);STEL 100 ppm (400 mg/m3);Skin
- OEL-SWITZERLAND:TWA 100 ppm (380 mg/m3);STEL 500 ppm
- OEL-THAILAND:TWA 200 ppm; STEL 300 ppm
- OEL-TURKEY:TWA 200 ppm (750 mg/m3)
- OEL-UNITED KINGDOM:TWA 100 ppm (375 mg/m3);STEL 150 ppm; Skin OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

SECTION 16-OTHER INFORMATION

References and sources

1. CHEMINFO Data Bank, CCINFO CD, 2005-3
2. HAZARD TEXT Data Bank, TOMES PLUS CD, Vol.65, 2005
3. RETECS Data Bank, TOMES CPS CD, Vol.65, 2005
4. HSDB Data Bank, TOMES CPS CD, Vol.65, 2005
5. Hazardous Substance Data Bank, Environment Protection, Administration, Executive Yuan, ROC (Taiwan)
6. Chemwatch Data Bank, 2005-1
7. SDS, GHS in Taiwan, Council of Labor Affairs, Executive Yuan, ROC (Taiwan)

Version	Date	Remark
Version 1	06/01/1998	Original Version.
Version 2	04/20/2001	Updated 10 sections to 16 sections.
Version 3	08/01/2003	Updated “SECTION 9-PHYSICAL AND CHEMICAL PROPERTIES”.
Version 4	01/01/2006	Updated “SECTION 14-TRANSPORTATION INFORMATION”.
Version 5	08/05/2008	Updated each section by GHS SDS.
Prepared by	Safety & Environment Protection Section, Taiwan SM Corporation Kaohsiung Plant.	

SAFETY DATA SHEET

Version 4.10
Revision Date 05/27/2016
Print Date 01/23/2017

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : *trans*-1,2-Dichloroethene

Product Number : 48527
Brand : Supelco
Index-No. : 602-026-00-3

CAS-No. : 156-60-5

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2), H225
Acute toxicity, Inhalation (Category 4), H332
Acute aquatic toxicity (Category 3), H402
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H225 Highly flammable liquid and vapour.
H332 Harmful if inhaled.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.

P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P312	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P403 + P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms : *trans*-1,2-Dichloroethene
trans-1,2-Dichloroethylene
trans-Acetylene dichloride

Formula : $C_2H_2Cl_2$
Molecular weight : 96.94 g/mol
CAS-No. : 156-60-5
EC-No. : 205-860-2
Index-No. : 602-026-00-3

Hazardous components

Component	Classification	Concentration
trans-Dichloroethylene		
	Flam. Liq. 2; Acute Tox. 4; Aquatic Acute 3; Aquatic Chronic 3; H225, H332, H412	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

In case of eye contact
Flush eyes with water as a precaution.

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Use explosion-proof equipment.Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature 2 - 8 °C

Light sensitive. Air and moisture sensitive. Refrigerate before opening.
Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
trans-Dichloroethylene	156-60-5	TWA	200.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Central Nervous System impairment Eye irritation		

		TWA	200.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Eye irritation		
		TWA	200 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Eye irritation		

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid, clear Colour: light yellow
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -50 °C (-58 °F) - lit.
f)	Initial boiling point and boiling range	48 °C (118 °F) - lit.
g)	Flash point	6.0 °C (42.8 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or	Upper explosion limit: 12.8 %(V) Lower explosion limit: 9.7 %(V)

	explosive limits	
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	1.257 g/cm3 at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Vapours may form explosive mixture with air.

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Oxidizing agents, Bases

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides, Hydrogen chloride gas
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 1,235 mg/kg

LD50 Oral - Mouse - 2,122 mg/kg
Remarks: Behavioral:Altered sleep time (including change in righting reflex). Behavioral:Somnolence (general depressed activity). Behavioral:Ataxia.

LC50 Inhalation - Rat - 24100 ppm
Remarks: Behavioral:Somnolence (general depressed activity).

LD50 Dermal - Rabbit - > 5,000 mg/kg
Remarks: Prolonged skin contact may cause skin irritation and/or dermatitis. Nutritional and Gross Metabolic:Weight loss or decreased weight gain.

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Skin irritation - 24 h

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Eye irritation

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

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

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: Not available

prolonged or repeated exposure can cause:, narcosis, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Kidney -

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 220.00 mg/l - 48 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life with long lasting effects.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 1150 Class: 3 Packing group: II
Proper shipping name: 1,2-Dichloroethylene
Reportable Quantity (RQ): 1000 lbs

Poison Inhalation Hazard: No

IMDG

UN number: 1150 Class: 3 Packing group: II EMS-No: F-E, S-D
Proper shipping name: 1,2-DICHLOROETHYLENE

IATA

UN number: 1150 Class: 3 Packing group: II
Proper shipping name: 1,2-Dichloroethylene

15. REGULATORY INFORMATION

SARA 302 Components

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

SARA 313 Components

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

SARA 311/312 Hazards

Fire Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
trans-Dichloroethylene	156-60-5	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
trans-Dichloroethylene	156-60-5	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
trans-Dichloroethylene	156-60-5	1993-04-24

California Prop. 65 Components

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

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H332	Harmful if inhaled.
H402	Harmful to aquatic life.

HMIS Rating

Health hazard:	1
Chronic Health Hazard:	*
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.10 Revision Date: 05/27/2016 Print Date: 01/23/2017

SAFETY DATA SHEET

Version 4.6
Revision Date 03/02/2015
Print Date 02/18/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Trichloroethylene

Product Number : 251402
Brand : Sigma-Aldrich
Index-No. : 602-027-00-9

CAS-No. : 79-01-6

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Germ cell mutagenicity (Category 2), H341
Carcinogenicity (Category 1B), H350
Specific target organ toxicity - single exposure (Category 3), Central nervous system, H336
Acute aquatic toxicity (Category 3), H402
Chronic aquatic toxicity (Category 3), H412

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
H341 Suspected of causing genetic defects.
H350 May cause cancer.
H412 Harmful to aquatic life with long lasting effects.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear eye protection/ face protection.
P280	Wear protective gloves.
P281	Use personal protective equipment as required.
P302 + P352	IF ON SKIN: Wash with plenty of soap and water.
P304 + P340 + P312	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	:	TCE Trichloroethene
Formula	:	C_2HCl_3
Molecular weight	:	131.39 g/mol
CAS-No.	:	79-01-6
EC-No.	:	201-167-4
Index-No.	:	602-027-00-9

Hazardous components

Component	Classification	Concentration
Trichloroethylene Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)		
	Skin Irrit. 2; Eye Irrit. 2A; Muta. 2; Carc. 1B; STOT SE 3; Aquatic Acute 3; Aquatic Chronic 3; H315, H319, H336, H341, H350, H412	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

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

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Hydrogen chloride gas

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Light sensitive. Handle and store under inert gas.
Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Trichloroethylene	79-01-6	TWA	10.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Central Nervous System impairment cognitive decrement Renal toxicity Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Suspected human carcinogen		
		STEL	25.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment cognitive decrement Renal toxicity Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Suspected human carcinogen		
		Potential Occupational Carcinogen See Appendix C See Appendix A		
		See Table Z-2		
		TWA	100.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.19-1967		
		CEIL	200.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.19-1967		
		Peak	300.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.19-1967		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Trichloroethylene	79-01-6	Trichloroacetic acid	15.0000 mg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift at end of workweek			
		Trichloroethanol	0.5000 mg/l	In blood	ACGIH - Biological Exposure Indices (BEI)
		End of shift at end of workweek			
		Trichloroethylene		In blood	ACGIH - Biological Exposure Indices (BEI)
		End of shift at end of workweek			
		Trichloroethylene		In end-exhaled air	ACGIH - Biological Exposure Indices (BEI)
		End of shift at end of workweek			

8.2 Exposure controls

Appropriate engineering controls

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

Personal protective equipment

Eye/face protection
Safety glasses with side-shields conforming to EN166 Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid, clear Colour: colourless
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -84.8 °C (-120.6 °F) - lit.
f)	Initial boiling point and boiling range	86.7 °C (188.1 °F) - lit.
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower	Upper explosion limit: 10.5 %(V)

	flammability or explosive limits	Lower explosion limit: 8 %(V)
k)	Vapour pressure	81.3 hPa (61.0 mmHg) at 20.0 °C (68.0 °F)
l)	Vapour density	No data available
m)	Relative density	1.463 g/mL at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	log Pow: 2.29log Pow: 5
p)	Auto-ignition temperature	410.0 °C (770.0 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Oxidizing agents, Strong bases, Magnesium

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 4,920 mg/kg

LC50 Inhalation - Mouse - 4 h - 8450 ppm

LD50 Dermal - Rabbit - > 20,000 mg/kg

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Severe skin irritation - 24 h

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Eye irritation - 24 h

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
Laboratory experiments have shown mutagenic effects.
In vitro tests showed mutagenic effects

Carcinogenicity

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

Possible human carcinogen

IARC:	1 - Group 1: Carcinogenic to humans (Trichloroethylene)
NTP:	Reasonably anticipated to be a human carcinogen (Trichloroethylene)
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: KX4550000

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, Exposure to and/or consumption of alcohol may increase toxic effects., Gastrointestinal disturbance, Kidney injury may occur., narcosis
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 41 mg/l - 96.0 h
	LOEC - other fish - 11 mg/l - 10.0 d
	NOEC - Oryzias latipes - 40 mg/l - 10.0 d
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 18.00 mg/l - 48 h
Toxicity to algae	IC50 - Pseudokirchneriella subcapitata (green algae) - 175.00 mg/l - 96 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
Does not bioaccumulate.

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Harmful to aquatic life with long lasting effects.

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

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

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1710 Class: 6.1 Packing group: III
Proper shipping name: Trichloroethylene
Reportable Quantity (RQ): 100 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1710 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: TRICHLOROETHYLENE

IATA
UN number: 1710 Class: 6.1 Packing group: III
Proper shipping name: Trichloroethylene

15. REGULATORY INFORMATION

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

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Trichloroethylene	79-01-6	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Trichloroethylene	79-01-6	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Trichloroethylene	79-01-6	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Trichloroethylene	79-01-6	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer. Trichloroethylene	CAS-No. 79-01-6	Revision Date 2011-09-01
WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.	CAS-No. 79-01-6	Revision Date 2011-09-01

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Carc.	Carcinogenicity
Eye Irrit.	Eye irritation
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H336	May cause drowsiness or dizziness.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H402	Harmful to aquatic life.

HMIS Rating

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

NFPA Rating

Health hazard:	2
Fire Hazard:	0
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.6 Revision Date: 03/02/2015 Print Date: 02/18/2016

SAFETY DATA SHEET

Version 5.8
Revision Date 03/13/2015
Print Date 01/29/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Vanadium(V) oxide

Product Number : 204854
Brand : Aldrich
Index-No. : 023-001-00-8

CAS-No. : 1314-62-1

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 4), H332
Serious eye damage (Category 1), H318
Germ cell mutagenicity (Category 2), H341
Reproductive toxicity (Category 2), H361
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Specific target organ toxicity - repeated exposure (Category 1), H372
Acute aquatic toxicity (Category 2), H401
Chronic aquatic toxicity (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H302 + H332 Harmful if swallowed or if inhaled
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H341 Suspected of causing genetic defects.
H361 Suspected of damaging fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.

H411	Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	O_5V_2
Molecular weight	:	181.88 g/mol
CAS-No.	:	1314-62-1
EC-No.	:	215-239-8
Index-No.	:	023-001-00-8

Hazardous components

Component	Classification	Concentration
Vanadium pentoxide		
	Acute Tox. 4; Eye Dam. 1; Muta. 2; Repr. 2; STOT SE 3; STOT RE 1; Aquatic Acute 2; Aquatic Chronic 2; H302 + H332, H318, H335, H341, H361, H372, H411	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

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

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Vanadium/vanadium oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Vanadium pentoxide	1314-62-1	C	0.100000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		C	0.500000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	Remarks	Ceiling limit is to be determined from breathing-zone air samples.		
		TWA	0.050000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Lower Respiratory Tract irritation Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans		
		TWA	0.05 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Lower Respiratory Tract irritation Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans		
		C	0.050000 mg/m3	USA. NIOSH Recommended Exposure Limits
		15 minute ceiling value		
		C	0.050000 mg/m3	USA. NIOSH Recommended Exposure Limits
		15 minute ceiling value		
		C	0.100000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Ceiling limit is to be determined from breathing-zone air samples.		
		C	0.500000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Ceiling limit is to be determined from breathing-zone air samples.		
		C	0.050000 mg/m3	USA. NIOSH Recommended Exposure Limits
		15 minute ceiling value		
		C	0.050000 mg/m3	USA. NIOSH Recommended Exposure Limits
		15 minute ceiling value		
		C	0.050000 mg/m3	USA. NIOSH Recommended Exposure Limits
		15 minute ceiling value		
		C	0.050000 mg/m3	USA. NIOSH Recommended Exposure Limits
		15 minute ceiling value		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Vanadium pentoxide	1314-62-1	Vanadium	0.0500 mg/g	In urine	
	Remarks	End of shift at end of workweek			

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: solid
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 690 °C (1,274 °F) - lit.
f)	Initial boiling point and boiling range	No data available
g)	Flash point	Not applicable

h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	3.35 g/mL at 25 °C (77 °F)
n)	Water solubility	904 g/l at 20 °C (68 °F) - OECD Test Guideline 105
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	The substance or mixture is not classified as oxidizing.

9.2 Other safety information

Solubility in other solvents	Ethanol - insoluble

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong acids

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
Harmful if swallowed. Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

LC50 Inhalation - Rat - female - 4 h - 2.21 mg/l
(OECD Test Guideline 403)

LC50 Dermal - Rat - > 2,500 mg/kg
(OECD Test Guideline 402)

No data available

Skin corrosion/irritation
Skin - in vitro assay
Result: No skin irritation

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Risk of serious damage to eyes.
(OECD Test Guideline 405)

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
Laboratory experiments have shown mutagenic effects.
In vitro tests showed mutagenic effects

Carcinogenicity

No data available

IARC:	2B - Group 2B: Possibly carcinogenic to humans (Vanadium pentoxide)
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
Possible risk of congenital malformation in the fetus.
Suspected human reproductive toxicant

No data available

Specific target organ toxicity - single exposure
May cause respiratory irritation.
Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Specific target organ toxicity - repeated exposure
Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard
No data available

Additional Information
RTECS: Not available

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

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 5.2 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates	LC50 - Daphnia magna (Water flea) - 1.52 mg/l - 48 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
Toxic to aquatic life with long lasting effects.
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 2862 Class: 6.1 Packing group: III
Proper shipping name: Vanadium pentoxide
Reportable Quantity (RQ): 1000 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 2862 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: VANADIUM PENTOXIDE
Marine pollutant:yes

IATA
UN number: 2862 Class: 6.1 Packing group: III
Proper shipping name: Vanadium pentoxide

15. REGULATORY INFORMATION

SARA 302 Components
The following components are subject to reporting levels established by SARA Title III, Section 302:

	CAS-No.	Revision Date
Vanadium pentoxide	1314-62-1	2007-07-01

SARA 313 Components

	CAS-No.	Revision Date
Vanadium pentoxide	1314-62-1	2007-07-01

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Vanadium pentoxide	1314-62-1	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Vanadium pentoxide	1314-62-1	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Vanadium pentoxide	1314-62-1	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Vanadium pentoxide	1314-62-1	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Vanadium pentoxide	1314-62-1	2007-09-28

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Eye Dam.	Serious eye damage
H302	Harmful if swallowed.
H302 + H332	Harmful if swallowed or if inhaled
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H401	Toxic to aquatic life.

HMIS Rating

Health hazard:	4
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	3
Fire Hazard:	0
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.8 Revision Date: 03/13/2015 Print Date: 01/29/2016

SAFETY DATA SHEET

Version 3.11
Revision Date 12/01/2015
Print Date 02/18/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Vinyl chloride

Product Number : 387622
Brand : Aldrich
Index-No. : 602-023-00-7

CAS-No. : 75-01-4

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable gases (Category 1), H220
Gases under pressure (Liquefied gas), H280
Carcinogenicity (Category 1A), H350

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.
H350 May cause cancer.

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P281 Use personal protective equipment as required.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P377	Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381	Eliminate all ignition sources if safe to do so.
P405	Store locked up.
P410 + P403	Protect from sunlight. Store in a well-ventilated place.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

May form explosive peroxides.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	:	Chloroethylene
Formula	:	C_2H_3Cl
Molecular weight	:	62.50 g/mol
CAS-No.	:	75-01-4
EC-No.	:	200-831-0
Index-No.	:	602-023-00-7

Hazardous components

Component	Classification	Concentration
Vinyl chloride		
	Flam. Gas 1; Press. Gas Liquefied gas; Carc. 1A; SA ; H220, H280, H350,	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

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

If inhaled

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

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

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

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides, Hydrogen chloride gas

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Clean up promptly by sweeping or vacuum.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid inhalation of vapour or mist.
Use explosion-proof equipment.Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

Contents under pressure. Light sensitive.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Vinyl chloride	75-01-4	TWA	1 ppm	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	1 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Liver damage Lung cancer Confirmed human carcinogen		
		STEL	5 ppm	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	1 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		STEL	5 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		See 1910.1017		
		Potential Occupational Carcinogen See Appendix A		

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Splash contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 120 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: Liquefied gas
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -153.8 °C (-244.8 °F) - lit.
f)	Initial boiling point and boiling range	-13.4 °C (7.9 °F) - lit.
g)	Flash point	-61.0 °C (-77.8 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or	Upper explosion limit: 33 %(V) Lower explosion limit: 3.6 %(V)

	explosive limits	
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	0.911 g/cm3 at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.
Contains the following stabiliser(s):
Hydroquinone (>=0 - <=0.0001 %)
Phenol (>=0 - <=0.01 %)

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Heat, flames and sparks. Extremes of temperature and direct sunlight.

10.5 Incompatible materials
Chemically active metals, Copper

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

LC50 Inhalation - Rat - 0.3 h - 180000 ppm
Remarks: Behavioral:Tremor. Behavioral:Convulsions or effect on seizure threshold. Respiratory disorder

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

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

Human carcinogen.

IARC: 1 - Group 1: Carcinogenic to humans (Vinyl chloride)

NTP: Known to be human carcinogen (Vinyl chloride)

OSHA: OSHA specifically regulated carcinogen (Vinyl chloride)

Reproductive toxicity
No data available

Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: KU9625000

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Central nervous system -
Stomach - Irregularities - Based on Human Evidence (Phenol)
Liver - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1086 Class: 2.1
Proper shipping name: Vinyl chloride, stabilized
Reportable Quantity (RQ): 1 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1086 Class: 2.1 EMS-No: F-D, S-U
Proper shipping name: VINYL CHLORIDE, STABILIZED

IATA
UN number: 1086 Class: 2.1
Proper shipping name: Vinyl chloride, stabilized
IATA Passenger: Not permitted for transport

15. REGULATORY INFORMATION

SARA 302 Components
The following components are subject to reporting levels established by SARA Title III, Section 302:

	CAS-No.	Revision Date
Phenol	108-95-2	2007-07-01
Hydroquinone	123-31-9	2007-07-01

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Vinyl chloride	75-01-4	2007-07-01

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Vinyl chloride	75-01-4	2007-07-01
Phenol	108-95-2	2007-07-01
Hydroquinone	123-31-9	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Vinyl chloride	75-01-4	2007-07-01
Phenol	108-95-2	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Vinyl chloride	75-01-4	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Vinyl chloride	75-01-4	2007-09-28

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

	May displace oxygen and cause rapid suffocation.
Carc.	Carcinogenicity
Flam. Gas	Flammable gases
H220	Extremely flammable gas.
H280	Contains gas under pressure; may explode if heated.
H350	May cause cancer.
Press. Gas	Gases under pressure
SA	Simple Asphyxiant

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	4
Physical Hazard	3

NFPA Rating

Health hazard:	2
Fire Hazard:	4
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 3.11 Revision Date: 12/01/2015 Print Date: 02/18/2016

SAFETY DATA SHEET
Xylene

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Date issued 11.11.2013

1.1. Product identifier

Product name	Xylene
Chemical name	Xylene
Synonyms	Xylol, dimethyl benzene, xylenol
REACH Reg No.	01-2119488216-32-0000
CAS no.	1330-20-7
EC no.	215-535-7
Index no.	601-022-00-9
Article no.	13000000

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/preparation For the preparation of paints and as a solvent. General purpose cleaner.

1.3. Details of the supplier of the safety data sheet

Manufacturer

Company name	Fred Holmberg & Co AB
Office address	Geijersgatan 8
Postal address	Box 60056
Postcode	S-216 10
City	Limhamn
Country	Sweden
Tel	+46 (0)40 15 79 20
Fax	+46 (0)40 16 22 95
E-mail	info@holmberg.se
Website	http://www.holmberg.se/en/

1.4. Emergency telephone number

Emergency telephone 112 (Europe)

SECTION 2: Hazards identification

2.1. Classification of substance or mixture

Classification according to 67/548/EEC or 1999/45/EC	Xi; R38 Xn; R20/21 R10
Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]	Flam. Liq. 3; H226; Acute tox. 4; H312; Skin Irrit. 2; H315; Acute tox. 4; H332;

2.2. Label elements

Hazard Pictograms (CLP)

Signal word	Danger
Hazard statements	H226 Flammable liquid and vapour. H312 Harmful in contact with skin. H315 Causes skin irritation. H332 Harmful if inhaled.
Precautionary statements	P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking. P233 Keep container tightly closed. P243 Take precautionary measures against static discharge. P280 Wear protective gloves/protective clothing/eye protection/face protection. P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P331 Do NOT induce vomiting. P403 + P235 Store in a well-ventilated place. Keep cool.

2.3. Other hazards

Other hazards	Not known.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Substance	Identification	Classification	Contents
Xylene	CAS no.: 1330-20-7 EC no.: 215-535-7 Index no.: 601-022-00-9	R10 Xn; R20/21 Xi; R38 Flam. Liq. 3; H226 Acute tox. 4; H332 Acute tox. 4; H312 Skin Irrit. 2; H315 Note : C	75 - 90 %
Ethylbenzene	CAS no.: 100-41-4 EC no.: 202-849-4 Index no.: 601-023-00-4 Synonyms: Ethylbenzene	F; R11 Xn; R20 Flam. Liq. 2; H225 Acute tox. 4; H332	10 - 25 %

Column headings	CAS no. = Chemical Abstracts Service; EU (Einecs or Elincs number) = European inventory of Existing Commercial Chemical Substances; Ingredient name = Name as specified in the substance list (substances that are not included in the substance list must be translated, if possible). Contents given in; %, %wt/wt, %vol/wt, %vol/vol, mg/m3, ppb, ppm, weight%, vol%
HH/HF/HE	T+ = Very toxic, T = Toxic, C = Corrosive, Xn = Harmful, Xi = Irritating, E = Explosive, O = Oxidizing, F+ = Extremly flammable, F = Very flammable, N = Environmental hazard

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.
Skin contact	Remove contaminated clothes and rinse skin thoroughly with water.
Eye contact	Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyes wide apart. Get medical attention if any discomfort continues.
Ingestion	NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! Do not induce vomiting. Rinse mouth with water. Get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Information for health personnel	Treat Symptomatically. Do not give victim anything to drink if he is

unconscious.

4.3. Indication of any immediate medical attention and special treatment needed

Specific details on antidotes	No recommendation given.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.

5.2. Special hazards arising from the substance or mixture

Fire and explosion hazards	Solvent vapours may form explosive mixtures with air.
Hazardous combustion products	Fire creates: Carbon monoxide (CO). Carbon dioxide (CO2).

5.3. Advice for firefighters

Fire fighting procedures	No specific fire fighting procedure given.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal protection measures	Ensure suitable personal protection (including respiratory protection) during removal of spillages in a confined area. Ventilate well. Stop leak if possible without risk. Avoid contact with skin and eyes. Do not breathe vapour.

6.2. Environmental precautions

Environmental precautionary measures	Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Cleaning method	Dam and absorb spillages with sand, earth or other non-combustible material.

6.4. Reference to other sections

Other instructions	No recommendation given.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling	Keep away from heat, sparks and open flame. Take precautionary measures against static discharges. Mechanical ventilation may be required.

Protective Safety Measures

Advice on general occupational hygiene	Provide easy access to water supply and eye wash facilities.

7.2. Conditions for safe storage, including any incompatibilities

Storage	Keep away from heat, sparks and open flame. Ground container and transfer equipment to eliminate static electric sparks. Store in a cool and well-ventilated place.

7.3. Specific end use(s)

Specific use(s)	Not entered.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

DNEL / PNEC

Method of testing	Contents
DNEL	Group: Industrial Exposure route: Inhalation Exposure frequency: Short term (acute) Critical Component: Etylbenzen Value: 289 mg/kg/dag

DNEL	Group: Industrial Exposure route: Inhalation Exposure frequency: Long term (repeated) Critical Component: Etylbenzen Type of effect: Systemic effect Value: 77 mg/kg/dag
DNEL	Group: Industrial Exposure route: Dermal Exposure frequency: Long term (repeated) Critical Component: Etylbenzen Type of effect: Systemic effect Value: 180 mg/kg/dag
DNEL	Group: Consumer Exposure route: Inhalation Exposure frequency: Long term (repeated) Critical Component: Etylbenzen Type of effect: Systemic effect Value: 14,8 mg/kg/dag
DNEL	Group: Consumer Exposure route: Dermal Exposure frequency: Long term (repeated) Critical Component: Etylbenzen Type of effect: Systemic effect Value: 108 mg/kg/dag
DNEL	Group: Consumer Exposure route: Oral Exposure frequency: Long term (repeated) Critical Component: Etylbenzen Type of effect: Systemic effect Value: 1,6 mg/kg/dag
DNEL	Group: Industrial Exposure route: Inhalation Exposure frequency: Short term (acute) Critical Component: xylen Value: 442 mg/kg/dag
DNEL	Group: Industrial Exposure route: Inhalation Exposure frequency: Long term (repeated) Critical Component: xylen Type of effect: Systemic effect Value: 221 mg/kg/dag
DNEL	Group: Industrial Exposure route: Dermal Exposure frequency: Long term (repeated) Critical Component: xylen Type of effect: Systemic effect Value: 3182 mg/kg/dag
DNEL	Group: Consumer Exposure route: Inhalation Exposure frequency: Short term (acute) Critical Component: xylen Value: 260 mg/kg/dag
DNEL	Group: Consumer Exposure route: Inhalation Exposure frequency: Long term (repeated) Critical Component: xylen Type of effect: Systemic effect

	Value: 65,3 mg/kg/dag
DNEL	Group: Consumer Exposure route: Dermal Exposure frequency: Long term (repeated) Critical Component: xylen Type of effect: Systemic effect Value: 1872 mg/kg/dag
DNEL	Group: Consumer Exposure route: Oral Exposure frequency: Long term (repeated) Critical Component: xylen Type of effect: Systemic effect Value: 12,5 mg/kg/dag
Exposure guidelines	Country of origin: Sverige Limit value type: NGV 200 mg/m3 OEL Short Term Value: 450 mg/m3 Source: Nationella hygieniska gränsvärden, AFS 2005:17
Other Information	Ovanstående NGV resp. KTV gäller både xylen och etylbenzen

8.2. Exposure controls

Occupational exposure limits: Provide adequate ventilation. Observe Occupational Exposure Limits and minimise the risk of inhalation of vapours. Protective gloves and goggles are recommended. Provide eyewash, quick drench.

Safety signs

Respiratory protection

Respiratory protection: Respiratory protection must be used if air contamination exceeds acceptable level. Use respiratory equipment with gas filter, type A2.

Hand protection

Hand protection: Use protective gloves. Chemical resistant gloves required for prolonged or repeated contact. Gloves of nitrile rubber, PVA or Viton are recommended.

Eye / face protection

Eye protection: Use safety goggles or face shield in case of splash risk.

Skin protection

Skin protection (except hands): Wear appropriate clothing to prevent any possibility of skin contact.

Hygiene / Environmental

Specific hygiene measures: Wash hands after contact.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Fluid.
Colour	Colourless.
Odour	Aromatic.
Comments, pH (as supplied)	Not relevant.
Melting point/melting range	Value: < -48 °C
Boiling point / boiling range	Value: 136-145 °C
Flash point	Value: 27 °C
Evaporation rate	Value: 13,5
Explosion limit	Value: 1-7,1 %
Vapour pressure	Value: 1 kPa Test temperature: 20 °C

Vapour density	Value: 3,7
Specific gravity	Value: 0,870 kg/m3 Test temperature: 20 °C
Solubility description	Soluble in: Organic solvents. Not soluble in water.
Partition coefficient: n-octanol/water	Value: 3,15
Spontaneous combustability	Value: > 432-530 °C
Viscosity	Value: < 0,90 mPas Method of testing: Kinematisk Test temperature: 25 °C

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity: Heating may cause a fire.

10.2. Chemical stability

Stability: Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions: Not known.

10.4. Conditions to avoid

Conditions to avoid: Avoid heat, flames and other sources of ignition.

10.5. Incompatible materials

Materials to avoid: Avoid contact with oxidising agents (e.g. nitric acid, peroxides and chromates). Strong acids.

10.6. Hazardous decomposition products

Hazardous decomposition products: Fire creates: Carbon monoxide (CO). Carbon dioxide (CO_2).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological Information:

Other toxicological data: Acute Toxicity (Oral LD50): mg/kg (oral rat) > 2000
Acute Toxicity (Inhalation LC50): mg/l (vapours) (4h) > 20
Acute Toxicity (Dermal LD50): mg/kg Rabbit > 2000

Toxicological data for substances

Potential acute effects

Inhalation	In high concentrations, vapours are narcotic and may cause headache, fatigue, dizziness and nausea. Icke klassificerad som aspirationstoxisk (Not classified as asp. tox.)
Skin contact	Prolonged or frequent contact may cause redness, itching, eczema and skin cracking. Defats the skin.
Eye contact	May irritate and cause redness and pain.
Ingestion	Ingestion of large amounts may cause unconsciousness. However, ingestion may cause nausea, headache, dizziness and intoxication. Ingestion may cause irritation of the gastrointestinal tract, vomiting and diarrhoea. May cause irritation to the mouth and throat.

Delayed effects / repeated exposure

Sensitisation	Not known.
Chronic effects	None known.

Carcinogenic, Mutagenic or Reprotoxic

Carcinogenicity	None.
Mutagenicity	Not known.
Teratogenic properties	Suspected of damaging the unborn child

Reproductive toxicity	Not known.

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic, fish	Value: 2 mg/l Method of testing: LC50 Fish, species: Roccus saxatilis Duration: 96h
Acute aquatic, algae	Value: > 3,2 mg/l Method of testing: IC50 Algae, species: Selenastrum Capricornum Duration: 72h
Acute aquatic, Daphnia	Value: 8,5 mg/l Method of testing: EC50 Daphnia, species: Daphnia magna Duration: 48h

12.2. Persistence and degradability

Persistence and degradability description	Lättnedbrytbar av biologiska organismer.
Chemical oxygen demand (COD)	Value: 5 Method of testing: COD
Biological oxygen demand (BOD)	Value: 0,55 Method of testing: BOD

12.3. Bioaccumulative potential

Bioaccumulative potential	Will not bio-accumulate.
Bioconcentration factor (BCF)	Value: 22 Method of testing: BCF

12.4. Mobility in soil

Mobility	The product is insoluble in water and will spread on the water surface.

12.5. Results of PBT and vPvB assessment

PBT assessment results	This substance is not classified as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects / Remarks	None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Specify the appropriate methods of disposal	Confirm disposal procedures with environmental engineer and local regulations. Absorb in vermiculite or dry sand and dispose of at a licenced hazardous waste collection point. Liquid components can be disposed of by incineration.
Product classified as hazardous waste	Yes
Packaging classified as hazardous waste	Yes

SECTION 14: Transport information

14.1. UN number

ADR	1307
RID	1307
IMDG	1307
ICAO/IATA	1307

14.2. UN proper shipping name

ADR	XYLENES

RID	XYLENES
IMDG	XYLENES
ICAO/IATA	XYLENES

14.3. Transport hazard class(es)

ADR	3
Hazard no.	30
RID	3
ADN	33
IMDG	3
ICAO/IATA	3

14.4. Packing group

ADR	III
RID	III
IMDG	III
ICAO/IATA	III

14.5. Environmental hazards

Comment	Not relevant.

14.6. Special precautions for user

EmS	F-E, S-D

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information

EC no.	215-535-7

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Other Label Information	Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 with amendments.
Legislation and regulations	Dangerous Substance Directive 67/548/EEC. The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (S.I 2009 No. 716). The List of Wastes (England) (Amendment) Regulations 2005. (SI 2005 No. 895). Avfallsförordningen (2011:927).

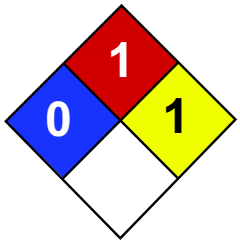
15.2. Chemical safety assessment

SECTION 16: Other information

Hazard symbol

R-phrases	R10 Flammable. R38 Irritating to skin. R20/22 Harmful by inhalation and if swallowed. R38 Irritating to skin.
S-phrases	S7 Keep container tightly closed. S16 Keep away from sources of ignition - No smoking.
Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]	Flam. Liq. 3; H226; Acute tox. 4; H312; Skin Irrit. 2; H315;

	Acute tox. 4; H332;
List of relevant R-phrases (under headings 2 and 3).	R38 Irritating to skin. R11 Highly flammable. R10 Flammable. R20/21 Harmful by inhalation and in contact with skin. R20 Harmful by inhalation.
List of relevant H-phrases (Section 2 and 3).	H332 Harmful if inhaled. H312 Harmful in contact with skin. H225 Highly flammable liquid and vapour. H226 Flammable liquid and vapour. H315 Causes skin irritation.
Responsible for safety data sheet	Fred Holmberg & Co AB



Material Safety Data Sheet
Zinc Metal MSDS

Section 1: Chemical Product and Company Identification

Product Name: Zinc Metal

Catalog Codes: SLZ1054, SLZ1159, SLZ1267, SLZ1099, SLZ1204

CAS#: 7440-66-6

RTECS: ZG8600000

TSCA: TSCA 8(b) inventory: Zinc Metal

CI#: Not applicable.

Synonym: Zinc Metal Sheets; Zinc Metal Shot; Zinc Metal Strips

Chemical Name: Zinc Metal

Chemical Formula: Zn

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Zinc Metal	7440-66-6	100

Toxicological Data on Ingredients: Zinc Metal LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated or prolonged exposure is not known to aggravate medical condition.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Skin Contact: Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.

Serious Skin Contact: Not available.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: 480°C (896°F)

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances:
Slightly flammable to flammable in presence of open flames and sparks, of heat, of oxidizing materials, of acids, of alkalis, of moisture. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
Flammable solid. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

Special Remarks on Fire Hazards:
Zinc + NaOH causes ignition. Oxidation of zinc by potassium proceeds with incandescence. Residues from zinc dust /acetic acid reduction operations may ignite after long delay if discarded into waste bins with paper. Incandescent reaction when Zinc and Arsenic or Tellurium, or Selenium are combined. When hydrazine mononitrate is heated in contact with zinc, a flamming decomposition occurs at temperatures a little above its melting point. Contact with acids and alkali hydroxides (sodium hydroxide, postasium hydroxide, calcium hydroxide, etc.) results in evolution of hydrogen with sufficient heat of reaction to ignite the hydrogen gas. Zinc foil ignites if traces of moisture are present. It is water reactive and produces flammable gases on contact with water. It may ignite on contact with water or moist air.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Flammable solid that, in contact with water, emits flammable gases. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Cover with dry earth, sand or other non-combustible material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7: Handling and Storage

Precautions:
Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not breathe dust. Keep away from incompatibles such as oxidizing agents, acids, alkalis, moisture.

Storage:
Keep container tightly closed. Keep container in a cool, well-ventilated area. Keep from any possible contact with water. Do not allow water to get into container because of violent reaction.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Lustrous solid. Metal solid.)

Odor: Not available.

Taste: Not available.

Molecular Weight: 65.39 g/mole

Color: Bluish-grey

pH (1% soln/water): Not applicable.

Boiling Point: 907°C (1664.6°F)

Melting Point: 419°C (786.2°F)

Critical Temperature: Not available.

Specific Gravity: Not available.

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Insoluble in cold water, hot water, methanol, diethyl ether, n-octanol, acetone.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, incompatible materials, moisture

Incompatibility with various substances:
Reactive with oxidizing agents, acids, alkalis. Slightly reactive to reactive with moisture. The product may react violently with water to emit flammable but non toxic gases.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Incompatible with acids, halogenated hydrocarbons, NH4NO3, barium oxide, Ba(NO3)2, Cadmium, CS2, chlorates, Cl2, CrO3, F2, Hydroxylamine, Pb(N3)2, MnCl2, HNO3, performic acid, KClO3, KNO3, N2O2, Selenium, NaClO3, Na2O2, Sulfur, Te, water, (NH4)2S, As2O3, CS2, CaCl2, chlorinated rubber, catalytic metals, halocarbons, o-nitroanisole, nitrobenzene, nonmetals, oxidants, paint primer base, pentacarbonoyliron, transition metal halides, seleninyl bromide, HCl, H2SO4, (Mg +Ba(NO3)2 +BaO2), (ethyl acetoacetate +tribromoneopentyl alcohol. Contact with Alkali Hydroxides(Sodium Hydroxide, Potassium Hydroxide, Calcium Hydroxide, etc) results in evolution of hydrogen. Ammonium nitrate + zinc + water causes a violent reaction with evolution of steam and zinc oxide. May react with water.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals:
LD50: Not available. LC50: Not available.

Chronic Effects on Humans: Not available.

Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: May cause skin irritation. Dermal exposure to zinc may produce leg pains, fatigue, anorexia and weight loss. Eyes: May cause eye irritation. Ingestion: May be harmul if swallowed. May cause digestive tract irritation with tightness in throat, nausea, vomiting, diarrhea, loss of appetite, malaise, abdominal pain. fever, and chills. May affect behavior/central nervous system and autonomic nervous system with ataxia, lethargy, staggering gait, mild derrangement in cerebellar function, lightheadness, dizzness, irritability, muscular stiffness, and pain. May also affect blood. Inhalation: Inhalation of zinc dust or fumes may cause respiratory tract and mucous membrane irritation with cough and chest pain. It can also cause "metal fume fever", a flu-like condition characterized appearance of chills, headached fever, maliase, fatigue, sweating, extreme thirst, aches in the legs and chest, and difficulty in breathing. A sweet taste may also be be present in metal fume fever, as well as a dry throat, aches, nausea, and vomiting, and pale grey cyanosis. The toxicological properties of this substance have not been fully investisgated.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: Not available.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations:
New York release reporting list: Zinc Metal Rhode Island RTK hazardous substances: Zinc Metal Pennsylvania RTK: Zinc Metal Florida: Zinc Metal Michigan critical material: Zinc Metal Massachusetts RTK: Zinc Metal New Jersey: Zinc Metal California Director's List of Hazardous Substances: Zinc Metal TSCA 8(b) inventory: Zinc Metal TSCA 12(b) one time export: Zinc Metal SARA 313 toxic chemical notification and release reporting: Zinc Metal CERCLA: Hazardous substances.: Zinc Metal: 1000 lbs. (453.6 kg)

Other Regulations: EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): Not Available

DSCL (EEC):
R15- Contact with water liberates extremely flammable gases. R17- Spontaneously flammable in air. S7/8- Keep container tightly closed and dry.

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 1

Reactivity: 1

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 0

Flammability: 1

Reactivity: 1

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 12:18 AM

Last Updated: 11/06/2008 12:00 PM

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MATERIAL SAFETY DATA SHEET

(POLYCHLORINATED BIPHENYLS)

COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients Name: polychlorinated biphenyls (PCBs)

HAZARD IDENTIFICATION

Reports of Carcinogenicity: YES

HEALTH HAZARDS ACUTE AND CHRONIC

- **Eyes**: Moderately irritating to eye tissues.
- **Skin**: Can be absorbed through intact skin, may cause de-fatting, potential for chloracne.
- **Inhalation**: Possible liver injury.
- **Ingestion**: Slightly toxic; reasonably anticipated to be carcinogenic.

EFFECTS OF OVER-EXPOSURE

Can cause dermatological symptoms; however, these are reversible upon removal of exposure source.

FIRST AID MEASURES

- **Eyes**: Irrigate immediately with copious quantities of running water for at least 15 minutes if liquid or solid PCBs get into them.
- **Skin:** Contaminated clothing should be removed and the skin washed thoroughly with soap and water. Hot PCBs may cause thermal burns.
- **Inhalation**: Remove to fresh air; if skin rash or respiratory irritation persists, consult a physician (if electrical equipment arcs over, PCBs may decompose to produce hydrochloric acid).
- **Ingestion**: Consult a physician. Do not induce vomiting or give any oily laxatives. (If large amounts are ingested, gastric lavage is suggested).

FIRE FIGHTING MEASURES: Flash Point: >141 ^{o}C (285.8 ^{o}F)

EXTINGUISHING MEDIA: PCBs are fire-resistant compounds.

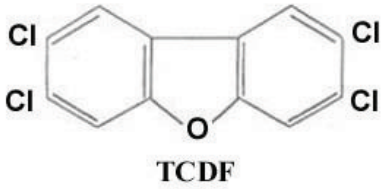
FIRE-FIGHTING PROCEDURES

Standard fire-fighting wearing apparel and self-contained breathing apparatus should be worn when fighting fires that involve possible exposure to chemical combustion products. Fire fighting equipment should be thoroughly cleaned and decontaminated after use.

UNUSUAL FIRE/EXPLOSION HAZARD

If a PCB transformer is involved in a fire-related incident, the owner of the transformer is required to report the incident. Consult and follow appropriate federal, provincial and local regulations.

***Note**: When askarel liquid becomes involved in a fire, toxic by-products of combustion are typically produced including polychlorinated dibenzofurans and polychlorinated dibenzodioxins, both known carcinogens. The structures of these chemical species are as follows:*

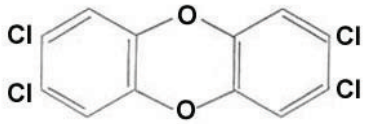


TCDF

$C_{12}H_{8-n}Cl_nO$

$n = 4 - 8$

2,3,7,8-tetrachlorodibenzofuran



TCDD

$C_{12}H_{8-n}Cl_nO_2$

$n = 4 - 8$

2,3,7,8-tetrachloro-dibenzo-p-dioxin

***Note**: 2,3,7,8-tetrachloro-dibenzo-p-dioxin is one of the most potent teratogenic, mutagenic and carcinogenic agents known to man.*

SPILL RELEASE PROCEDURES

Cleanup & disposal of liquid PCBs are strictly regulated by the federal government. Ventilate area. Contain spill/leak. Remove spill by means of absorptive material. Spill clean-up personnel should use proper protective clothing. All wastes and residues containing PCBs should be collected, containerized, marked and disposed of in the manner prescribed by applicable federal, provincial and local laws.

HANDLING AND STORAGE PRECAUTIONS

Care should be taken to prevent entry into the environment through spills, leakage, use, vaporization, or disposal of liquid. Avoid prolonged breathing of vapours or mists. Avoid contact with eyes or prolonged contact with skin. Comply with all federal, provincial and local regulations.

OTHER PRECAUTIONS

Federal regulations require PCBs, PCB items, storage areas, transformer vaults, and transport vehicles to be appropriately labelled.

RESPIRATORY PROTECTION

Use OHSA approved equipment when airborne exposure limits are exceeded. Full facepiece equipment is recommended and, if used, replaces need for face shield and/or chemical splash goggles. The respirator use limitations specified by the manufacturer must be observed.

VENTILATION

Provide natural or mechanical ventilation to control exposure levels below airborne exposure levels.

PROTECTIVE GLOVES: Wear appropriate chemical resistant gloves to prevent skin contact.

EYE PROTECTION: Wear chemical splash goggles and have eye baths available.

OTHER PROTECTIVE EQUIPMENT

Wear appropriate protective clothing. Provide a safety shower at any location where skin contact can occur.

WORK HYGIENIC PRACTICES

Wash thoroughly after handling. Supplemental safety and health : none

PHYSICAL/CHEMICAL PROPERTIES

- **Vapour pressure:** (mm Hg @100 ^{o}F) 0.005 - 0.00006
- **Viscosity:** (CENTISTOKES) 3.6 - 540
- **Stability indicator/materials to avoid:** Yes
- **Stability Condition to Avoid:** PCBs are very stable, fire-resistant compounds.

HAZARDOUS DECOMPOSITION PRODUCTS

Carbon monoxide, carbon dioxide, hydrogen chloride, phenolics, aldehydes, furans, dioxins

WASTE DISPOSAL METHODS

Consult the applicable PCB regulations prior to any disposal of PCBs or PCB-contaminated items.

SAFETY DATA SHEET

Version 4.10
Revision Date 11/12/2015
Print Date 02/07/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : *p*-Cresol

Product Number : W233706
Brand : Aldrich
Index-No. : 604-004-00-9

CAS-No. : 106-44-5

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 3), H301
Acute toxicity, Dermal (Category 3), H311
Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318
Acute aquatic toxicity (Category 2), H401
Chronic aquatic toxicity (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H301 + H311 Toxic if swallowed or in contact with skin
H314 Causes severe skin burns and eye damage.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P260 Do not breathe dust or mist.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.

P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310	Immediately call a POISON CENTER or doctor/ physician.
P322	Specific measures (see supplemental first aid instructions on this label).
P361	Remove/Take off immediately all contaminated clothing.
P363	Wash contaminated clothing before reuse.
P391	Collect spillage.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms : 4-Methylphenol

Formula : C_7H_8O

Molecular weight : 108.14 g/mol

CAS-No. : 106-44-5

EC-No. : 203-398-6

Index-No. : 604-004-00-9

Hazardous components

Component	Classification	Concentration
p-Cresol		
	Acute Tox. 3; Skin Corr. 1B; Eye Dam. 1; Aquatic Acute 2; Aquatic Chronic 2; H301 + H311, H314, H411	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Wear respiratory protection. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

hygroscopic Air and light sensitive. Handle and store under inert gas.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
p-Cresol	106-44-5	TWA	2.3 ppm 10 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	5 ppm 22 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	Remarks	Skin designation The value in mg/m3 is approximate.		

		TWA	20 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Not classifiable as a human carcinogen Danger of cutaneous absorption		

8.2 Exposure controls

Appropriate engineering controls
Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 480 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.2 mm
Break through time: 30 min
Material tested:Dermatril® P (KCL 743 / Aldrich Z677388, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: crystalline Colour: colourless
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing	Melting point/range: 31 - 37 °C (88 - 99 °F)

	point	Melting point/range: 32 - 34 °C (90 - 93 °F) - lit.
f)	Initial boiling point and boiling range	202 °C (396 °F) - lit.
g)	Flash point	85.0 °C (185.0 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Lower explosion limit: 1.1 %(V)
k)	Vapour pressure	1.3 hPa (1.0 mmHg) at 20.0 °C (68.0 °F)
l)	Vapour density	No data available
m)	Relative density	1.034 g/cm3 at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	log Pow: 1.94
p)	Auto-ignition temperature	559.0 °C (1,038.2 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Oxidizing agents, Bases

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 207.0 mg/kg
Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste):Olfaction:Other changes. Behavioral:Convulsions or effect on seizure threshold. Gastrointestinal:Ulceration or bleeding from stomach.

LC50 Inhalation - Rat - 1 h - > 710 mg/m3

LD50 Dermal - Rabbit - 301.0 mg/kg
Remarks: Behavioral:Tremor. Gastrointestinal:Changes in structure or function of salivary glands. Kidney, Ureter, Bladder:Other changes.

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Severe skin irritation - 24 h

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Severe eye irritation

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

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

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: GO6475000

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, laryngitis, Dizziness, Cardiovascular effects., Muscle cramps/spasms., Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and vomiting.

Kidney -

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - other fish - 16.00 - 24.00 mg/l - 24 h
	LC50 - Oncorhynchus mykiss (rainbow trout) - 7.9 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	LC50 - Daphnia magna (Water flea) - 1.4 mg/l - 48 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
Does not bioaccumulate.

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life.

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3455 Class: 6.1 (8) Packing group: II
Proper shipping name: Cresols, solid
Reportable Quantity (RQ): 100 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 3455 Class: 6.1 (8) Packing group: II EMS-No: F-A, S-B
Proper shipping name: CRESOLS, SOLID

IATA
UN number: 3455 Class: 6.1 (8) Packing group: II
Proper shipping name: Cresols, solid

15. REGULATORY INFORMATION

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

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
p-Cresol	106-44-5	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
p-Cresol	106-44-5	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
p-Cresol	106-44-5	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
p-Cresol	106-44-5	2007-07-01

California Prop. 65 Components

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

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Eye Dam.	Serious eye damage
H301	Toxic if swallowed.
H301 + H311	Toxic if swallowed or in contact with skin
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.

HMIS Rating

Health hazard:	3
Chronic Health Hazard:	
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	3
Fire Hazard:	2
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.10 Revision Date: 11/12/2015 Print Date: 02/07/2016

SAFETY DATA SHEET

Creation Date 01-May-2012 **Revision Date** 11-Aug-2014 **Revision Number** 1

1. Identification

Product Name **Phenanthrene**

Cat No. : **AC130090000; AC130090050; AC130090500; AC130095000**

Synonyms No information available

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Entity / Business Name
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute oral toxicity	Category 4

Label Elements

Signal Word
Warning

Hazard Statements
Harmful if swallowed

Precautionary Statements
Prevention
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Ingestion
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth

Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Very toxic to aquatic life with long lasting effects

3. Composition / information on ingredients

Component	CAS-No	Weight %
Phenanthrene	85-01-8	>95

4. First-aid measures

General Advice If symptoms persist, call a physician.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.

Skin Contact Obtain medical attention. Wash off immediately with plenty of water for at least 15 minutes.

Inhalation Move to fresh air. If breathing is difficult, give oxygen. Obtain medical attention.

Ingestion Clean mouth with water and drink afterwards plenty of water. Get medical attention if symptoms occur.

Most important symptoms/effects None reasonably foreseeable.
Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable Extinguishing Media No information available

Flash Point No information available
Method - No information available

Autoignition Temperature Not applicable
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous Combustion Products
Carbon monoxide (CO) Carbon dioxide (CO_2)
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
1	1	0	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment. Avoid dust formation.

Environmental Precautions Do not flush into surface water or sanitary sewer system. Do not allow material to contaminate ground water system. Prevent product from entering drains. Local authorities should be advised if significant spillages cannot be contained. See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage.

Methods for Containment and Clean Up Sweep up or vacuum up spillage and collect in suitable container for disposal. Keep in suitable, closed containers for disposal.

7. Handling and storage

Handling Wear personal protective equipment. Ensure adequate ventilation. Do not get in eyes, on skin, or on clothing. Avoid ingestion and inhalation. Avoid dust formation.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls / personal protection

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

- **Eye/face Protection** Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.
- **Skin and body protection** Long sleeved clothing.
- **Respiratory Protection** Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.
- **Hygiene Measures** Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Solid
Appearance	Beige
Odor	Odorless
Odor Threshold	No information available
pH	No information available
Melting Point/Range	95 - 101 °C / 203 - 213.8 °F
Boiling Point/Range	336 °C / 636.8 °F
Flash Point	No information available
Evaporation Rate	Not applicable
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	1 mmHg @ 116 °C
Vapor Density	Not applicable
Relative Density	1.063
Solubility	Insoluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	Not applicable
Decomposition temperature	No information available
Viscosity	Not applicable
Molecular Formula	C14 H10
Molecular Weight	178.23

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products. Excess heat. Avoid dust formation.

Incompatible Materials Strong oxidizing agents

Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO_2)

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Phenanthrene	1.8 g/kg (Rat)	Not listed	Not listed

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Phenanthrene	85-01-8	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known

STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. The product contains following substances which are hazardous for the environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea

Phenanthrene	Not listed	LC50 = 3.2 mg/L 96h	Not listed	LC50 = 0.35 mg/L 48h

Persistence and Degradability Insoluble in water May persist

Bioaccumulation/ Accumulation No information available.

Mobility . Is not likely mobile in the environment due its low water solubility.

Component	log Pow
Phenanthrene	4.46

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No UN3077
Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE,SOLID, N.O.S.
Hazard Class 9
Packing Group III

TDG

UN-No UN3077
Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE,SOLID, N.O.S.
Hazard Class 9
Packing Group III

IATA

UN-No UN3077
Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.*
Hazard Class 9
Packing Group III

IMDG/IMO

UN-No UN3077
Proper Shipping Name ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S.
Hazard Class 9
Packing Group III

15. Regulatory information

All of the components in the product are on the following Inventory lists: X = listed

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Phenanthrene	X	X	-	201-581-5	-		X	X	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Phenanthrene	85-01-8	>95	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Phenanthrene	-	-	X	X

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Phenanthrene	5000 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Phenanthrene	X	X	X	-	-

U.S. Department of Transportation

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class Non-controlled

16. Other information

Prepared By Regulatory Affairs

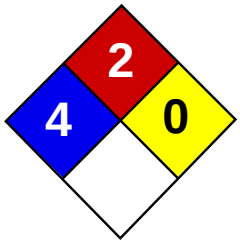
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Creation Date	01-May-2012
Revision Date	11-Aug-2014
Print Date	11-Aug-2014
Revision Summary	This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer

The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS



Material Safety Data Sheet
Phenol MSDS

Section 1: Chemical Product and Company Identification

Product Name: Phenol

Catalog Codes: SLP4453, SLP5251

CAS#: 108-95-2

RTECS: SJ3325000

TSCA: TSCA 8(b) inventory: Phenol

CI#: Not available.

Synonym: Monohydroxybenzene; Benzenol; Phenyl hyroxide; Phenylic acid

Chemical Name: Carbolic Acid

Chemical Formula: C6H5OH

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Phenol	108-95-2	100

Toxicological Data on Ingredients: Phenol: ORAL (LD50): Acute: 317 mg/kg [Rat]. 270 mg/kg [Mouse]. DERMAL (LD50): Acute: 630 mg/kg [Rabbit]. 669 mg/kg [Rat].

Section 3: Hazards Identification

Potential Acute Health Effects:
Very hazardous in case of skin contact (corrosive, irritant), of eye contact (irritant), of ingestion, of inhalation. Hazardous in case of skin contact (sensitizer, permeator). The amount of tissue damage depends on length of contact. Eye contact can result in corneal damage or blindness. Skin contact can produce inflammation and blistering. Inhalation of dust will produce irritation to gastro-intestinal or respiratory tract, characterized by burning, sneezing and coughing. Severe over-exposure can produce lung damage, choking, unconsciousness or death. Inflammation of the eye is characterized by redness, watering, and itching. Skin inflammation is characterized by itching, scaling, reddening, or, occasionally, blistering.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by IARC. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. The substance may be toxic to kidneys, liver, central nervous system (CNS). Repeated or prolonged exposure to the substance can produce target organs damage. Repeated

exposure of the eyes to a low level of dust can produce eye irritation. Repeated skin exposure can produce local skin destruction, or dermatitis. Repeated inhalation of dust can produce varying degree of respiratory irritation or lung damage. Repeated exposure to a highly toxic material may produce general deterioration of health by an accumulation in one or many human organs.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Cold water may be used. Get medical attention immediately.

Skin Contact:
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Cover the irritated skin with an emollient. Cold water may be used.Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Serious Skin Contact:
Wash with a disinfectant soap and cover the contaminated skin with an anti-bacterial cream. Seek immediate medical attention.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention immediately.

Serious Inhalation:
Evacuate the victim to a safe area as soon as possible. Loosen tight clothing such as a collar, tie, belt or waistband. If breathing is difficult, administer oxygen. If the victim is not breathing, perform mouth-to-mouth resuscitation. WARNING: It may be hazardous to the person providing aid to give mouth-to-mouth resuscitation when the inhaled material is toxic, infectious or corrosive. Seek immediate medical attention.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: May be combustible at high temperature.

Auto-Ignition Temperature: 715°C (1319°F)

Flash Points: CLOSED CUP: 79°C (174.2°F). OPEN CUP: 85°C (185°F).

Flammable Limits: LOWER: 1.7% UPPER: 8.6%

Products of Combustion: These products are carbon oxides (CO, CO2).

Fire Hazards in Presence of Various Substances:
Flammable in presence of open flames and sparks, of heat. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray, fog or foam. Do not use water jet.

Special Remarks on Fire Hazards:
Phenol + nitrides results in heat and flammable gas generation. Phenol + mineral oxdizing acids results in fire. Phenol + calcium hypochlorite is an exothermic reaction producing toxic fumes which may ignite.

Special Remarks on Explosion Hazards:
Phenol + sodium nitrite causes explosion on heating. Peroxydisulfuric acid + phenol causes explosion.

Section 6: Accidental Release Measures

Small Spill: Use appropriate tools to put the spilled solid in a convenient waste disposal container.

Large Spill:
Corrosive solid. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Use water spray to reduce vapors. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Be careful that the product is not present at a concentration level above TLV. Check TLV on the MSDS and with local authorities.

Section 7: Handling and Storage

Precautions:
Keep locked up.. Keep container dry. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Never add water to this product. In case of insufficient ventilation, wear suitable respiratory equipment. If ingested, seek medical advice immediately and show the container or the label. Avoid contact with skin and eyes. Keep away from incompatibles such as oxidizing agents, acids.

Storage:
Air Sensitive. Sensitive to light. Store in light-resistant containers. Moisture sensitive. Keep container tightly closed. Keep container in a cool, well-ventilated area.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection:
Splash goggles. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Vapor and dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits:
TWA: 5 (ppm) from ACGIH (TLV) [United States] SKIN TWA: 19 (mg/m3) from ACGIH (TLV) [United States] SKIN TWA: 5 from NIOSH [United States] TWA: 19 (mg/m3) from NIOSH [United States] TWA: 5 (ppm) from OSHA (PEL) [United States] TWA: 19 (mg/m3) from OSHA (PEL) [United States] TWA: 5 (ppm) [Canada] TWA: 19 (mg/m3) [Canada]Consult local authorities for acceptable exposure limits.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid.

Odor:
Distinct, aromatic, somewhat sickening sweet and acrid

Taste: Burning.

Molecular Weight: 94.11 g/mole

Color: Colorless to light pink

pH (1% soln/water): Not available.

Boiling Point: 182°C (359.6°F)

Melting Point: 42°C (107.6°F)

Critical Temperature: 694.2 (1281.6°F)

Specific Gravity: 1.057 (Water = 1)

Vapor Pressure: Not applicable.

Vapor Density: 3.24 (Air = 1)

Volatility: Not available.

Odor Threshold: 0.048 ppm

Water/Oil Dist. Coeff.: The product is more soluble in oil; log(oil/water) = 1.5

Ionicity (in Water): Not available.

Dispersion Properties: See solubility in water, methanol, diethyl ether, acetone.

Solubility:
Easily soluble in methanol, diethyl ether. Soluble in cold water, acetone. Solubility in water: 1g/15 ml water. Soluble in benzene. Very soluble in alcohol, chloroform, glycerol, petroleum, carbon disulfide, volatile and fixed oils, aqueous alkali hydroxides, carbon tetrachloride, acetic acid, liquid sulfur dioxide. Almost insoluble in petroleum ether. Miscible in acetone. Sparingly soluble in mineral oil.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Heat, ignition sources (flames, sparks), light, incompatible materials

Incompatibility with various substances: Reactive with oxidizing agents, metals, acids, alkalis.

Corrosivity:
Extremely corrosive in presence of copper. Slightly corrosive in presence of stainless steel(304), of stainless steel(316). Non-corrosive in presence of glass, of aluminum.

Special Remarks on Reactivity:
Air and light sensitive. Prone to redden on exposure to light and air. Incompatible with aluminum chloride, peroxydisulfuirc acid, acetaldehyde, sodium nitrite, boron trifluoride diethyl ether + 1,3-butadiene, isocyanates, nitrides, mineral oxidizing acids, calcium hypochlorite, halogens, formaldehyde, metals and alloys, lead, zinc, magnesium and their alloys, plastics, rubber, coatings, sodium nitrate + trifluoroacetic acid. Phenol + isocyanates results in heat generation, and violent polymerization. Phenol + 1,3-butadiene and boron trifluoride diethyl ether complex results in intense exothermic reaction. Phenol + acetaldehyde resultes in violent condensation.

Special Remarks on Corrosivity:
Minor corrosive effect on bronze. Severe corrosive effect on brass.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Absorbed through skin. Dermal contact. Eye contact. Inhalation. Ingestion.

Toxicity to Animals:
Acute oral toxicity (LD50): 270 mg/kg [Mouse]. Acute dermal toxicity (LD50): 630 mg/kg [Rabbit].

Chronic Effects on Humans:
CARCINOGENIC EFFECTS: A4 (Not classifiable for human or animal.) by ACGIH, 3 (Not classifiable for human.) by IARC. MUTAGENIC EFFECTS: Mutagenic for mammalian somatic cells. Mutagenic for bacteria and/or yeast. May cause damage to the following organs: kidneys, liver, central nervous system (CNS).

Other Toxic Effects on Humans:
Very hazardous in case of skin contact (corrosive, irritant), of ingestion, . Hazardous in case of skin contact (sensitizer, permeator), of eye contact (corrosive), of inhalation (lung corrosive).

Special Remarks on Toxicity to Animals:
Lowest Published Lethal Dose: LDL [Human] - Route: Oral; Dose: 140 mg/kg LDL [Infant] - Route: Oral; Dose: 10,000 mg/kg

Special Remarks on Chronic Effects on Humans:
Animal: passes through the placental barrier. May cause adverse reproductive effects and birth defects (teratogenic) Embryotoxic and/or foetotoxic in animal. May affect genetic material (mutagenic).

Special Remarks on other Toxic Effects on Humans:

Section 12: Ecological Information

Ecotoxicity:
Ecotoxicity in water (LC50): 125 mg/l 24 hours [Fish (Goldfish)]. >50 mg/l 1 hours [Fish (Fathead minnow)]. >50 mg/l 24 hours [Fish (Fathead minnow)]. >33 mg/l 72 hours [Fish (Fathead minnow)]. >33 ppm 96 hours [Fish (Fathead minnow)].

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: The products of degradation are less toxic than the product itself.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: CLASS 6.1: Poisonous material.

Identification: : Phenol, solid UNNA: 1671 PG: II

Special Provisions for Transport: Not available.

Section 15: Other Regulatory Information

Federal and State Regulations:
Connecticut hazardous material survey.: Phenol Illinois toxic substances disclosure to employee act: Phenol Illinois chemical safety act: Phenol New York release reporting list: Phenol Rhode Island RTK hazardous substances: Phenol Pennsylvania RTK: Phenol Minnesota: Phenol Massachusetts RTK: Phenol Massachusetts spill list: Phenol New Jersey: Phenol New Jersey spill list: Phenol Louisiana RTK reporting list: Phenol Louisiana spill reporting: Phenol TSCA 8(b) inventory: Phenol TSCA 4(a) proposed test rules: Phenol TSCA 8(a) IUR: Phenol TSCA 8(d) H and S data reporting: Phenol: effective: 6/1/87; sunset:

6/01/97 SARA 302/304/311/312 extremely hazardous substances: Phenol SARA 313 toxic chemical notification and release reporting: Phenol CERCLA: Hazardous substances.: Phenol: 1000 lbs. (453.6 kg)

Other Regulations:
OSHA: Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200). EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada):
CLASS D-1A: Material causing immediate and serious toxic effects (VERY TOXIC). CLASS D-2A: Material causing other toxic effects (VERY TOXIC). CLASS E: Corrosive solid.

DSCL (EEC):
R24/25- Toxic in contact with skin and if swallowed. R34- Causes burns. R40- Possible risks of irreversible effects. R43- May cause sensitization by skin contact. R52- Harmful to aquatic organisms. S1/2- Keep locked up and out of the reach of children. S24- Avoid contact with skin. S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S28- After contact with skin, wash immediately with plenty of water S37/39- Wear suitable gloves and eye/face protection. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S46- If swallowed, seek medical advice immediately and show this container or label. S56- Dispose of this material and its container at hazardous or special waste collection point.

HMIS (U.S.A.):

Health Hazard: 3

Fire Hazard: 2

Reactivity: 0

Personal Protection: j

National Fire Protection Association (U.S.A.):

Health: 4

Flammability: 2

Reactivity: 0

Specific hazard:

Protective Equipment:
Gloves. Synthetic apron. Vapor and dust respirator. Be sure to use an approved/certified respirator or equivalent. Wear appropriate respirator when ventilation is inadequate. Splash goggles.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 11:17 AM

Last Updated: 05/21/2013 12:00 PM

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SAFETY DATA SHEET

Version 3.10
Revision Date 03/03/2015
Print Date 02/07/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Potassium

Product Number : 244864
Brand : Aldrich

CAS-No. : 7440-09-7

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Substances and mixtures, which in contact with water, emit flammable gases (Category 1), H260
Skin corrosion (Category 1A), H314
Serious eye damage (Category 1), H318
Carcinogenicity (Category 1A), H350

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H260	In contact with water releases flammable gases which may ignite spontaneously.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H350	May cause cancer.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P223	Keep away from any possible contact with water, because of violent reaction and possible flash fire.

P231 + P232	Handle under inert gas. Protect from moisture.
P260	Do not breathe dust or mist.
P264	Wash skin thoroughly after handling.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P281	Use personal protective equipment as required.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P335 + P334	Brush off loose particles from skin. Immerse in cool water/ wrap in wet bandages.
P363	Wash contaminated clothing before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P402 + P404	Store in a dry place. Store in a closed container.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Reacts violently with water.
May form explosive peroxides.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Formula : K
Molecular weight : 39.10 g/mol

Hazardous components

Component		Classification	Concentration
Potassium			
CAS-No. EC-No. Index-No.	7440-09-7 231-119-8 019-001-00-2	Water-react. 1; Skin Corr. 1A; Eye Dam. 1; H260, H314	>= 90 - <= 100 %
Paraffin oils			
CAS-No. EC-No.	8012-95-1 232-384-2	Carc. 1A; H350	>= 1 - < 5 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.Continue rinsing eyes during transport to hospital.

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Dry powder

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Potassium oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.Keep away from sources of ignition - No smoking.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Never allow product to get in contact with water during storage.

Handle and store under inert gas.
Storage class (TRGS 510): Hazardous materials, which set free flammable gases upon contact with water

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Paraffin oils	8012-95-1	STEL	10.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	10.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract irritation 2014 Adoption Not classifiable as a human carcinogen		
		Upper Respiratory Tract irritation 2014 Adoption Exposure by all routes should be carefully controlled to levels as low as possible. Suspected human carcinogen		
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Upper Respiratory Tract irritation Exposure by all routes should be carefully controlled to levels as low as possible. Suspected human carcinogen		
		TWA	5.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Not classifiable as a human carcinogen		
		TWA	5.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	10.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Upper Respiratory Tract irritation Exposure by all routes should be carefully controlled to levels as low as possible. Suspected human carcinogen		

8.2 Exposure controls

Appropriate engineering controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: Fragments Colour: grey
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 64 °C (147 °F)
f)	Initial boiling point and boiling range	774 °C (1,425 °F) at 1,013 hPa (760 mmHg)
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower	No data available

	flammability or explosive limits	
k)	Vapour pressure	0.12 hPa (0.09 mmHg) at 260 °C (500 °F)
l)	Vapour density	No data available
m)	Relative density	0.860 g/cm3
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Reacts violently with water.

10.4 Conditions to avoid
Exposure to moisture

10.5 Incompatible materials
Oxidizing agents, Strong oxidizing agents, Carbon oxides, Reacts violently with water., Reacts with water to generate Hydrogen gas.

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC: 1 - Group 1: Carcinogenic to humans (Paraffin oils)

NTP: Known to be human carcinogenThe reference note has been added by TD based on the background information of the NTP. (Paraffin oils)

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: Not available

Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 2257 Class: 4.3 Packing group: I
Proper shipping name: Potassium
Reportable Quantity (RQ):

Poison Inhalation Hazard: No

IMDG
UN number: 2257 Class: 4.3 Packing group: I EMS-No: F-G, S-N
Proper shipping name: POTASSIUM

IATA
UN number: 2257 Class: 4.3 Packing group: I
Proper shipping name: Potassium
IATA Passenger: Not permitted for transport

15. REGULATORY INFORMATION

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

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

SARA 311/312 Hazards
Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Potassium	7440-09-7	1993-04-24
Paraffin oils	8012-95-1	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Potassium	7440-09-7	1993-04-24
Paraffin oils	8012-95-1	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Potassium	7440-09-7	1993-04-24
Paraffin oils	8012-95-1	2007-03-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Paraffin oils	8012-95-1	1987-02-27

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Carc.	Carcinogenicity
Eye Dam.	Serious eye damage
H260	In contact with water releases flammable gases which may ignite spontaneously.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H350	May cause cancer.
Skin Corr.	Skin corrosion
Water-react.	Substances and mixtures, which in contact with water, emit flammable gases

HMIS Rating
Health hazard: 3

Chronic Health Hazard:	*
Flammability:	4
Physical Hazard	2

NFPA Rating

Health hazard:	3
Fire Hazard:	4
Reactivity Hazard:	2
Special hazard.I:	W

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 3.10 Revision Date: 03/03/2015 Print Date: 02/07/2016

SAFETY DATA SHEET

Version 3.9
Revision Date 05/23/2016
Print Date 06/21/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : *p*-Xylene

Product Number : 95680
Brand : Sigma-Aldrich
Index-No. : 601-022-00-9

CAS-No. : 106-42-3

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 3), H226
Acute toxicity, Inhalation (Category 4), H332
Acute toxicity, Dermal (Category 4), H312
Skin irritation (Category 2), H315
Acute aquatic toxicity (Category 2), H401

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H226 Flammable liquid and vapour.
H312 + H332 Harmful in contact with skin or if inhaled
H315 Causes skin irritation.
H401 Toxic to aquatic life.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.

P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P312	Call a POISON CENTER/doctor if you feel unwell.
P322	Specific measures (see supplemental first aid instructions on this label).
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P403 + P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	:	1,4-Dimethylbenzene
Formula	:	C_8H_{10}
Molecular weight	:	106.17 g/mol
CAS-No.	:	106-42-3
EC-No.	:	203-396-5
Index-No.	:	601-022-00-9

Hazardous components

Component	Classification	Concentration
p-Xylene		
	Flam. Liq. 3; Acute Tox. 4; Skin Irrit. 2; Aquatic Acute 2; H226, H312 + H332, H315, H401	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

In case of eye contact
Flush eyes with water as a precaution.

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
p-Xylene	106-42-3	TWA	100.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Eye & Upper Respiratory Tract irritation		

		Central Nervous System impairment Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		STEL	150.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Eye & Upper Respiratory Tract irritation Central Nervous System impairment Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		ST	150.000000 ppm 655.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	100.000000 ppm 435.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	100.000000 ppm 435.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		
		TWA	100.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation Eye irritation Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		STEL	150.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation Eye irritation Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		TWA	100 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation Eye irritation Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		STEL	150 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation Eye irritation Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		

		TWA	100 ppm 435 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
p-Xylene	106-42-3	Methylhippuric acids	1.5g/g creatinine	Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			
		Methylhippuric acids	1,500.0000 mg/g	Urine	ACGIH - Biological Exposure Indices (BEI)
		End of shift (As soon as possible after exposure ceases)			

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 30 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid, clear Colour: colourless
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	13.0 °C (55.4 °F)
f)	Initial boiling point and boiling range	137.0 - 138.0 °C (278.6 - 280.4 °F)
g)	Flash point	25.0 °C (77.0 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 7 %(V) Lower explosion limit: 1.1 %(V)
k)	Vapour pressure	21.3 hPa (16.0 mmHg) at 37.7 °C (99.9 °F) 12.0 hPa (9.0 mmHg) at 20.0 °C (68.0 °F)
l)	Vapour density	No data available
m)	Relative density	0.86 g/cm3
n)	Water solubility	0.2 g/l
o)	Partition coefficient: n-octanol/water	log Pow: 3.15
p)	Auto-ignition temperature	529.0 °C (984.2 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

Surface tension	28.3 mN/m at 20.0 °C (68.0 °F)

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Vapours may form explosive mixture with air.

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Carbon oxides
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 5,000 mg/kg

LD50 Oral - Rat - male - 3,523 mg/kg

LC50 Inhalation - Rat - 4 h - 4550 ppm
Remarks: Lungs, Thorax, or Respiration:Chronic pulmonary edema. Liver:Other changes. Blood:Changes in cell count (unspecified).

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Moderate skin irritation - 4 h

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC:	3 - Group 3: Not classifiable as to its carcinogenicity to humans (p-Xylene)
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

May cause reproductive disorders.

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: ZE2625000

narcosis, Lung irritation, chest pain, pulmonary edema, Central nervous system depression, Gastrointestinal disturbance, Liver injury may occur., Kidney injury may occur., Blood disorders

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 2.60 mg/l - 96 h
	LC50 - Carassius auratus (goldfish) - 18.00 mg/l - 24 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 35.50 - 63.10 mg/l - 48 h
Toxicity to algae	EC50 - Pseudokirchneriella subcapitata (green algae) - 3.20 - 4.40 mg/l - 72 h

12.2 Persistence and degradability

Biodegradability Result: 87.8 % - Readily biodegradable

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 1307 Class: 3 Packing group: III
Proper shipping name: Xylenes
Reportable Quantity (RQ): 100 lbs

Poison Inhalation Hazard: No

IMDG

UN number: 1307 Class: 3 Packing group: III EMS-No: F-E, S-D
Proper shipping name: XYLENES

IATA

UN number: 1307 Class: 3 Packing group: III
Proper shipping name: Xylenes

15. REGULATORY INFORMATION

SARA 302 Components

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

SARA 313 Components

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
p-Xylene	106-42-3	2007-07-01

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Flam. Liq.	Flammable liquids
H226	Flammable liquid and vapour.
H312	Harmful in contact with skin.
H312 + H332	Harmful in contact with skin or if inhaled
H315	Causes skin irritation.
H332	Harmful if inhaled.

HMIS Rating

Health hazard:	1
Chronic Health Hazard:	*
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	1
Fire Hazard:	3
Reactivity Hazard:	0

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

Preparation Information
Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 3.9 Revision Date: 05/23/2016 Print Date: 06/21/2016

Fisher Scientific

Part of Thermo Fisher Scientific

SAFETY DATA SHEET

Revision Date 10-Feb-2015 **Revision Number** 1

1. Identification

Product Name **Pyrene, ca 96%**

Cat No. : **AC157651000; AC157655000**

Synonyms Benzo[def]phenanthrene

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Entity / Business Name
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification
Classification under 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Label Elements
None required

Hazards not otherwise classified (HNOC)
Very toxic to aquatic life with long lasting effects

3. Composition / information on ingredients

Component	CAS-No	Weight %
Pyrene	129-00-0	96.0

4. First-aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes.

Inhalation Move to fresh air.

Ingestion Do not induce vomiting.

Most important symptoms/effects No information available.
Notes to Physician Treat symptomatically

5. Fire-fighting measures

Unsuitable Extinguishing Media No information available

Flash Point °C
Method - No information available

Autoignition Temperature No information available
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical
Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products
None known
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
1	1	0	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment.
Environmental Precautions See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage.

Methods for Containment and Clean Up No information available.

7. Handling and storage

Handling Ensure adequate ventilation.

Storage Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls / personal protection

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Engineering Measures Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by

OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Powder Solid
Appearance	Yellow
Odor	Odorless
Odor Threshold	No information available
pH	
Melting Point/Range	156 °C
Boiling Point/Range	°C @ 760 mmHg
Flash Point	°C
Evaporation Rate	No information available
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	< 1 mmHg @ 20 °C
Vapor Density	No information available
Relative Density	No information available
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	C16H10
Molecular Weight	202.25

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products.

Incompatible Materials Strong oxidizing agents

Hazardous Decomposition Products None under normal use conditions

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Pyrene	2700 mg/kg (Rat)	Not listed	Not listed

Toxicologically Synergistic No information available

Products

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Pyrene	129-00-0	group 3	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known
STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Pyrene	Not listed	Oncorhynchus mykiss: LC50 > 2mg/L 96h	Not listed	EC50 48h 1.8 mg/L EC50 48h 0.002-0.003 mg/L

Persistence and Degradability No information available
Bioaccumulation/ Accumulation No information available.

Mobility No information available.

Component	log Pow
Pyrene	4.88

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT Not regulated
TDG Not regulated
IATA Not regulated
IMDG/IMO Not regulated

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Pyrene	X	X	-	204-927-3	-		X	X	X	X	-

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313 Not applicable

SARA 311/312 Hazardous Categorization

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Pyrene	-	-	X	X

Clean Air Act Not applicable

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
Not applicable

Component	Hazardous Substances RQs	CERCLA EHS RQs
Pyrene	5000 lb	5000 lb

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Pyrene	X	X	X	X	-

U.S. Department of Transportation

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class Non-controlled

16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Revision Date 10-Feb-2015
Print Date 10-Feb-2015
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS

Material Safety Data Sheet
sec-Butylbenzene, 99+%

MSDS# 73785

Section 1 - Chemical Product and Company Identification

MSDS Name:	sec-Butylbenzene, 99+%
Catalog Numbers:	AC107860000, AC107860050, AC107860500, AC107861000, AC107862500, AC107865000 AC107865000
Synonyms:	2-Phenylbutane; Benzene, (1-methylpropyl)-; (1-Methylpropyl)benzene; Benzene, sec-butyl-
Company Identification:	Acros Organics BVBA Janssen Pharmaceuticalaan 3a 2440 Geel, Belgium
Company Identification: (USA)	Acros Organics One Reagent Lane Fair Lawn, NJ 07410
For information in the US, call:	800-ACROS-01
For information in Europe, call:	+32 14 57 52 11
Emergency Number, Europe:	+32 14 57 52 99
Emergency Number US:	201-796-7100
CHEMTREC Phone Number, US:	800-424-9300
CHEMTREC Phone Number, Europe:	703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#:	135-98-8
Chemical Name:	sec-Butylbenzene
%:	99+
EINECS#:	205-227-0

Hazard Symbols: XI

Risk Phrases: 10 36/37/38

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Warning! Flammable liquid and vapor. May cause central nervous system depression. Causes eye, skin, and respiratory tract irritation. Target Organs: Central nervous system.

Potential Health Effects

Eye: Causes eye irritation.

Skin: Causes skin irritation.

Ingestion: May cause gastrointestinal irritation with nausea, vomiting and diarrhea. Ingestion of large amounts may cause CNS depression.

Inhalation: Causes respiratory tract irritation.

Chronic: Prolonged or repeated skin contact may cause dermatitis.

Section 4 - First Aid Measures

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

Section 5 - Fire Fighting Measures

General Information:	As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Vapors can travel to a source of ignition and flash back. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion. Will burn if involved in a fire. Use water spray to keep fire-exposed containers cool. Containers may explode in the heat of a fire. Flammable liquid and vapor.
Extinguishing Media:	For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. For large fires, use water spray, fog, or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Use agent most appropriate to extinguish fire. Do NOT use straight streams of water.
Autoignition Temperature:	415 deg C (779.00 deg F)
Flash Point:	45 deg C (113.00 deg F)
Explosion Limits: Lower:	0.80 vol %
Explosion Limits: Upper:	6.90 vol %
NFPA Rating:	health: 2; flammability: 2; instability: 0;

Section 6 - Accidental Release Measures

General Information:	Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks:	Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors.

Section 7 - Handling and Storage

Handling:	Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Avoid ingestion and inhalation. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames.
Storage:	Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area.

Section 8 - Exposure Controls, Personal Protection

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
sec-Butylbenzene	none listed	none listed	none listed

OSHA Vacated PELs: sec-Butylbenzene: None listed

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local explosion-proof ventilation to keep airborne levels to acceptable levels.

Exposure Limits

Personal Protective Equipment

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

Section 9 - Physical and Chemical Properties

Physical State:	Liquid
Color:	clear colorless
Odor:	None reported.
pH:	Not available
Vapor Pressure:	4 mm Hg @ 37.7 deg C
Vapor Density:	4.62
Evaporation Rate:	Not available
Viscosity:	Not available
Boiling Point:	173 - 174 deg C @ 760 mm Hg
Freezing/Melting Point:	-75 deg C (-103.00°F)
Decomposition Temperature:	Not available
Solubility in water:	0.015 g/L water
Specific Gravity/Density:	0.8630 g/cm3
Molecular Formula:	C10H14
Molecular Weight:	134.22

Section 10 - Stability and Reactivity

Chemical Stability:	Stable under normal temperatures and pressures.
Conditions to Avoid:	Ignition sources, excess heat.
Incompatibilities with Other Materials	Strong oxidizing agents.
Hazardous Decomposition Products	Carbon monoxide, carbon monoxide, carbon dioxide.
Hazardous Polymerization	Has not been reported.

Section 11 - Toxicological Information

RTECS#: CAS# 135-98-8: CY9100000

RTECS:

LD50/LC50:
CAS# 135-98-8: Draize test, rabbit, eye: 500 mg/24H Mild;
Draize test, rabbit, skin: 100 mg/24H Moderate;
Oral, mouse: LD50 = 8700 mg/kg;
Oral, rat: LD50 = 2240 uL/kg;
Oral, rat: LD50 = 6300 mg/kg;
Skin, rabbit: LD50 = >16 mL/kg;
.

Carcinogenicity: sec-Butylbenzene - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Not available

Section 13 - Disposal Considerations

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

Section 14 - Transport Information

US DOT
Shipping Name: BUTYL BENZENES
Hazard Class: 3
UN Number: UN2709
Packing Group: III
Canada TDG

Shipping Name: Not available
Hazard Class:
UN Number:
Packing Group:

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XI

Risk Phrases:

R 10 Flammable.

R 36/37/38 Irritating to eyes, respiratory system and skin.

Safety Phrases:

S 9 Keep container in a well-ventilated place.

S 16 Keep away from sources of ignition - No smoking.

S 33 Take precautionary measures against static discharges.

WGK (Water Danger/Protection)

CAS# 135-98-8: 1

Canada

CAS# 135-98-8 is listed on Canada's DSL List

Canadian WHMIS Classifications: B3, D2B

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

CAS# 135-98-8 is not listed on Canada's Ingredient Disclosure List.

US Federal

TSCA

CAS# 135-98-8 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date: 9/02/1997

Revision #9 Date 7/20/2009

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

SAFETY DATA SHEET

Revision Date 10-Feb-2015 **Revision Number** 1

1. Identification

Product Name **Selenium**

Cat No. : **AC419270000; AC419271000; AC419275000**

Synonyms None

Recommended Use Laboratory chemicals.

Uses advised against No Information available

Details of the supplier of the safety data sheet

Company
Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Entity / Business Name
Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Acute oral toxicity	Category 3
Acute Inhalation Toxicity - Dusts and Mists	Category 3
Specific target organ toxicity - (repeated exposure)	Category 2

Label Elements

Signal Word
Danger

Hazard Statements
Toxic if swallowed
Toxic if inhaled
May cause damage to organs through prolonged or repeated exposure

Precautionary Statements
Prevention

Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Do not breathe dust/fume/gas/mist/vapors/spray

Response

Get medical attention/advice if you feel unwell

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor/physician

Ingestion

IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Rinse mouth

Storage

Store locked up
Store in a well-ventilated place. Keep container tightly closed

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

May cause long lasting harmful effects to aquatic life

3. Composition / information on ingredients

Component	CAS-No	Weight %
Selenium	7782-49-2	> 99.5

4. First-aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Skin Contact Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.

Inhalation Remove from exposure, lie down. Move to fresh air. If breathing is difficult, give oxygen. If not breathing, give artificial respiration. Immediate medical attention is required.

Ingestion Do not induce vomiting. Never give anything by mouth to an unconscious person. Drink plenty of water. Call a physician immediately. If possible drink milk afterwards.

Most important symptoms/effects No information available.
Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Water spray. Carbon dioxide (CO_2). Dry chemical. chemical foam.

Unsuitable Extinguishing Media No information available

Flash Point No information available
Method - No information available

Autoignition Temperature No information available
Explosion Limits
Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical

Vapors may form explosive mixtures with air.

Hazardous Combustion Products
None known
Protective Equipment and Precautions for Firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
3	0	0	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment.
Environmental Precautions See Section 12 for additional ecological information. Avoid release to the environment. Collect spillage.

Methods for Containment and Clean Up Sweep up or vacuum up spillage and collect in suitable container for disposal.

7. Handling and storage

Handling Avoid contact with skin and eyes. Do not breathe dust. Do not breathe vapors or spray mist. Use only in area provided with appropriate exhaust ventilation.

Storage Keep in a dry, cool and well-ventilated place. Keep container tightly closed. Keep under nitrogen.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH
Selenium	TWA: 0.2 mg/m³	(Vacated) TWA: 0.2 mg/m³	IDLH: 1 mg/m³ TWA: 0.2 mg/m³

Component	Quebec	Mexico OEL (TWA)	Ontario TWAEV
Selenium	TWA: 0.2 mg/m³	TWA: 0.2 mg/m³	TWA: 0.2 mg/m³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: The National Institute for Occupational Safety and Health Immediately Dangerous to Life or Health

Engineering Measures Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection A NIOSH/MSHA approved air purifying dust or mist respirator or European Standard EN 149.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Powder Solid
Appearance	Grey
Odor	No information available
Odor Threshold	No information available
pH	No information available
Melting Point/Range	217 - 222 °C / 422.6 - 431.6 °F
Boiling Point/Range	685 °C / 1265 °F
Flash Point	No information available
Evaporation Rate	No information available
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	No data available
Lower	No data available
Vapor Pressure	1 mmHg @ 345 °C
Vapor Density	No information available
Relative Density	4.810
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	No information available
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	Se
Molecular Weight	78.96

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products.

Incompatible Materials Acids, Strong oxidizing agents, Fluorine, oxygen, Metals

Hazardous Decomposition Products None under normal use conditions

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information No acute toxicity information is available for this product

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Selenium	6700 mg/kg (Rat)	Not listed	Not listed

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Selenium	7782-49-2	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known
STOT - repeated exposure None known

Aspiration hazard No information available

Symptoms / effects,both acute and delayed No information available
Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity
Do not empty into drains.

Persistence and Degradability No information available
Bioaccumulation/ Accumulation No information available.

Mobility No information available.

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT
- **UN-No** UN3283
- **Hazard Class** 6.1
- **Packing Group** III

TDG
- **UN-No** UN3283
- **Hazard Class** 6.1
- **Packing Group** III

IATA
- **UN-No** 3283
- **Proper Shipping Name** SELENIUM COMPOUND, SOLID, N.O.S.
- **Hazard Class** 6.1
- **Packing Group** III

IMDG/IMO
- **UN-No** 3283
- **Proper Shipping Name** SELENIUM COMPOUND, SOLID, N.O.S.
- **Hazard Class** 6.1
- **Packing Group** III

15. Regulatory information

International Inventories

Component	TSCA	DSL	NDSL	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Selenium	X	X	-	231-957-4	-		X	-	X	X	X

Legend:
X - Listed
E - Indicates a substance that is the subject of a Section 5(e) Consent order under TSCA.
F - Indicates a substance that is the subject of a Section 5(f) Rule under TSCA.
N - Indicates a polymeric substance containing no free-radical initiator in its inventory name but is considered to cover the designated polymer made with any free-radical initiator regardless of the amount used.
P - Indicates a commenced PMN substance
R - Indicates a substance that is the subject of a Section 6 risk management rule under TSCA.
S - Indicates a substance that is identified in a proposed or final Significant New Use Rule
T - Indicates a substance that is the subject of a Section 4 test rule under TSCA.
XU - Indicates a substance exempt from reporting under the Inventory Update Rule, i.e. Partial Updating of the TSCA Inventory Data Base Production and Site Reports (40 CFR 710(B).
Y1 - Indicates an exempt polymer that has a number-average molecular weight of 1,000 or greater.
Y2 - Indicates an exempt polymer that is a polyester and is made only from reactants included in a specified list of low concern reactants that comprises one of the eligibility criteria for the exemption rule.

U.S. Federal Regulations

TSCA 12(b) Not applicable

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Selenium	7782-49-2	> 99.5	1.0

SARA 311/312 Hazardous Categorization

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Selenium	-	-	X	X

Clean Air Act Not applicable

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Selenium	X		-

OSHA Occupational Safety and Health Administration
Not applicable

CERCLA
This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Selenium	100 lb	-

California Proposition 65 This product does not contain any Proposition 65 chemicals

State Right-to-Know

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Selenium	X	X	X	X	X

U.S. Department of Transportation

Reportable Quantity (RQ):	N
DOT Marine Pollutant	N
DOT Severe Marine Pollutant	N

U.S. Department of Homeland Security
This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade No information available

Canada
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR

WHMIS Hazard Class D1A Very toxic materials
D2B Toxic materials

16. Other information

Prepared By Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

Revision Date 10-Feb-2015
Print Date 10-Feb-2015
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS)

Disclaimer
The information provided on this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of SDS

SAFETY DATA SHEET

Version 4.6
Revision Date 12/02/2015
Print Date 02/09/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Silver

Product Number : 327093
Brand : Aldrich

CAS-No. : 7440-22-4

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Not a hazardous substance or mixture.

2.2 GHS Label elements, including precautionary statements

Not a hazardous substance or mixture.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula : Ag
Molecular weight : 107.87 g/mol
CAS-No. : 7440-22-4
EC-No. : 231-131-3

Hazardous components

Component	Classification	Concentration
Silver		
		<= 100 %

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Silver/silver oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Avoid dust formation. Avoid breathing vapours, mist or gas.
For personal protection see section 8.

6.2 Environmental precautions
No special environmental precautions required.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

Air sensitive. Store under inert gas. Keep in a dry place.
Storage class (TRGS 510): Non Combustible Solids

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Silver	7440-22-4	TWA	0.010000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.010000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.100000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Argyria		
		TWA	0.010000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	0.010000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	0.010000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	0.100000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Argyria		
		TWA	0.010000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	0.1 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Argyria		
		TWA	0.01 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants

8.2 Exposure controls

Appropriate engineering controls
General industrial hygiene practice.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
No special environmental precautions required.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: powder
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 960 °C (1,760 °F) - lit.
f)	Initial boiling point and boiling range	2,212 °C (4,014 °F) - lit.
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	10.49 g/cm3
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Oxygen, Strong acids and strong bases

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

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

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

Carcinogenicity - Rat - Unreported
Tumorigenic:Tumors at site or application.

Carcinogenicity classification not possible from current data.

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

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: Not available

May cause argyria (a slate-gray or bluish discoloration of the skin and deep tissues due to the deposit of insoluble albuminate of silver).

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3077 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substances, solid, n.o.s. (Silver)
Reportable Quantity (RQ): 1 lbs

Poison Inhalation Hazard: No

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

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

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Silver	7440-22-4	1993-04-24

SARA 311/312 Hazards
No SARA Hazards

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Silver	7440-22-4	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date

Silver	7440-22-4	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Silver	7440-22-4	1993-04-24

California Prop. 65 Components

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

16. OTHER INFORMATION

HMIS Rating

Health hazard:	0
Chronic Health Hazard:	
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	0
Fire Hazard:	0
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.6 Revision Date: 12/02/2015 Print Date: 02/09/2016

SAFETY DATA SHEET

Version 4.11
Revision Date 03/05/2015
Print Date 02/07/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Sodium

Product Number : 483745
Brand : Aldrich

CAS-No. : 7440-23-5

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Substances and mixtures, which in contact with water, emit flammable gases (Category 1), H260
Skin corrosion (Category 1B), H314
Serious eye damage (Category 1), H318
Carcinogenicity (Category 1A), H350

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)

H260	In contact with water releases flammable gases which may ignite spontaneously.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H350	May cause cancer.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P223	Keep away from any possible contact with water, because of violent reaction and possible flash fire.

P231 + P232	Handle under inert gas. Protect from moisture.
P260	Do not breathe dust or mist.
P264	Wash skin thoroughly after handling.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P281	Use personal protective equipment as required.
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304 + P340 + P310	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTER or doctor/ physician.
P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P335 + P334	Brush off loose particles from skin. Immerse in cool water/ wrap in wet bandages.
P363	Wash contaminated clothing before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P402 + P404	Store in a dry place. Store in a closed container.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Reacts violently with water.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.2 Mixtures

Formula : Na
Molecular weight : 22.99 g/mol

Hazardous components

Component		Classification	Concentration
Sodium			
CAS-No. EC-No. Index-No.	7440-23-5 231-132-9 011-001-00-0	Water-react. 1; Skin Corr. 1B; Eye Dam. 1; H260, H314	>= 90 - <= 100 %
Paraffin oils			
CAS-No. EC-No.	8012-95-1 232-384-2	Carc. 1A; H350	>= 90 - <= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.Continue rinsing eyes during transport to hospital.

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Dry powder

5.2 Special hazards arising from the substance or mixture
No data available

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Sweep up and shovel. Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13). Do not flush with water. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.Keep away from sources of ignition - No smoking.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Never allow product to get in contact with water during storage.

Handle and store under inert gas. Air sensitive.
Storage class (TRGS 510): Hazardous materials, which set free flammable gases upon contact with water

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Paraffin oils	8012-95-1	STEL	10.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	10.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract irritation 2014 Adoption Not classifiable as a human carcinogen		
		Upper Respiratory Tract irritation 2014 Adoption Exposure by all routes should be carefully controlled to levels as low as possible. Suspected human carcinogen		
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		TWA	5.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Upper Respiratory Tract irritation Exposure by all routes should be carefully controlled to levels as low as possible. Suspected human carcinogen		
		TWA	5.000000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Not classifiable as a human carcinogen		
		TWA	5.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	10.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		Upper Respiratory Tract irritation Exposure by all routes should be carefully controlled to levels as low as possible. Suspected human carcinogen		

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant protective clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: Pieces
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 97.8 °C (208.0 °F) - lit.
f)	Initial boiling point and boiling range	883 °C (1,621 °F) - lit.
g)	Flash point	82 °C (180 °F)
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	0.97 g/cm3

n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Reacts violently with water.

10.4 Conditions to avoid
Air Do not allow water to enter container.
Exposure to moisture

10.5 Incompatible materials
Oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

IARC: 1 - Group 1: Carcinogenic to humans (Paraffin oils)

NTP: Known to be human carcinogenThe reference note has been added by TD based on the background information of the NTP. (Paraffin oils)

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available
No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: Not available

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin., Aspiration may lead to:, lipid pneumonia, Effects due to ingestion may include:, laxative effect, Gastrointestinal disturbance, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1428 Class: 4.3 Packing group: I
Proper shipping name: Sodium
Reportable Quantity (RQ): 10 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1428 Class: 4.3 Packing group: I EMS-No: F-G, S-N
Proper shipping name: SODIUM

IATA
UN number: 1428 Class: 4.3 Packing group: I
Proper shipping name: Sodium
IATA Passenger: Not permitted for transport

15. REGULATORY INFORMATION

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

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

SARA 311/312 Hazards
Reactivity Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Sodium	7440-23-5	1993-04-24
Paraffin oils	8012-95-1	2007-03-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Sodium	7440-23-5	1993-04-24
Paraffin oils	8012-95-1	2007-03-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Sodium	7440-23-5	1993-04-24
Paraffin oils	8012-95-1	2007-03-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Paraffin oils	8012-95-1	1987-02-27

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Carc.	Carcinogenicity
Eye Dam.	Serious eye damage
H260	In contact with water releases flammable gases which may ignite spontaneously.
H314	Causes severe skin burns and eye damage.
H318	Causes serious eye damage.
H350	May cause cancer.
Skin Corr.	Skin corrosion
Water-react.	Substances and mixtures, which in contact with water, emit flammable gases

HMIS Rating

Health hazard:	3
Chronic Health Hazard:	*
Flammability:	4
Physical Hazard	2

NFPA Rating

Health hazard:	3
Fire Hazard:	4
Reactivity Hazard:	2
Special hazard.I:	W

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.11 Revision Date: 03/05/2015 Print Date: 02/07/2016

SAFETY DATA SHEET

Version 3.14
Revision Date 12/02/2015
Print Date 02/18/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Styrene

Product Number : 240869
Brand : Aldrich
Index-No. : 601-026-00-0

CAS-No. : 100-42-5

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 3), H226
Acute toxicity, Inhalation (Category 4), H332
Skin irritation (Category 2), H315
Eye irritation (Category 2A), H319
Carcinogenicity (Category 2), H351
Reproductive toxicity (Category 2), H361
Specific target organ toxicity - repeated exposure (Category 1), H372
Acute aquatic toxicity (Category 2), H401

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H226 Flammable liquid and vapour.
H315 Causes skin irritation.
H319 Causes serious eye irritation.
H332 Harmful if inhaled.
H351 Suspected of causing cancer.
H361 Suspected of damaging fertility or the unborn child.

H372	Causes damage to organs through prolonged or repeated exposure.
H401	Toxic to aquatic life.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P332 + P313	If skin irritation occurs: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P362	Take off contaminated clothing and wash before reuse.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

Lachrymator.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	:	Phenylethylene Vinylbenzene
Formula	:	$C_8H_8C_8H_8$
Molecular weight	:	104.15 g/mol
CAS-No.	:	100-42-5
EC-No.	:	202-851-5
Index-No.	:	601-026-00-0

Hazardous components

Component	Classification	Concentration
Styrene		
	Flam. Liq. 3; Acute Tox. 4; Skin Irrit. 2; Eye Irrit. 2A; Carc. 2; Repr. 2; STOT RE 1; Aquatic Acute 2; H226, H315, H319, H332, H351, H361, H372, H401	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

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

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides
Container explosion may occur under fire conditions., Vapours may form explosive mixture with air.

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

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

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

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

Recommended storage temperature 2 - 8 °C

Light sensitive.
Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Styrene	100-42-5	TWA	50.000000 ppm 215.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	100.000000 ppm 425.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
	Remarks	See Table Z-2		
		TWA	100.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.15-1969		
		CEIL	200.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.15-1969		
		Peak	600.000000 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.15-1969		
		TWA	20.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation Peripheral neuropathy Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		STEL	40.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation Peripheral neuropathy Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Not classifiable as a human carcinogen		
		TWA	100 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.15-1969		

		CEIL	200 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.15-1969		
		Peak	600 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-2
		Z37.15-1969		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Styrene	100-42-5	Mandelic acid plus phenylglyoxylic acid	400mg/g Creatinine	Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			
		Styrene	0.2000 mg/l	In venous blood	ACGIH - Biological Exposure Indices (BEI)
		End of shift (As soon as possible after exposure ceases)			
		Mandelic acid plus phenylglyoxylic acid	400mg/g Creatinine	Urine	ACGIH - Biological Exposure Indices (BEI)
		End of shift (As soon as possible after exposure ceases)			
		Styrene	40 µg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
		End of shift (As soon as possible after exposure ceases)			

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 32 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid, clear Colour: colourless
b)	Odour	sweet
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -31 °C (-24 °F) - lit.
f)	Initial boiling point and boiling range	145 - 146 °C (293 - 295 °F) - lit.
g)	Flash point	32.0 °C (89.6 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 8.9 %(V) Lower explosion limit: 1.1 %(V)
k)	Vapour pressure	6 hPa (5 mmHg) at 20 °C (68 °F)
l)	Vapour density	3.6
m)	Relative density	0.906 g/cm3 at 25 °C (77 °F)
n)	Water solubility	0.05 g/l at 25 °C (77 °F) - slightly soluble
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	490.0 °C (914.0 °F) 480.0 °C (896.0 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information

Relative vapour density	3.6

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.
Test for peroxide formation before distillation or evaporation. Test for peroxide formation or discard after 1 year.
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Vapours may form explosive mixture with air.Vapours may form explosive mixture with air.

10.4 Conditions to avoid
May polymerize on exposure to light.
Heat, flames and sparks.

10.5 Incompatible materials
Oxidizing agents, Copper

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - > 6,000 mg/kg

LC50 Inhalation - Rat - 4 h - 12,000 mg/m3

LD50 Dermal - Rat - male and female - > 2,000 mg/kg

No data available

Skin corrosion/irritation
Skin - Rabbit
Result: Skin irritation
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Eye irritation - 24 h

Respiratory or skin sensitisation
Maximisation Test (GPMT) - Guinea pig
Does not cause skin sensitisation.
(OECD Test Guideline 406)

Germ cell mutagenicity
Laboratory experiments have shown mutagenic effects.

Carcinogenicity

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

IARC:	2B - Group 2B: Possibly carcinogenic to humans (Styrene)
NTP:	Reasonably anticipated to be a human carcinogen (Styrene)
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
Suspected of damaging the unborn child. Suspected human reproductive toxicant

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard
No data available

Additional Information
RTECS: WL3675000

Dermatitis, Central nervous system depression, Nausea, Dizziness, Headache, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Endocrine system. -

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	NOEC - Pimephales promelas (fathead minnow) - 4 mg/l - 96 h
	LC50 - Pimephales promelas (fathead minnow) - 32 mg/l - 96 h
	LOEC - Pimephales promelas (fathead minnow) - 7.6 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 4.7 mg/l - 48 h (OECD Test Guideline 202)
Toxicity to algae	IC50 - Pseudokirchneriella subcapitata (green algae) - 1.4 mg/l - 72 h

12.2 Persistence and degradability

Biodegradability	aerobic - Exposure time 28 d Result: > 60 % - Readily biodegradable

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life.

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 2055 Class: 3 Packing group: III
Proper shipping name: Styrene monomer, stabilized
Reportable Quantity (RQ): 1000 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 2055 Class: 3 Packing group: III EMS-No: F-E, S-D
Proper shipping name: STYRENE MONOMER, STABILIZED

IATA
UN number: 2055 Class: 3 Packing group: III
Proper shipping name: Styrene monomer, stabilized

15. REGULATORY INFORMATION

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

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Styrene	100-42-5	2007-07-01

SARA 311/312 Hazards
Fire Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Styrene	100-42-5	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Styrene	100-42-5	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Styrene	100-42-5	2007-07-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Carc.	Carcinogenicity
Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquids
H226	Flammable liquid and vapour.
H315	Causes skin irritation.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.
H351	Suspected of causing cancer.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H401	Toxic to aquatic life.

HMIS Rating

Health hazard:	1
Chronic Health Hazard:	*
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	0

Further information

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Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 3.14 Revision Date: 12/02/2015 Print Date: 02/18/2016

MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MATHESON TRI-GAS, INC.
150 Allen Road Suite 302
Basking Ridge, New Jersey 07920
Information: 1-800-416-2505

Emergency Contact:
CHEMTREC 1-800-424-9300
Calls Originating Outside the US:
703-527-3887 (Collect Calls Accepted)

SUBSTANCE: TERT-BUTANOL

TRADE NAMES/SYNONYMS:
T-BUTANOL; 1,1-DIMETHYLETHANOL; TRIMETHYLCARBINOL; TRIMETHYLMETHANOL; TRIMETHYL METHANOL; BUTYL ALCOHOL; 2-METHYL-2-PROPANOL; TERT-BUTYL ALCOHOL; TRIMETHYL CARBINOL; UN 1120; C4H10O; 00230215; RTECS EO1925000

CHEMICAL FAMILY: aliphatic, alcohols

CREATION DATE: Dec 01 2003
REVISION DATE: Dec 11 2008

2. COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: TERT-BUTANOL
CAS NUMBER: 75-65-0
PERCENTAGE: 100

3. HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=2 FIRE=3 REACTIVITY=0

EMERGENCY OVERVIEW:
CHANGE IN APPEARANCE: hygroscopic
COLOR: colorless
PHYSICAL FORM: crystals, liquid
ODOR: pungent odor
MAJOR HEALTH HAZARDS: respiratory tract irritation, eye irritation, central nervous system depression
PHYSICAL HAZARDS: Flammable liquid and vapor. Vapor may cause flash fire.

POTENTIAL HEALTH EFFECTS:

INHALATION:
SHORT TERM EXPOSURE: irritation, nausea, vomiting, difficulty breathing, headache, drowsiness, dizziness, loss of coordination, blurred vision
LONG TERM EXPOSURE: no information on significant adverse effects
SKIN CONTACT:
SHORT TERM EXPOSURE: irritation
LONG TERM EXPOSURE: irritation
EYE CONTACT:
SHORT TERM EXPOSURE: irritation, blurred vision
LONG TERM EXPOSURE: irritation
INGESTION:
SHORT TERM EXPOSURE: nausea, vomiting, diarrhea, stomach pain, headache, drowsiness, dizziness, loss of coordination, unconsciousness
LONG TERM EXPOSURE: no information on significant adverse effects

4. FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

SKIN CONTACT: Wash skin with soap and water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention, if needed. Thoroughly clean and dry contaminated clothing and shoes before reuse.

EYE CONTACT: Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

INGESTION: If a large amount is swallowed, get medical attention.

NOTE TO PHYSICIAN: For inhalation, consider oxygen.

5. FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Severe fire hazard. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back. Vapor/air mixtures are explosive.

EXTINGUISHING MEDIA: alcohol-resistant foam, carbon dioxide, regular dry chemical, water

Large fires: Use alcohol-resistant foam or flood with fine water spray.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Dike for later disposal. Do not scatter spilled material with high-pressure water streams. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Withdraw immediately in case of rising sound from

venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck, evacuation radius: 800 meters (1/2 mile). Do not attempt to extinguish fire unless flow of material can be stopped first. Flood with fine water spray. Do not scatter spilled material with high-pressure water streams. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

FLASH POINT: 52 F (11 C) (CC)
LOWER FLAMMABLE LIMIT: 2.4%
UPPER FLAMMABLE LIMIT: 8.0%
AUTOIGNITION: 892 F (478 C)
FLAMMABILITY CLASS (OSHA): IB

6. ACCIDENTAL RELEASE MEASURES

OCCUPATIONAL RELEASE:
Avoid heat, flames, sparks and other sources of ignition. Remove sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Large spills: Dike for later disposal. Keep unnecessary people away, isolate hazard area and deny entry. Stay upwind and keep out of low areas.

7. HANDLING AND STORAGE

STORAGE: Store and handle in accordance with all current regulations and standards. Subject to storage regulations: U.S. OSHA 29 CFR 1910.106. Grounding and bonding required. Keep separated from incompatible substances.

8. EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:
TERT-BUTANOL:
TERT-BUTYL ALCOHOL:
100 ppm (300 mg/m3) OSHA TWA
150 ppm (450 mg/m3) OSHA STEL (vacated by 58 FR 35338, June 30, 1993)
100 ppm ACGIH TWA
100 ppm (300 mg/m3) NIOSH recommended TWA 10 hour(s)
150 ppm (450 mg/m3) NIOSH recommended STEL

VENTILATION: Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

EYE PROTECTION: Wear splash resistant safety goggles with a faceshield. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

CLOTHING: Wear appropriate chemical resistant clothing.

GLOVES: Wear appropriate chemical resistant gloves.

RESPIRATOR: The following respirators and maximum use concentrations are drawn from NIOSH and/or OSHA.
1600 ppm
Any supplied-air respirator operated in a continuous-flow mode.
Any powered, air-purifying respirator with organic vapor cartridge(s).
Any air-purifying respirator with a full facepiece and an organic vapor canister.
Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted organic vapor canister.
Any self-contained breathing apparatus with a full facepiece.
Any supplied-air respirator with a full facepiece.
Emergency or planned entry into unknown concentrations or IDLH conditions -
Any self-contained breathing apparatus that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode.
Any supplied-air respirator with a full facepiece that is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained breathing apparatus operated in pressure-demand or other positive-pressure mode.
Escape -
Any air-purifying full-facepiece respirator (gas mask) with a chin-style, front-mounted or back-mounted organic vapor canister.
Any appropriate escape-type, self-contained breathing apparatus.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: liquid
COLOR: colorless
CHANGE IN APPEARANCE: hygroscopic
PHYSICAL FORM: crystals, liquid
ODOR: pungent odor
MOLECULAR WEIGHT: 74.12
MOLECULAR FORMULA: (C-H3)3-C-O-H
BOILING POINT: 180 F (82 C)
MELTING POINT: 79 F (26 C)
VAPOR PRESSURE: 31 mmHg @ 20 C
VAPOR DENSITY (air=1): 2.6
SPECIFIC GRAVITY (water=1): 0.7887
WATER SOLUBILITY: soluble
PH: Not available
VOLATILITY: Not available
ODOR THRESHOLD: 73 ppm

EVAPORATION RATE: 1.05 (butyl acetate=1)
VISCOSITY: 3.3 cP @ 30 C
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available
SOLVENT SOLUBILITY:
Soluble: alcohol, ether, acetone, benzene

10. STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat.

INCOMPATIBILITIES: metals, acids, oxidizing materials, combustible materials, metal salts

HAZARDOUS DECOMPOSITION:
Thermal decomposition products: oxides of carbon

POLYMERIZATION: Will not polymerize.

11. TOXICOLOGICAL INFORMATION

TERT-BUTANOL:
IRRITATION DATA: 500 ul/24 hour(s) skin-rabbit mild; 100 ul/24 hour(s) eyes-rabbit severe
TOXICITY DATA: >10000 ppm/4 hour(s) inhalation-rat LC50; >2 gm/kg skin-rabbit LD50; 2743 mg/kg oral-rat LD50
CARCINOGEN STATUS: ACGIH: A4 -Not Classifiable as a Human Carcinogen
LOCAL EFFECTS:
Irritant: inhalation, eye
ACUTE TOXICITY LEVEL:
Moderately Toxic: ingestion
TARGET ORGANS: central nervous system
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: kidney disorders, liver disorders, respiratory disorders, skin disorders and allergies
TUMORIGENIC DATA: Available.
MUTAGENIC DATA: Available.
REPRODUCTIVE EFFECTS DATA: Available.
ADDITIONAL DATA: Alcohol may enhance the toxic effects.

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:
FISH TOXICITY: 6410000 ug/L 96 hour(s) LC50 (Mortality) Fathead minnow (Pimephales promelas)

INVERTEBRATE TOXICITY: 5504000 ug/L 48 hour(s) EC50 (Immobilization) Water flea (Daphnia magna)

OTHER TOXICITY: 2450000 ug/L 48 hour(s) LC50 (Mortality) Clawed toad (Xenopus laevis)

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.

14. TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101:
PROPER SHIPPING NAME: Butanols
ID NUMBER: UN1120
HAZARD CLASS OR DIVISION: 3
PACKING GROUP: II
LABELING REQUIREMENTS: 3

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:
SHIPPING NAME: Butanols
UN NUMBER: UN1120
CLASS: 3
PACKING GROUP/CATEGORY: II

15. REGULATORY INFORMATION

U.S. REGULATIONS:
CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4): Not regulated.

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart B): Not regulated.

SARA TITLE III SECTION 304 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR 355 Subpart C): Not regulated.

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370 Subparts B and C):
ACUTE: Yes
CHRONIC: No
FIRE: Yes
REACTIVE: No

SUDDEN RELEASE: No

SARA TITLE III SECTION 313 (40 CFR 372.65):
TERT-BUTYL ALCOHOL

OSHA PROCESS SAFETY (29 CFR 1910.119): Not regulated.

STATE REGULATIONS:
California Proposition 65: Not regulated.

CANADIAN REGULATIONS:
WHMIS CLASSIFICATION: Not determined.

NATIONAL INVENTORY STATUS:
U.S. INVENTORY (TSCA): Listed on inventory.

TSCA 12(b) EXPORT NOTIFICATION: Not listed.

CANADA INVENTORY (DSL/NDSL): Not determined.

16. OTHER INFORMATION

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SAFETY DATA SHEET

Version 3.5
Revision Date 11/04/2015
Print Date 05/01/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : *tert*-Butylbenzene

Product Number : B90602
Brand : Aldrich

CAS-No. : 98-06-6

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 3), H226
Eye irritation (Category 2A), H319
Acute aquatic toxicity (Category 2), H401
Chronic aquatic toxicity (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H226 Flammable liquid and vapour.
H319 Causes serious eye irritation.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.

P264	Wash skin thoroughly after handling.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P303 + P361 + P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P391	Collect spillage.
P403 + P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms : 2-Methyl-2-phenylpropane

Formula : $C_{10}H_{14}$

Molecular weight : 134.22 g/mol

CAS-No. : 98-06-6

EC-No. : 202-632-4

Hazardous components

Component	Classification	Concentration
tert-Butylbenzene		
	Flam. Liq. 3; Eye Irrit. 2A; Aquatic Acute 2; Aquatic Chronic 2; H226, H319, H411	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

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

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

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

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters
Contains no substances with occupational exposure limit values.

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

Splash contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 480 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Impervious clothing, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid, clear Colour: colourless
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -58 °C (-72 °F) - lit.
f)	Initial boiling point and boiling range	169 °C (336 °F) - lit.
g)	Flash point	34.0 °C (93.2 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower	Lower explosion limit: 0.8 %(V)

	flammability or explosive limits	
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	0.867 g/cm3 at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	log Pow: 3.80
p)	Auto-ignition temperature	450.0 °C (842.0 °F)
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
Vapours may form explosive mixture with air.

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

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

Inhalation: No data available

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

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

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: CY9120000

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

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC0 - Leuciscus idus (Golden orfe) - 44 mg/l - 48.0 h
	LC50 - Leuciscus idus (Golden orfe) - 65 mg/l - 48.0 h
Toxicity to daphnia and other aquatic invertebrates	LC50 - Daphnia magna (Water flea) - 41 mg/l - 24 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.
Toxic to aquatic life.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

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

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

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

15. REGULATORY INFORMATION

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

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

SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard

Massachusetts Right To Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components

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

New Jersey Right To Know Components

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

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquids

H226	Flammable liquid and vapour.
H319	Causes serious eye irritation.
H401	Toxic to aquatic life.
H411	Toxic to aquatic life with long lasting effects.

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	0

Further information

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Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 3.5 Revision Date: 11/04/2015 Print Date: 05/01/2016

SAFETY DATA SHEET

Version 4.17
Revision Date 03/03/2015
Print Date 02/18/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Trichlorofluoromethane

Product Number : 254991
Brand : Aldrich

CAS-No. : 75-69-4

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Dermal (Category 4), H312

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H312 Harmful in contact with skin.

Precautionary statement(s)
P280 Wear protective gloves/ protective clothing.
P302 + P352 + P312 IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell.
P363 Wash contaminated clothing before reuse.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms : Fluorotrichloromethane
CFC-11

Formula	:	CCl_3F CCl_3F
Molecular weight	:	137.37 g/mol
CAS-No.	:	75-69-4
EC-No.	:	200-892-3

Hazardous components

Component	Classification	Concentration
Trichlorofluoromethane		
	Acute Tox. 4; H312	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Hydrogen chloride gas, Hydrogen fluoride

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.
For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Recommended storage temperature 2 - 8 °C

Contents under pressure.
Storage class (TRGS 510): Non Combustible Liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Trichlorofluoromethane	75-69-4	C	1,000.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Cardiac sensitization Not classifiable as a human carcinogen		
		C	1,000.000000 ppm 5,600.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	1,000.000000 ppm 5,600.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		

8.2 Exposure controls

Appropriate engineering controls

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

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 480 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.2 mm
Break through time: 30 min

Material tested:Dermatril® P (KCL 743 / Aldrich Z677388, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

Control of environmental exposure
Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid, clear Colour: colourless
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	-110.99 - -109.99 °C (-167.78 - -165.98 °F)
f)	Initial boiling point and boiling range	23.7 °C (74.7 °F) - lit.
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	885.7 hPa (664.3 mmHg) at 20.0 °C (68.0 °F) 2,701.2 hPa (2,026.1 mmHg) at 55.0 °C (131.0 °F)
l)	Vapour density	No data available
m)	Relative density	1.494 g/cm3 at 25 °C (77 °F)
n)	Water solubility	1 g/l
o)	Partition coefficient: n-octanol/water	log Pow: 2.53
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available

t) Oxidizing properties No data available

9.2 Other safety information

Surface tension 18.0 mN/m at 25.0 °C (77.0 °F)

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing agents, Sodium/sodium oxides, Potassium, Magnesium, Aluminum, Zinc

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - > 15,000 mg/kg

LC50 Inhalation - Rat - 0.3 h - 130000 ppm
Remarks: Behavioral:Tremor. Behavioral:Convulsions or effect on seizure threshold. Respiratory disorder

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

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

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: PB6125000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated., Nausea, Dizziness, Headache, Vomiting, Diarrhoea, Abdominal pain, Weakness, Unconsciousness

Liver -

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3082 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (Trichlorofluoromethane)
Reportable Quantity (RQ): 5000 lbs

Poison Inhalation Hazard: No

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

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

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Trichlorofluoromethane	75-69-4	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Trichlorofluoromethane	75-69-4	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Trichlorofluoromethane	75-69-4	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Trichlorofluoromethane	75-69-4	2007-07-01

California Prop. 65 Components

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

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
H312	Harmful in contact with skin.

HMIS Rating

Health hazard:	1
Chronic Health Hazard:	
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	1
Fire Hazard:	0
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.17 Revision Date: 03/03/2015 Print Date: 02/18/2016

SAFETY DATA SHEET

Version 4.11
Revision Date 10/29/2015
Print Date 03/03/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Tetrahydrofuran

Product Number : 401757
Brand : Sigma-Aldrich
Index-No. : 603-025-00-0

CAS-No. : 109-99-9

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable liquids (Category 2), H225
Acute toxicity, Oral (Category 4), H302
Eye irritation (Category 2A), H319
Carcinogenicity (Category 2), H351
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H225 Highly flammable liquid and vapour.
H302 Harmful if swallowed.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H351 Suspected of causing cancer.

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and

	understood.
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233	Keep container tightly closed.
P240	Ground/bond container and receiving equipment.
P241	Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
P303 + P361 + P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P337 + P313	If eye irritation persists: Get medical advice/ attention.
P370 + P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

May form explosive peroxides.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	:	THF
Formula	:	C_4H_8O
Molecular weight	:	72.11 g/mol
CAS-No.	:	109-99-9
EC-No.	:	203-726-8
Index-No.	:	603-025-00-0
Registration number	:	01-2119444314-46-XXXX

Hazardous components

Component	Classification	Concentration
Tetrahydrofuran		
	Flam. Liq. 2; Acute Tox. 4; Eye Irrit. 2A; Carc. 2; STOT SE 3; H225, H302, H319, H335, H351	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

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

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

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

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

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

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Use explosion-proof equipment.Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Dry residue is explosive. Store under inert gas. Test for peroxide formation periodically and before distillation.
Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Tetrahydrofuran	109-99-9	TWA	50.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Central Nervous System impairment Upper Respiratory Tract irritation Kidney damage Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption		
		STEL	100.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Central Nervous System impairment Upper Respiratory Tract irritation Kidney damage Confirmed animal carcinogen with unknown relevance to humans Danger of cutaneous absorption		
		TWA	200.000000 ppm 590.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		ST	250.000000 ppm 735.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	200.000000 ppm 590.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Tetrahydrofuran	109-99-9	Tetrahydrofuran	2.0000 mg/l	Urine	ACGIH - Biological Exposure Indices (BEI)
	Remarks	End of shift (As soon as possible after exposure ceases)			

Derived No Effect Level (DNEL)

Application Area	Exposure routes	Health effect	Value
Workers	Skin contact	Long-term systemic effects	25mg/kg BW/d
Consumers	Skin contact	Long-term systemic effects	15mg/kg BW/d
Workers	Inhalation	Long-term local effects	150 mg/m3
Workers	Inhalation	Long-term systemic effects	150 mg/m3
Consumers	Inhalation	Long-term systemic effects	62 mg/m3
Consumers	Inhalation	Acute local effects	150 mg/m3
Consumers	Inhalation	Acute systemic effects	150 mg/m3

Predicted No Effect Concentration (PNEC)

Compartment	Value
Soil	2.13 mg/kg
Marine water	0.432 mg/l
Fresh water	4.32 mg/l
Marine sediment	2.33 mg/kg
Fresh water sediment	23.3 mg/kg
Onsite sewage treatment plant	4.6 mg/l

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Splash contact
Material: butyl-rubber
Minimum layer thickness: 0.3 mm
Break through time: 18 min
Material tested:Butoject® (KCL 897 / Aldrich Z677647, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid, clear Colour: colourless
b)	Odour	ether-like
c)	Odour Threshold	No data available
d)	pH	ca.7
e)	Melting point/freezing	Melting point/range: -108.44 °C (-163.19 °F) at 1,013.25 hPa (760.00

	point	mmHg)
f)	Initial boiling point and boiling range	65.0 - 67.0 °C (149.0 - 152.6 °F) at 1,013.25 hPa (760.00 mmHg)
g)	Flash point	-17.0 °C (1.4 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	Upper explosion limit: 11.8 %(V) Lower explosion limit: 1.8 %(V)
k)	Vapour pressure	170 hPa (128 mmHg) at 20.0 °C (68.0 °F)
l)	Vapour density	ca.2.5 at 25 °C (77 °F) - (Air = 1.0)
m)	Relative density	0.89 g/cm3
n)	Water solubility	soluble
o)	Partition coefficient: n-octanol/water	log Pow: 0.46
p)	Auto-ignition temperature	215 °C (419 °F) at 1,013 hPa (760 mmHg)
q)	Decomposition temperature	No data available
r)	Viscosity	0.518 mm2/s at 25 °C (77 °F) - 0.403 mm2/s at 50 °C (122 °F) -
s)	Explosive properties	Not explosive, In use may form flammable/explosive vapour-air mixture.
t)	Oxidizing properties	The substance or mixture is not classified as oxidizing.

9.2 Other safety information

Relative vapour density	ca.2.5 at 25 °C (77 °F) - (Air = 1.0)

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.
Test for peroxide formation before distillation or evaporation. Test for peroxide formation or discard after 1 year.

10.3 Possibility of hazardous reactions
Vapours may form explosive mixture with air.

10.4 Conditions to avoid
Heat, flames and sparks.

10.5 Incompatible materials
Strong oxidizing agents, Acids

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - 1,650 mg/kg

LC50 Inhalation - Rat - 6 h - 14.7 mg/l
Remarks: Material may be irritating to mucous membranes and upper respiratory tract.

LD50 Dermal - Rat - > 2,000 mg/kg

No data available

Skin corrosion/irritation
Based on available data, the classification criteria are not met.

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Risk of serious damage to eyes.
(Draize Test)

Respiratory or skin sensitisation
Based on available data, the classification criteria are not met.

Germ cell mutagenicity
In vivo tests did not show mutagenic effects

Ames test
S. typhimurium
Result: negative

Carcinogenicity

Suspected human carcinogens

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

Reproductive toxicity
No data available

No toxicity to reproduction

Specific target organ toxicity - single exposure
May cause drowsiness or dizziness. - Nervous system
May cause respiratory irritation.

Specific target organ toxicity - repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard
No aspiration toxicity classification

Additional Information
RTECS: LU5950000

Central nervous system depression, Cough, chest pain, Difficulty in breathing, Exposure to high airborne concentrations can cause anesthetic effects.

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Pimephales promelas (fathead minnow) - 2,160 mg/l - 96 h
Toxicity to daphnia and other aquatic invertebrates	EC50 - Daphnia magna (Water flea) - 382 mg/l - 24 h
Toxicity to algae	Growth inhibition IC50 - Algae - 3,700 mg/l - 192 h

12.2 Persistence and degradability

Biodegradability

(OECD Test Guideline 301)

Remarks: According to the results of tests of biodegradability this product is not readily biodegradable.

12.3 Bioaccumulative potential

No bioaccumulation is to be expected (log Pow <= 4).

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 2056 Class: 3 Packing group: II

Proper shipping name: Tetrahydrofuran

Reportable Quantity (RQ): 1000 lbs

Poison Inhalation Hazard: No

IMDG

UN number: 2056 Class: 3 Packing group: II EMS-No: F-E, S-D

Proper shipping name: TETRAHYDROFURAN

IATA

UN number: 2056 Class: 3 Packing group: II

Proper shipping name: Tetrahydrofuran

15. REGULATORY INFORMATION

SARA 302 Components

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

SARA 313 Components

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

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Tetrahydrofuran	109-99-9	1993-04-24

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Tetrahydrofuran	109-99-9	1993-04-24

New Jersey Right To Know Components

	CAS-No.	Revision Date
Tetrahydrofuran	109-99-9	1993-04-24

California Prop. 65 Components

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

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Carc.	Carcinogenicity
Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H319	Causes serious eye irritation.
H335	May cause respiratory irritation.
H351	Suspected of causing cancer.
STOT SE	Specific target organ toxicity - single exposure

HMIS Rating

Health hazard:	1
Chronic Health Hazard:	*
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	0

Further information

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Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.11 Revision Date: 10/29/2015 Print Date: 03/03/2016

Thallium

SAFETY DATA SHEET

1 PRODUCT AND SUPPLIER IDENTIFICATION

Product Name: Thallium Solid

Formula: Tl

Supplier: ESPI Metals
1050 Benson Way
Ashland, OR 97520

Telephone: 800-638-2581

Fax: 541-488-8313

Email: sales@espimetals.com

Emergency: Infotrac 800-535-5053 (US) or 352-323-3500 (24 hour)

Recommended Uses: Scientific Research

2 HAZARDS IDENTIFICATION

GHS Classification (29 CFR 1910.1200): Acute toxicity - oral, category 2.

GHS Label Elements:

Signal Word: Danger

Hazard Statements: H300 Fatal if swallowed.

Precautionary Statements: P264 Wash hands thoroughly after handling, P270 Do not eat, drink or smoke when using this product, P301+P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician, P330 Rinse mouth, P405 Store locked up, P501 Dispose of contents/container in accordance with local, state or federal regulations.

3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient: Thallium

CAS#: 7440-28-0

%: 100

EC#: 231-138-1

4 FIRST AID MEASURES

General Measures: Emergency responders should take care to avoid secondary exposure to thallium if it is present. Wear appropriate protective equipment.

INHALATION: Remove to fresh air, keep warm and quiet, give oxygen if breathing is difficult. Seek immediate medical attention. If mouth-to-mouth is necessary always use a barrier or bag-valve-mask device.

INGESTION: Rinse mouth with water. Do not induce vomiting. Seek immediate medical attention. Never induce vomiting or give anything by mouth to an unconscious person.

SKIN: Remove contaminated clothing, wash affected area with soap and water taking care not to break the skin and to cover all open wounds. Seek medical attention. Contaminated clothing should be safely contained and properly disposed of.

EYES: Flush eyes with lukewarm water, including under upper and lower eyelids, for at least 15 minutes. Seek medical attention immediately.

Most Important Symptoms/Effects, Acute and Delayed: Symptoms are usually delayed and include gastrointestinal distress and neurological symptoms. See section 11 for more information.

Indication of Immediate Medical Attention and Special Treatment: No other information available.

5 FIREFIGHTING MEASURES

Extinguishing Media: Use extinguishing media suitable for surrounding materials and type of fire.

Unsuitable Extinguishing Media: No further information available.

Specific Hazards Arising from the Material: Under fire conditions, thallium may release highly toxic fumes or gases.

Special Protective Equipment and Precautions for Firefighters: Full face, self-contained breathing apparatus and full protective clothing.

6 ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: Wear appropriate respiratory and protective equipment specified in section 8. Isolate spill area and provide ventilation. Avoid breathing dust or fume. Avoid contact with skin and eyes. Eliminate all sources of ignition.

Methods and Materials for Containment and Cleaning Up: Scoop up or vacuum with a system utilizing a HEPA filtration system and place in properly labeled sealed containers. Special precautions must be taken when changing filters on HEPA vacuum cleaners used to clean up hazardous materials. Avoid creating dusts. Avoid contamination of air and water.

Environmental Precautions: Do not allow to enter drains or to be released to the environment.

7 HANDLING AND STORAGE

Precautions for Safe Handling: Wear appropriate respiratory and protective equipment specified in section 8. Only trained personnel should work with this product. Handle in a well-ventilated area. Avoid exposure to high temperature. Avoid breathing fumes. Avoid contact with skin and eyes. Wash thoroughly before eating or smoking.

Conditions for Safe Storage, Including Any Incompatibilities: Store under dry, inert gas such as argon, or can also be stored under deaerated water. Store in sealed unbreakable containers; the original labeled shipping container when possible. Store in an area that is cool, dry and temperature-controlled, away from direct sunlight, heat and ignition sources or where freezing is possible. Do not store together with acids, halogens or oxidizers. See section 10 for more information on incompatible materials.

8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

Exposure Limits: Thallium (Soluble compounds, as Tl)

OSHA/PEL: 0.1 mg/m^3

ACGIH/TLV: 0.02 mg/m^3(inhalable)

Appropriate Engineering Controls: Handle in an enclosed, controlled process under dry argon. Whenever possible the use of local exhaust ventilation, process enclosure or other engineering controls is the preferred method of controlling exposure to meet established occupational exposure limits. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. Clothing worn in areas of exposure to thallium dust or vapor should be restricted to the workplace and stored in special lockers.

Individual Protection Measures, Such as Personal Protective Equipment:

Respiratory Protection: When potential exposures are above the occupational limits, approved respirators must be used.

Eye Protection: Splash goggles or safety glasses.

Skin Protection: Wear impermeable gloves, protective work clothing as necessary.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:

Form: Rod

Color: Gray metallic

Odor: Odorless

Odor Threshold: Not determined

pH: N/A

Melting Point: 303.5 ^{o}C

Boiling Point: 1457±10 ^{o}C

Flash Point: N/A

Evaporation Rate: N/A

Flammability: No data

Upper Flammable Limit: No data

Lower Flammable Limit: No data

Vapor Pressure: 1 mm Hg @ 825 ^{o}C

Vapor Density: N/A

Relative Density (Specific Gravity): 11.85 g/cc

Solubility in H_2O: Insoluble

Partition Coefficient (n-octanol/water): Not determined

Autoignition Temperature: No data

Decomposition Temperature: No data

Viscosity: N/A

10 STABILITY AND REACTIVITY

Reactivity: No data

Chemical Stability: Stable under recommended storage conditions.

Possibility of Hazardous Reactions: High temperatures will generate toxic thallium oxide fumes.

Conditions to Avoid: Avoid high temperatures, reacts slowly with moist air.

Incompatible Materials: Oxidizing agents, strong acids, halogens, air and moisture.

Hazardous Decomposition Products: Thallium oxide fume.

11 TOXICOLOGICAL INFORMATION

Likely Routes of Exposure: Inhalation, skin and eyes.

Symptoms of Exposure: Abdominal pain and vomiting, extreme pain in the extremities, lethargy, hair loss.

Acute and Chronic Effects: Almost all of the available information refers to ingestion of thallium compounds, largely due to accidental ingestion, intentional poisoning and suicide attempts. Adverse reactions are dose dependent and occur in 3 stages. Massive doses may cause gastrointestinal distress (nausea, vomiting and abdominal pain) within 30 minutes but symptoms are usually delayed for 8 hours or longer. Gastrointestinal symptoms from smaller doses may

be delayed 24-48 hours. This is followed by neurological effects 2-5 days or even longer after ingestion, although it may occur as early as 12 hours after massive exposure. Other effects include hair loss, severe pain in the extremities, lethargy, ataxia, back pain, abnormal reflexes, neuropathy, muscle weakness, mental abnormalities, tremors, abnormal vision, headache, coma, convulsion, and death. There was no information available for exposure to thallium metal specifically rather than thallium compounds, and little conclusive information regarding exposure via inhalation.

Acute Toxicity: No data

Carcinogenicity: **NTP**: Not identified as carcinogenic **IARC**: Not identified as carcinogenic

To the best of our knowledge the chemical, physical and toxicological characteristics of the substance are not fully known.

12 ECOLOGICAL INFORMATION

Ecotoxicity: LC50 - Cyprinodon variegatus (sheepshead minnow) - 21.0 mg/l - 96.0 h

Persistence and Degradability: No data

Bioaccumulative Potential: No data

Mobility in Soil: No data

Other Adverse Effects: Do not allow material to be released to the environment. No further relevant information available.

13 DISPOSAL CONSIDERATIONS

Waste Disposal Method:

Product: Dispose of in accordance with Federal, State and Local regulations.

Packaging: Dispose of in accordance with Federal, State and Local regulations.

14 TRANSPORT INFORMATION

UN Number: UN3288

UN Proper Shipping Name: Toxic solid, inorganic, n.o.s. (Thallium)

Transport Hazard Class: 6.1

Packing Group: II

Marine Pollutant: Yes

15 REGULATORY INFORMATION

TSCA Listed: All components are listed.

Regulation (EC) No 1272/2008 (CLP): Acute toxicity - oral, category 2, Hazardous to the aquatic environment - acute hazard, category 3, Hazardous to the aquatic environment - chronic hazard, category 3.

Canada WHMIS Classification (CPR, SOR/88-66): Acute toxicity.

HMIS Ratings: **Health**: 3 **Flammability**: 0 **Physical**: 0

NFPA Ratings: **Health**: 3 **Flammability**: 0 **Instability**: 0

Chemical Safety Assessment: A chemical safety assessment has not been carried out.

16 OTHER INFORMATION

The information contained in this document is based on the state of our knowledge at the time of publication and is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. ESPI Metals makes no representation, warranty, or guarantee of any kind with respect to the information contained in this document or any use of the product based on this information. ESPI Metals shall not be held liable for any damages resulting from handling or from contact with the above product. Users should satisfy themselves that they have all current data relevant to their particular use.

Prepared by: ESPI Metals

Revised/Reviewed: July 2015

Safety Data Sheets (SDS)

SECTION 1-IDENTIFICATION

Product name: Toluene

Other names:-

Proper shipping name: Toluene

Recommended use of the chemical and restrictions on use:
The major use of toluene is as a mixture added to gasoline to improve octane ratings. Used as a solvent for paint, resins, lacquers inks & adhesives. Component of solvent blends and thinners. Used in the manufacture of chemicals, dyes, explosives, benzoic acid. Some grades of toluene may contain traces of xylene and benzene.
The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Before starting consider control of exposure by mechanical ventilation.
WARNING: Intentional misuse by concentrating/inhaling contents may be lethal.

Manufacturer/Supplier Name: Taiwan SM Corp., Kaohsiung plant
Address: NO.7, Industrial 1st Rd, Lin-Yuan Kaohsiung County 83203, Taiwan, R.O.C.
Phone No.: 886-7-6414511

Emergency phone No./Fax No.: 886-7-6414511 Ext. 221 (on duty), 886-7-6414517 (off duty)/886-7-6423828

SECTION 2-HAZARDS IDENTIFICATION

GHS Classification:

Flammable Liquid Category 2
Acute Toxicity (Oral) Category 4
Skin Corrosion/ Irritation Category 2
Serious Eye Damage/ Eye Irritation Category 2
Specific Target Organ Toxicity Repeated Exposure Category 2
Hazardous To The Aquatic Environment (Acute) Category 3
Aspiration Hazard Category 1

GHS Label elements:

Hazard symbols

Signal word

Danger

Hazard statements

Highly flammable liquid and vapor
Harmful if inhaled
Causes skin irritation
Causes serious eye irritation
May cause damage to organs through prolonged or repeated exposure.
May cause long lasting harmful effects to aquatic life.
May be fatal if swallowed and enters airways.

Precautionary statements

Use only in well ventilated area.
Control of exposure by mechanical ventilation in an unventilated or confined space.
Avoid breathing vapors and contact with skin and eyes.
Wear breathing apparatus/protective gloves/face protection.
Store in well-ventilated place.
Disposal must be in accordance with applicable federal, state, or local regulations.

Other hazards: —

SECTION 3-COMPOSITION/INFORMATION ON INGREDIENTS

CAS No.	Chemical Name	wt% by weight	EINECS No.
00108-88-3	Toluene	97.0 min.	203-625-9
Synonyms	**Methylbenzol; Methylbenzene; Toluol; Phenylmethane**		

SECTION 4-FIRST AID MEASURES

Description of necessary first aid measures

Eye:

1. Flush immediately with warm water for at least 20 minutes.
2. Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
3. If pain persists or recurs seek medical attention.
4. Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin:

1. Removing contaminated clothing, shoes, and leathery wearings, cleaning procedure is available before reused or waste treatment.
2. Washing affected area thoroughly with soap and water for at least 20 minutes.
3. Call a Physician if irritation develops or persists.

Ingestion:

1. If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomits.
2. If victim is conscious and alert, give 2～4 cupfuls of milk/water to dilute the substance in stomach.
3. Never give anything by mouth to an unconscious person.
4. Don't induce vomiting unless directed to do so by medical person.
5. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
6. Then seek for medical attention.

Inhalation:

1. Remove from further exposure and flush thoroughly with air.
2. Lay patient down. Keep warm and rested.
3. Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
4. If respiratory irritation, seek immediate medical assistance and call a physician.

Most important symptoms/effects, acute and delayed

Headache, fatigue, drowsiness, insomnia, anorexia and pain in limbs, nervousness, impairment of memory.

Indication of immediate medical attention and special treatment needed, if necessary

For acute or short term repeated exposures to toluene:

Inhalation:

1. Inhalation overexposure can produce toxic effects. Monitor for respiratory distress.
2. If cough or difficulty in breathing develops, evaluate for upper respiratory tract inflammation, bronchitis, and pneumonitis. Administer supplemental oxygen with assisted ventilation, as required.
3. This material (or a component) sensitizes the heart to the effects of sympathomimetic amines. Epinephrine and other sympathomimetic drugs may initiate cardiac arrhythmias in individuals exposed to this material.
4. Administration of sympathomimetic drugs should be avoided.

Ingestion:

1. If ingested, this material presents a significant aspiration and chemical pneumonitis hazard.
2. Induction of emesis is not recommended.
3. Consider activated charcoal and/or gastric lavage.
4. If patient is obtunded, protect the airway by cuffed endotracheal intubation or by placement of the body in a Trendelenburg and left lateral decubitus position.

SECTION 5-FIRE FIGHTING MEASURES

Extinguishing media

Foam、CO_2、Dry chemical、Water fog.

Specific hazards arising from the chemical

1. Liquid and vapor are highly flammable.
2. Severe fire hazard when exposed to heat, flame and/or oxidizers.
3. Vapor may travel a considerable distance to source of ignition.
4. Heating may cause expansion or decomposition leading to violent rupture of containers.
5. On combustion, may emit toxic fumes of carbon monoxide (CO).

Special protective equipment and precautions for fire-fighters

1. Firefighters must use full bunker gear including NIOSH-approved positive pressure self-contained breathing apparatus to protect against potential hazardous combustion or decomposition products and oxygen deficiencies.
2. Evacuate area and fight the fire from a maximum distance or use unmanned hose holders or monitor nozzles.
3. Cover pooling liquid with foam.
4. Containers can build pressure if exposed to radiant heat; cool adjacent containers with flooding quantities of water until well after the fire is out.
5. Withdraw immediately from the area if there is a rising sound from a venting safety device or discoloration of vessels, tanks, or pipelines.
6. Be aware that burning liquid will float on water.
7. Notify appropriate authorities of potential fire and explosion hazard if liquid enter sewers or waterways

SECTION 6-ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedure

1. Personal protective equipment (specified in Section 8)
   Eyes : Chemical safety goggles are recommended, and a face shield is added when needed.
   Skin : Wear appropriate protective gloves to avoid skin contact.
   Clothing: When direct contact is likely, use rubberized clothings, apron and boots.
   Respiratory : When limits are exceeded, wear a respirator approved by NIOSH/MSHA for protection against organic dust, mists and vapors.
2. Remove all sources of ignition. No smoking, naked lights or ignition sources. Ventilate area of leak or spill.
3. Keep unnecessary and unprotected personnel from entering. Evacuate personnel from the danger area. Consult with an expert about the emergency procedures.

Environmental precautions

1. Prevent spillage from entering drains, surface, and groundwater.
2. Contain and recover liquid when possible. Use non-sparking tools and equipment.
3. Collect liquid in an appropriate container or absorb with an inert material (e.g. vermiculite, dry sand, earth), and place in a chemical waste container.
4. Report the accidental spill/release to Local/State government.

Methods and materials for containment and cleaning up

Minor spill:

1. Remove all ignition sources.
2. Clean up all spills immediately.
3. Avoid breathing vapors and contact with skin and eyes.
4. Control personal contact by using protective equipment.
5. Contain and absorb small quantities with vermiculite or other absorbent material.
6. Wipe up.
7. Collect residues in a flammable waste container.

Major spill

1. Clear area of personnel and move upwind.
2. Alert emergency responders and tell them location and nature of hazard.
3. May be violently or explosively reactive.
4. Wear breathing apparatus plus protective gloves.
5. Prevent spillage from entering drains or water course.
6. No smoking, naked lights or ignition sources. Increase ventilation.
7. Stop leak if safe to do so.
8. Water spray or fog may be used to disperse/absorb vapor.
9. Contain spill with sand, earth or vermiculite.
10. Use only spark-free shovels and explosion proof equipment.
11. Collect recoverable product into labeled containers for recycling..
12. Absorb remaining product with sand, earth or vermiculite.
13. Collect solid residues and seal in labeled drums for disposal.
14. Wash area and prevent runoff into drains.
15. If contamination of drains or waterways occurs, advise emergency services.

SECTION 7-HANDLING AND STORAGE

Precautions for safe handling

1. Wash thoroughly after handling.
2. Use only in well ventilated area.
3. Ground and bond containers when transferring.
4. Use spark-free tools and explosion proof equipment.
5. Empty containers retain product residue (liquid/vapor), and can be dangerous.
6. Do not pressurize, cut, weld, braze, solder, drill, or expose empty containers to heat, sparks or open flames.

Conditions for safe storage, including any incompatibilities

1. Store in original containers in approved flame-proof area.
2. No smoking, naked lights, heat or ignition sources.
3. DO NOT store in pits, depressions, basements or areas where vapors may be trapped.
4. Keep containers securely sealed.
5. Store away from incompatible materials in a cool, dry well ventilated area.
6. Protect containers against physical damage and check regularly for leaks.
7. Keep containers tightly closed and store in a cool, dry, well-ventilated place, plainly labeled, and out of closed vehicles.
8. Ground all equipment containing this material.
9. Observe manufacturer's storing and handling recommendations.
10. Containers should be able to withstand pressures expected from warming and cooling in storage. This flammable liquid should be stored in a separate safety cabinet or room. A refrigerated room is preferable for materials with a flash point temperature lower than 70°F (21°C).

SECTION 8-EXPOSURE CONTROLS, PERSONAL PROTECTION

OSHA - Final PELs : 200 ppm TWA.
OSHA Ceiling : 300ppm.
ACGIH : 50 ppm, skin -potential forcutaneous absorption.
NIOSH : 100 ppm TWA; 375 mg/m^3 TWA; 500 ppm IDLH.
Taiwan TWA : 100 ppm (skin).
Taiwan STEL : 125 ppm (skin).
Taiwan Ceiling : -------.
Taiwan BEI : 1 mg/l (before on duty).

Engineering control

1. Process should be located at least 17 meter (50 feet) away from open flames and all high temperature operations likely to cause ignition of the styrene monomer vapor.
2. In venting styrene monomer vapors, consideration should be given to possible halogenation of the vapors by low concentrations of free chlorine and bromine with the resultant formation of lacrimations.
3. Process should be designed so that the operator is not exposed to direct contact with Toluene or the vapor. The technical problems of designing equipment, providing adequate ventilation and operating procedures which promise maximum security and economy, can best be handled by competent engineers.
4. It is essential for safety that equipment be used and maintained as recommended by the manufacturer.
5. Tanks used to store or process Toluene should be closed vessels vented to a safe point of discharge in the outside atmosphere away from operating stations, roadways, and at least 17 meter (50 feet) from possible sources of ignitions. All sparks, flames, heated surface, or other sources of ignition should be kept away from all vents. It is advisable, to provide suction on vessels when inspection or observation openings are made, to minimize or eliminate escape of vapors.

Personal protective equipment

Eye Protection:
Safety glasses equipped with side shields are recommended as minimum protection in industrial settings. Chemical goggles should be worn during transfer operations or when there is a likelihood of misting, splashing, or spraying of this material. A suitable emergency eye wash water and safety shower should be located near the work station.

Skin protection:
Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Clothing:
Avoid skin contact. Wear long-sleeved fire-retardant garments (e.g., Nomex®) while working with flammable and combustible liquids. Additional chemical-resistant protective gear may be required if splashing or spraying conditions exist. This may include an apron, boots and additional facial protection. If product comes in contact with clothing, immediately remove soaked clothing and shower. Promptly remove and discard contaminated leather goods.

Respirators:
For known vapor concentrations above the occupational exposure guidelines (see below), use a NIOSH-approved organic vapor respirator if adequate protection is provided. Protection factors vary depending upon the type of respirator used. Respirators should be used in accordance with OSHA requirements (29 CFR 1910.134). For airborne vapor concentrations that exceed the recommended protection factors for organic vapor respirators, use a full-face, positive-pressure, supplied air respirator. Due to fire and explosion hazards, do not enter atmospheres containing concentrations greater than 10% of the lower flammable limit of this product.

SECTION 9-PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Transparent liquid	Upper/lower explosive limits : 1.2%～7.1%
Odour : pleasant aromatic petroleum odour	Vapor Pressure : 22 mmHg @20℃/68℉
Odour threshold : 0.16～37 ppm (detect) 1.9～69 ppm (recognition)	Vapor Density : 3.1 (air=1)
PH : Not available	Relative density : 0.86 (water=1)
Melting/Freezing Point : －95 ℃	Solubility in water : 54～58 mg/100 ml
Initial boiling point/boiling range : 110.6 ℃	Partition coefficient : 2.73 (n-octanol/water)
Flash point : 4.4 ℃ (closed cup)	Auto-ignition temperature : 480℃
Evaporation Rate : 2.24 (BuAc=1)	Decomposition temperature : Not available
Flammability (solid/gas) : Not available	Viscosity : 0.6 mPa.s max @20℃
Molecular Formula : $C_6H_5CH_3$	Molecular Weight : 92.056

SECTION 10-STABILITY AND REACTIVITY

Reactivity
Vapor is explosive when exposed to heat or flame

Chemical stability
Stable at room temperature in closed containers under normal storage and handling conditions.

Possibility of hazardous reaction
Has not been reported.

Condition to avoid
Product is highly flammable – Keep away from sources of ignition. Avoid the higher temperatures. Keep away from open fire, heating elements and heat radiating surface and prevent from forming of the vapours mixtures with air in explosion limits.

Incompatible materials
Heat, flame, strong oxidizers, nitric and sulfuric acids, chlorine, nitrogen tetraoxide; will attack some forms of plastics, rubber, coatings.

Hazardous decomposition products
Carbon monoxide, carbon dioxide, hydrocarbons.

SECTION 11-TOXICOLOGICAL INFORMATION

Routes of exposure
Eye, Skin, inhalation, Ingestion.

Symptoms (treatments as indicated in Section 4)
Eye: The liquid produces a high level of eye discomfort and is capable of causing pain and severe conjunctivitis. Corneal injury may develop, with possible permanent impairment of vision, if not promptly and adequately treated. There is evidence that material may produce eye irritation in some persons and produce eye damage 24 hours or more after instillation. Severe inflammation may be expected with pain. There may be damage to the cornea. Unless treatment is prompt and adequate there may be permanent loss of vision. Conjunctivitis can occur following repeated exposure.

Skin: Contact with the material may damage the health of the individual; systemic effects may result following absorption. The material may cause moderate inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterized by redness, swelling and blistering. Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

Ingestion: Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual. Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733). Considered an unlikely route of entry in commercial/industrial environments. The liquid may produce gastrointestinal discomfort and may be harmful if swallowed. Ingestion may result in nausea, pain and vomiting. Vomit entering the lungs by aspiration may cause potentially lethal chemical pneumonitis.

Inhalation: Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual. There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo. Inhalation of high concentrations of gas/vapour causes lung irritation with coughing and nausea, central nervous depression with headache and dizziness, slowing of reflexes, fatigue and inco-ordination. If exposure to highly concentrated solvent atmosphere is prolonged this may lead to narcosis, unconsciousness, even coma and possible death. The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Before starting consider control of exposure by mechanical ventilation.

Chronic exposure: There has been some concern that this material can cause cancer or mutations but there is not enough data to make an assessment. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.

Toxicity
LD50: <870 mg/kg (rat, oral)
LC50: 6000 ppm/6h (rat, inhalation)

Chronic effect
Carcinogenicity:
ACGIH : A4-Not classifiable as a Human Carcinogen.
OSHA : Possible select carcinogen.
IARC : Group 3 carcinogen.

Epide miology: Not available.

Teratogenicity: Teratogenic effects have occurred in experimental animals.

Reproductive Effects: Adverse reproductive effects have occurred in experimental animals.

Neurotoxicity: Not available.

Mutagenicity: Not available.

SECTION 12-ECOLOGICAL INFORMATION

Ecotoxicity
LC_{50} (96 hr.) Fish: 7.3～22.8 mg/l
EC_{50} (48 hr.) Water flea: —
Biocencentration factor (BCF): 1.67～380

Persistence and degradability
1. The material are expected to form a slick on the surface of waters after release in calm sea conditions. This is expected to evaporate and enter the atmosphere where it will be degraded through reaction with hydroxyl radicals.
2. Some of the material will become associated with benthic sediments, and it is likely to be spread over a fairly wide area of sea floor. Marine sediments may be either aerobic or anaerobic. The material, in probability, is biodegradable, under aerobic conditions. Evidence also suggests that the hydrocarbons may be degradable under anaerobic conditions although such degradation in benthic sediments may be a relatively slow process.
3. Under aerobic conditions the material will degrade to water and carbon dioxide, while under aerobic processes it will produce water, methane, carbon dioxide and carbon dioxide.
4. Based on test results, as well as theoretical considerations, the potential for bioaccumulation may be high. Toxic effects are often observed in species such as blue mussel, daphnia, freshwater green algae, marine copepods and amphipods.

Half-life (Air): 10～104 hr
Half-life (Surface water): 96～528 hr
Half-life (Ground water): 168～672 hr
Half-life (Soil): 96～528 hr

Bioaccumulative potential
This material is not expected to significantly bioaccumulate.

Mobility in soil: —

Other adverse effects: —

SECTION 13-DISPOSAL CONSIDERATIONS

Residues and spilled material are hazardous waste due to ignitability. Disposal must be in accordance with applicable federal, state, or local regulations.
The container for this product can present explosion or fire hazards, even when emptied. To avoid risk of injury, do not cut, puncture, or weld on or near this container. Since the emptied containers retain product residue, follow label warnings even after container is emptied.

SECTION 14-TRANSPORTATION INFORMATION

US DOT	Shipping Name	Toluene	Hazard Labels	
	Hazard Class	3		
	UN Number	1294		
	Packing Group	II		
Sea(IMO/IMDG)	Shipping Name	Toluene	Hazard Labels	
	Hazard Class	3.2		
	UN Number	1294		
	Packing Group	II		
	IMDG Code Page	3285		
	MARPOL	Not a DOT "Marine Pollutant" per 49 CFR 171.8.		
Air(ICAO/IATA)	Shipping Name	Toluene	Hazard Labels	
	Hazard Class	3.2		
	Subsidiary Class	1294		
	Packing Group	II		
RID/ ADR	No information available.			
Canadian TDG	Shipping Name	Toluene	Hazard Labels	
	Hazard Class	3		
	UN Number	1294		
	Packing Group	II		
	Subsidiary Class	9.2		

SECTION 15-REGULATORY INFORMATION

US FEDERAL

TSCA

CAS# 108-88-3 is listed on the TSCA inventory.

Health & Safety Reporting List

CAS# 108-88-3: Effective Date: 10/4/82; Sunset Date: 10/4/92

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

SARA

Section 302 (RQ)

CAS# 108-88-3 : final RQ = 1000 pounds (454 kg)

Section 302 (TPQ)

None of the chemicals in this material have a TPQ.

SARA Codes

CAS# 108-88-3 : acute, flammable.

Section 313

This material contains Toluene (CAS# 108-88-3, 99% & 100%), which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 372.

Clean Air Act

CAS# 108-88-3 is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act

CAS# 108-88-3 is listed as a Hazardous Substance under the CWA.
CAS# 108-88-3 is listed as a Priority Pollutant under the Clean Water Act.
CAS# 108-88-3 is listed as a Toxic Pollutant under the Clean Water Act.

OSHA

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

Toluene can be found on the following state right to know lists: California, New Jersey, Florida, Pennsylvania, Minnesota, Massachusetts.

WARNING: This product contains Toluene, a chemical known to the state of California to cause birth defects or other reproductive harm.

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XN F
Risk Phrases : R 10 Flammable.
R 20 Harmful by inhalation.
Safety Phrases : S 9 Keep container in a well-ventilated place.
S 16 Keep away from sources of ignition - No smoking.
S 25 Avoid contact with eyes.
S 29 Do not empty into drains.
S 33 Take precautionary measures against static discharges.

WGK (Water Danger/Protection)

CAS# 108-88-3: 2

United Kingdom Occupational Exposure Limits

CAS# 108-88-3: OES-United Kingdom, TWA 50 ppm TWA; 191 mg/m3 TWA.
CAS# 108-88-3: OES-United Kingdom, STEL 150 ppm STEL; 574 mg/m3 STEL.

CANADA

CAS#100-42-5 is listed on Canada's DSL/NDSL list.
This product has a WHMIS classification of B2, D2A (99%)/B3, D2A (100%).
CAS# 105-05-5 is not listed on Canada's Ingredient Disclosure List.

Exposure Limits

- CAS# 108-88-3: OEL-AUSTRALIA:TWA 100 ppm (375 mg/m3);STEL 150 ppm (560 mg/m3)
- OEL-BELGIUM:TWA 100 ppm (377 mg/m3);STEL 150 ppm (565 mg/m3)
- OEL-CZECHOSLOVAKIA:TWA 200 mg/m3;STEL 1000 mg/m3
- OEL-DENMARK:TWA 50 ppm (190 mg/m3);Skin
- OEL-FINLAND:TWA 100 ppm (375 mg/m3);STEL 150 ppm; Skin
- OEL-FRANCE:TWA 100 ppm (375 mg/m3);STEL 150 ppm (560 mg/m3)
- OEL-GERMANY:TWA 100 ppm (380 mg/m3)
- OEL-HUNGARY:TWA 100 mg/m3;STEL 300 mg/m3;Skin
- OEL-JAPAN:TWA 100 ppm (380 mg/m3)
- OEL-THE NETHERLANDS:TWA 100 ppm (375 mg/m3);Skin
- OEL-THE PHILIPPINES:TWA 100 ppm (375 mg/m3)
- OEL-POLAND:TWA 100 mg/m3
- OEL-RUSSIA:TWA 100 ppm; STEL 50 mg/m3
- OEL-SWEDEN:TWA 50 ppm (200 mg/m3);STEL 100 ppm (400 mg/m3);Skin
- OEL-SWITZERLAND:TWA 100 ppm (380 mg/m3);STEL 500 ppm
- OEL-THAILAND:TWA 200 ppm; STEL 300 ppm
- OEL-TURKEY:TWA 200 ppm (750 mg/m3)
- OEL-UNITED KINGDOM:TWA 100 ppm (375 mg/m3);STEL 150 ppm; Skin OEL IN BULGARIA, COLOMBIA, JORDAN, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

SECTION 16-OTHER INFORMATION

References and sources

1. CHEMINFO Data Bank, CCINFO CD, 2005-3
2. HAZARD TEXT Data Bank, TOMES PLUS CD, Vol.65, 2005
3. RETECS Data Bank, TOMES CPS CD, Vol.65, 2005
4. HSDB Data Bank, TOMES CPS CD, Vol.65, 2005
5. Hazardous Substance Data Bank, Environment Protection, Administration, Executive Yuan, ROC (Taiwan)
6. Chemwatch Data Bank, 2005-1
7. SDS, GHS in Taiwan, Council of Labor Affairs, Executive Yuan, ROC (Taiwan)

Version	Date	Remark
Version 1	06/01/1998	Original Version.
Version 2	04/20/2001	Updated 10 sections to 16 sections.
Version 3	08/01/2003	Updated “SECTION 9-PHYSICAL AND CHEMICAL PROPERTIES”.
Version 4	01/01/2006	Updated “SECTION 14-TRANSPORTATION INFORMATION”.
Version 5	08/05/2008	Updated each section by GHS SDS.
Prepared by	Safety & Environment Protection Section, Taiwan SM Corporation Kaohsiung Plant.	

SAFETY DATA SHEET
Xylene

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Date issued 11.11.2013

1.1. Product identifier

Product name	Xylene
Chemical name	Xylene
Synonyms	Xylol, dimethyl benzene, xylenol
REACH Reg No.	01-2119488216-32-0000
CAS no.	1330-20-7
EC no.	215-535-7
Index no.	601-022-00-9
Article no.	13000000

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/preparation For the preparation of paints and as a solvent. General purpose cleaner.

1.3. Details of the supplier of the safety data sheet

Manufacturer

Company name	Fred Holmberg & Co AB
Office address	Geijersgatan 8
Postal address	Box 60056
Postcode	S-216 10
City	Limhamn
Country	Sweden
Tel	+46 (0)40 15 79 20
Fax	+46 (0)40 16 22 95
E-mail	info@holmberg.se
Website	http://www.holmberg.se/en/

1.4. Emergency telephone number

Emergency telephone 112 (Europe)

SECTION 2: Hazards identification

2.1. Classification of substance or mixture

Classification according to 67/548/EEC or 1999/45/EC	Xi; R38 Xn; R20/21 R10
Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]	Flam. Liq. 3; H226; Acute tox. 4; H312; Skin Irrit. 2; H315; Acute tox. 4; H332;

2.2. Label elements

Hazard Pictograms (CLP)

Signal word	Danger
Hazard statements	H226 Flammable liquid and vapour. H312 Harmful in contact with skin. H315 Causes skin irritation. H332 Harmful if inhaled.
Precautionary statements	P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking. P233 Keep container tightly closed. P243 Take precautionary measures against static discharge. P280 Wear protective gloves/protective clothing/eye protection/face protection. P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. P303 + P361 + P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P331 Do NOT induce vomiting. P403 + P235 Store in a well-ventilated place. Keep cool.

2.3. Other hazards

Other hazards	Not known.

SECTION 3: Composition/information on ingredients

3.2. Mixtures

Substance	Identification	Classification	Contents
Xylene	CAS no.: 1330-20-7 EC no.: 215-535-7 Index no.: 601-022-00-9	R10 Xn; R20/21 Xi; R38 Flam. Liq. 3; H226 Acute tox. 4; H332 Acute tox. 4; H312 Skin Irrit. 2; H315 Note : C	75 - 90 %
Ethylbenzene	CAS no.: 100-41-4 EC no.: 202-849-4 Index no.: 601-023-00-4 Synonyms: Ethylbenzene	F; R11 Xn; R20 Flam. Liq. 2; H225 Acute tox. 4; H332	10 - 25 %

Column headings	CAS no. = Chemical Abstracts Service; EU (Einecs or Elincs number) = European inventory of Existing Commercial Chemical Substances; Ingredient name = Name as specified in the substance list (substances that are not included in the substance list must be translated, if possible). Contents given in; %, %wt/wt, %vol/wt, %vol/vol, mg/m3, ppb, ppm, weight%, vol%
HH/HF/HE	T+ = Very toxic, T = Toxic, C = Corrosive, Xn = Harmful, Xi = Irritating, E = Explosive, O = Oxidizing, F+ = Extremly flammable, F = Very flammable, N = Environmental hazard

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation	Move the exposed person to fresh air at once. Get medical attention if any discomfort continues.
Skin contact	Remove contaminated clothes and rinse skin thoroughly with water.
Eye contact	Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyes wide apart. Get medical attention if any discomfort continues.
Ingestion	NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! Do not induce vomiting. Rinse mouth with water. Get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

Information for health personnel	Treat Symptomatically. Do not give victim anything to drink if he is

unconscious.

4.3. Indication of any immediate medical attention and special treatment needed

Specific details on antidotes	No recommendation given.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media	Extinguish with alcohol-resistant foam, carbon dioxide, dry powder or water fog.

5.2. Special hazards arising from the substance or mixture

Fire and explosion hazards	Solvent vapours may form explosive mixtures with air.
Hazardous combustion products	Fire creates: Carbon monoxide (CO). Carbon dioxide (CO2).

5.3. Advice for firefighters

Fire fighting procedures	No specific fire fighting procedure given.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Personal protection measures	Ensure suitable personal protection (including respiratory protection) during removal of spillages in a confined area. Ventilate well. Stop leak if possible without risk. Avoid contact with skin and eyes. Do not breathe vapour.

6.2. Environmental precautions

Environmental precautionary measures	Avoid discharge into drains, water courses or onto the ground.

6.3. Methods and material for containment and cleaning up

Cleaning method	Dam and absorb spillages with sand, earth or other non-combustible material.

6.4. Reference to other sections

Other instructions	No recommendation given.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Handling	Keep away from heat, sparks and open flame. Take precautionary measures against static discharges. Mechanical ventilation may be required.

Protective Safety Measures

Advice on general occupational hygiene	Provide easy access to water supply and eye wash facilities.

7.2. Conditions for safe storage, including any incompatibilities

Storage	Keep away from heat, sparks and open flame. Ground container and transfer equipment to eliminate static electric sparks. Store in a cool and well-ventilated place.

7.3. Specific end use(s)

Specific use(s)	Not entered.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

DNEL / PNEC

Method of testing	Contents
DNEL	Group: Industrial Exposure route: Inhalation Exposure frequency: Short term (acute) Critical Component: Etylbenzen Value: 289 mg/kg/dag

DNEL	Group: Industrial Exposure route: Inhalation Exposure frequency: Long term (repeated) Critical Component: Etylbenzen Type of effect: Systemic effect Value: 77 mg/kg/dag
DNEL	Group: Industrial Exposure route: Dermal Exposure frequency: Long term (repeated) Critical Component: Etylbenzen Type of effect: Systemic effect Value: 180 mg/kg/dag
DNEL	Group: Consumer Exposure route: Inhalation Exposure frequency: Long term (repeated) Critical Component: Etylbenzen Type of effect: Systemic effect Value: 14,8 mg/kg/dag
DNEL	Group: Consumer Exposure route: Dermal Exposure frequency: Long term (repeated) Critical Component: Etylbenzen Type of effect: Systemic effect Value: 108 mg/kg/dag
DNEL	Group: Consumer Exposure route: Oral Exposure frequency: Long term (repeated) Critical Component: Etylbenzen Type of effect: Systemic effect Value: 1,6 mg/kg/dag
DNEL	Group: Industrial Exposure route: Inhalation Exposure frequency: Short term (acute) Critical Component: xylen Value: 442 mg/kg/dag
DNEL	Group: Industrial Exposure route: Inhalation Exposure frequency: Long term (repeated) Critical Component: xylen Type of effect: Systemic effect Value: 221 mg/kg/dag
DNEL	Group: Industrial Exposure route: Dermal Exposure frequency: Long term (repeated) Critical Component: xylen Type of effect: Systemic effect Value: 3182 mg/kg/dag
DNEL	Group: Consumer Exposure route: Inhalation Exposure frequency: Short term (acute) Critical Component: xylen Value: 260 mg/kg/dag
DNEL	Group: Consumer Exposure route: Inhalation Exposure frequency: Long term (repeated) Critical Component: xylen Type of effect: Systemic effect

	Value: 65,3 mg/kg/dag
DNEL	Group: Consumer Exposure route: Dermal Exposure frequency: Long term (repeated) Critical Component: xylen Type of effect: Systemic effect Value: 1872 mg/kg/dag
DNEL	Group: Consumer Exposure route: Oral Exposure frequency: Long term (repeated) Critical Component: xylen Type of effect: Systemic effect Value: 12,5 mg/kg/dag
Exposure guidelines	Country of origin: Sverige Limit value type: NGV 200 mg/m3 OEL Short Term Value: 450 mg/m3 Source: Nationella hygieniska gränsvärden, AFS 2005:17
Other Information	Ovanstående NGV resp. KTV gäller både xylen och etylbenzen

8.2. Exposure controls

Occupational exposure limits: Provide adequate ventilation. Observe Occupational Exposure Limits and minimise the risk of inhalation of vapours. Protective gloves and goggles are recommended. Provide eyewash, quick drench.

Safety signs

Respiratory protection

Respiratory protection: Respiratory protection must be used if air contamination exceeds acceptable level. Use respiratory equipment with gas filter, type A2.

Hand protection

Hand protection: Use protective gloves. Chemical resistant gloves required for prolonged or repeated contact. Gloves of nitrile rubber, PVA or Viton are recommended.

Eye / face protection

Eye protection: Use safety goggles or face shield in case of splash risk.

Skin protection

Skin protection (except hands): Wear appropriate clothing to prevent any possibility of skin contact.

Hygiene / Environmental

Specific hygiene measures: Wash hands after contact.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	Fluid.
Colour	Colourless.
Odour	Aromatic.
Comments, pH (as supplied)	Not relevant.
Melting point/melting range	Value: < -48 °C
Boiling point / boiling range	Value: 136-145 °C
Flash point	Value: 27 °C
Evaporation rate	Value: 13,5
Explosion limit	Value: 1-7,1 %
Vapour pressure	Value: 1 kPa Test temperature: 20 °C

Vapour density	Value: 3,7
Specific gravity	Value: 0,870 kg/m3 Test temperature: 20 °C
Solubility description	Soluble in: Organic solvents. Not soluble in water.
Partition coefficient: n-octanol/water	Value: 3,15
Spontaneous combustability	Value: > 432-530 °C
Viscosity	Value: < 0,90 mPas Method of testing: Kinematisk Test temperature: 25 °C

9.2. Other information

SECTION 10: Stability and reactivity

10.1. Reactivity

Reactivity: Heating may cause a fire.

10.2. Chemical stability

Stability: Stable under the prescribed storage conditions.

10.3. Possibility of hazardous reactions

Possibility of hazardous reactions: Not known.

10.4. Conditions to avoid

Conditions to avoid: Avoid heat, flames and other sources of ignition.

10.5. Incompatible materials

Materials to avoid: Avoid contact with oxidising agents (e.g. nitric acid, peroxides and chromates). Strong acids.

10.6. Hazardous decomposition products

Hazardous decomposition products: Fire creates: Carbon monoxide (CO). Carbon dioxide (CO_2).

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Toxicological Information:

Other toxicological data: Acute Toxicity (Oral LD50): mg/kg (oral rat) > 2000
Acute Toxicity (Inhalation LC50): mg/l (vapours) (4h) > 20
Acute Toxicity (Dermal LD50): mg/kg Rabbit > 2000

Toxicological data for substances

Potential acute effects

Inhalation	In high concentrations, vapours are narcotic and may cause headache, fatigue, dizziness and nausea. Icke klassificerad som aspirationstoxisk (Not classified as asp. tox.)
Skin contact	Prolonged or frequent contact may cause redness, itching, eczema and skin cracking. Defats the skin.
Eye contact	May irritate and cause redness and pain.
Ingestion	Ingestion of large amounts may cause unconsciousness. However, ingestion may cause nausea, headache, dizziness and intoxication. Ingestion may cause irritation of the gastrointestinal tract, vomiting and diarrhoea. May cause irritation to the mouth and throat.

Delayed effects / repeated exposure

Sensitisation	Not known.
Chronic effects	None known.

Carcinogenic, Mutagenic or Reprotoxic

Carcinogenicity	None.
Mutagenicity	Not known.
Teratogenic properties	Suspected of damaging the unborn child

Reproductive toxicity	Not known.

SECTION 12: Ecological information

12.1. Toxicity

Acute aquatic, fish	Value: 2 mg/l Method of testing: LC50 Fish, species: Roccus saxatilis Duration: 96h
Acute aquatic, algae	Value: > 3,2 mg/l Method of testing: IC50 Algae, species: Selenastrum Capricornum Duration: 72h
Acute aquatic, Daphnia	Value: 8,5 mg/l Method of testing: EC50 Daphnia, species: Daphnia magna Duration: 48h

12.2. Persistence and degradability

Persistence and degradability description	Lättnedbrytbar av biologiska organismer.
Chemical oxygen demand (COD)	Value: 5 Method of testing: COD
Biological oxygen demand (BOD)	Value: 0,55 Method of testing: BOD

12.3. Bioaccumulative potential

Bioaccumulative potential	Will not bio-accumulate.
Bioconcentration factor (BCF)	Value: 22 Method of testing: BCF

12.4. Mobility in soil

Mobility	The product is insoluble in water and will spread on the water surface.

12.5. Results of PBT and vPvB assessment

PBT assessment results	This substance is not classified as PBT or vPvB.

12.6. Other adverse effects

Other adverse effects / Remarks	None known.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Specify the appropriate methods of disposal	Confirm disposal procedures with environmental engineer and local regulations. Absorb in vermiculite or dry sand and dispose of at a licenced hazardous waste collection point. Liquid components can be disposed of by incineration.
Product classified as hazardous waste	Yes
Packaging classified as hazardous waste	Yes

SECTION 14: Transport information

14.1. UN number

ADR	1307
RID	1307
IMDG	1307
ICAO/IATA	1307

14.2. UN proper shipping name

ADR	XYLENES

RID	XYLENES
IMDG	XYLENES
ICAO/IATA	XYLENES

14.3. Transport hazard class(es)

ADR	3
Hazard no.	30
RID	3
ADN	33
IMDG	3
ICAO/IATA	3

14.4. Packing group

ADR	III
RID	III
IMDG	III
ICAO/IATA	III

14.5. Environmental hazards

Comment	Not relevant.

14.6. Special precautions for user

EmS	F-E, S-D

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

SECTION 15: Regulatory information

EC no.	215-535-7

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Other Label Information	Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 with amendments.
Legislation and regulations	Dangerous Substance Directive 67/548/EEC. The Chemicals (Hazard Information and Packaging for Supply) Regulations 2009 (S.I 2009 No. 716). The List of Wastes (England) (Amendment) Regulations 2005. (SI 2005 No. 895). Avfallsförordningen (2011:927).

15.2. Chemical safety assessment

SECTION 16: Other information

Hazard symbol

R-phrases	R10 Flammable. R38 Irritating to skin. R20/22 Harmful by inhalation and if swallowed. R38 Irritating to skin.
S-phrases	S7 Keep container tightly closed. S16 Keep away from sources of ignition - No smoking.
Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]	Flam. Liq. 3; H226; Acute tox. 4; H312; Skin Irrit. 2; H315;

	Acute tox. 4; H332;
List of relevant R-phrases (under headings 2 and 3).	R38 Irritating to skin. R11 Highly flammable. R10 Flammable. R20/21 Harmful by inhalation and in contact with skin. R20 Harmful by inhalation.
List of relevant H-phrases (Section 2 and 3).	H332 Harmful if inhaled. H312 Harmful in contact with skin. H225 Highly flammable liquid and vapour. H226 Flammable liquid and vapour. H315 Causes skin irritation.
Responsible for safety data sheet	Fred Holmberg & Co AB

SAFETY DATA SHEET

Version 4.17
Revision Date 03/03/2015
Print Date 02/19/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Trichlorofluoromethane

Product Number : 254991
Brand : Aldrich

CAS-No. : 75-69-4

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Dermal (Category 4), H312

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Warning

Hazard statement(s)
H312 Harmful in contact with skin.

Precautionary statement(s)
P280 Wear protective gloves/ protective clothing.
P302 + P352 + P312 IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell.
P363 Wash contaminated clothing before reuse.
P501 Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms : Fluorotrichloromethane
CFC-11

Formula	:	CCl_3F CCl_3F
Molecular weight	:	137.37 g/mol
CAS-No.	:	75-69-4
EC-No.	:	200-892-3

Hazardous components

Component	Classification	Concentration
Trichlorofluoromethane		
	Acute Tox. 4; H312	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

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

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, Hydrogen chloride gas, Hydrogen fluoride

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation.
For personal protection see section 8.

6.2 Environmental precautions
Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Keep container tightly closed in a dry and well-ventilated place.

Recommended storage temperature 2 - 8 °C

Contents under pressure.
Storage class (TRGS 510): Non Combustible Liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Trichlorofluoromethane	75-69-4	C	1,000.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Cardiac sensitization Not classifiable as a human carcinogen		
		C	1,000.000000 ppm 5,600.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	1,000.000000 ppm 5,600.000000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate.		

8.2 Exposure controls

Appropriate engineering controls

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

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.4 mm
Break through time: 480 min
Material tested:Camatril® (KCL 730 / Aldrich Z677442, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.2 mm
Break through time: 30 min

Material tested:Dermatril® P (KCL 743 / Aldrich Z677388, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

Control of environmental exposure
Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid, clear Colour: colourless
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	-110.99 - -109.99 °C (-167.78 - -165.98 °F)
f)	Initial boiling point and boiling range	23.7 °C (74.7 °F) - lit.
g)	Flash point	No data available
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	885.7 hPa (664.3 mmHg) at 20.0 °C (68.0 °F) 2,701.2 hPa (2,026.1 mmHg) at 55.0 °C (131.0 °F)
l)	Vapour density	No data available
m)	Relative density	1.494 g/cm3 at 25 °C (77 °F)
n)	Water solubility	1 g/l
o)	Partition coefficient: n-octanol/water	log Pow: 2.53
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available

t) Oxidizing properties No data available

9.2 Other safety information

Surface tension 18.0 mN/m at 25.0 °C (77.0 °F)

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong oxidizing agents, Sodium/sodium oxides, Potassium, Magnesium, Aluminum, Zinc

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - Rat - > 15,000 mg/kg

LC50 Inhalation - Rat - 0.3 h - 130000 ppm
Remarks: Behavioral:Tremor. Behavioral:Convulsions or effect on seizure threshold. Respiratory disorder

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

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

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
No data available

No data available

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: PB6125000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated., Nausea, Dizziness, Headache, Vomiting, Diarrhoea, Abdominal pain, Weakness, Unconsciousness

Liver -

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 3082 Class: 9 Packing group: III
Proper shipping name: Environmentally hazardous substance, liquid, n.o.s. (Trichlorofluoromethane)
Reportable Quantity (RQ): 5000 lbs

Poison Inhalation Hazard: No

IMDG
Not dangerous goods

IATA
Not dangerous goods

15. REGULATORY INFORMATION

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

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Trichlorofluoromethane	75-69-4	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Trichlorofluoromethane	75-69-4	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Trichlorofluoromethane	75-69-4	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Trichlorofluoromethane	75-69-4	2007-07-01

California Prop. 65 Components

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

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
H312	Harmful in contact with skin.

HMIS Rating

Health hazard:	1
Chronic Health Hazard:	
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	1
Fire Hazard:	0
Reactivity Hazard:	0

Further information

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

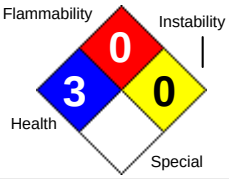
Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 4.17 Revision Date: 03/03/2015 Print Date: 02/19/2016

MATERIAL SAFETY DATA SHEET
SIFCO Process Trivalent Chromium Conversion

HEALTH	*	3
FLAMMABILITY		0
PHYSICAL HAZ.		0
PPE		X



Printed: 12/03/2010
Revision: 12/03/2010
Supercedes Revision: 11/02/2010
Date Created: 07/13/2009

1. Product and Company Identification

Product Code: 3007
Product Name: SIFCO Process Trivalent Chromium Conversion
Manufacturer Information
Company Name: SIFCO Applied Surface Concepts
Division of SIFCO Industries, Inc.
5708 E. Schaaf Road
Independence, OH 44131
Phone Number: (216)524-0099
Fax Number: (216)524-6331
Emergency Contact: CHEMTREC (United States) (800)424-9300
Information: CHEMTREC (International-Collect) +1 (703)527-3887
Web site address: http://www.SIFCOASC.com
Email address: info@sifcoasc.com

2. Hazards Identification

Emergency Overview

Blue liquid with no characteristic odor.
Caution! May cause eye and skin burns. May be harmful if swallowed.
Contains materials that can cause target organ damage. Contains materials which can cause cancer. Emergency Response Guide #171

Route(s) of Entry: Inhalation? Yes Skin? Yes Eyes? Yes Ingestion? Yes

Health Hazards (Acute and Chronic)

INHALATION: May give off gas, vapor or dust that is irritating to the respiratory system. Exposure to decomposition products may cause a health hazard.
INGESTION: Harmful if swallowed. May cause burns to mouth, throat and stomach.
EYE: May be corrosive to eyes. May cause burns.
SKIN CONTACT: May be corrosive to the skin. May cause burns.
CHRONIC EFFECTS: Contains material that may cause target organ damage.

Signs and Symptoms Of Exposure

Dependant on route(s) of entry. See section above for details.

3. Composition/Information on Ingredients

Hazardous Components (Chemical Name)	CAS #	Concentration	Formula	RTECS #
1. Sodium nitrate	7631-99-4	1.0 -3.0 %	NaNO3	WC5600000
2. Chromium hydroxide sulphate (Cr(OH)(SO4))	12336-95-7	1.0 -3.0 %	CrHO5S	GB6240000
3. Cobalt sulfate heptahydrate	10026-24-1	0.3 -1.0 %	CoSO4.7H2O	GG3200000
4. Ammonium bifluoride	1341-49-7	0.3 -1.0 %	F2H5N	BQ9200000
5. Water	7732-18-5	92.0 -97.4 %	H2O	ZC0110000

4. First Aid Measures

Emergency and First Aid Procedures

First aid providers must take proper precautions for their own safety before entering contaminated areas to assist chemical accident victims and handling their contaminated clothing and equipment. Another person should immediately call the Emergency Medical Service, 911-Operator, Hospital, Physician, Ophthalmologist or Poison Control Center, as applicable. Give the following information: Location of the accident, your phone number, description of the accident, name of chemical agent and product, number and condition of casualties, what is

being done for the victims.

Stay on the phone until the other party hangs up! Remove victim from contaminated area to a clean, quiet, ventilated area. Keep them calm and warm.
EYES: Hold eyelids apart and flush eyes with plenty of water for at least 15 minutes.
SKIN: Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Thoroughly decontaminate (or discard) clothing and shoes.
INHALATION: Remove to fresh air. Lay victim down, legs raised. Loosen tight clothing, cover with a blanket. If not breathing, give artificial respiration.
INGESTION: DO NOT induce vomiting, unless advised by EMS. Give large quantities of water. Never give anything by mouth to an unconscious person.

5. Fire Fighting Measures

Flammability Classification: Material will not burn

Flash Pt:

Explosive Limits: LEL: UEL:

Special Fire Fighting Procedures

Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Unusual Fire and Explosion Hazards

Suitable Extinguishing Media

Use an extinguishing agent suitable for the surrounding fire.

Unsuitable Extinguishing Media

None known.

6. Accidental Release Measures

Steps To Be Taken In Case Material Is Released Or Spilled

Do not touch or walk through spilled material. Isolate hazard area and keep people away. Notify your facility emergency coordinator. Eliminate all sources of ignition. Provide maximum ventilation. Do not release into soil, sewers, or natural bodies of water. Wear proper personal protective equipment (PPE). Carefully mop up or vacuum spill and triple rinse with water into suitable plastic container. Release of a reportable quantity (RQ) requires notification of proper authorities. Dispose of according to local, state, and federal regulations.

7. Handling and Storage

Precautions To Be Taken in Handling

Put on appropriate personal protective equipment. Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking.

Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Precautions To Be Taken in Storing

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8. Exposure Controls/Personal Protection

Hazardous Components (Chemical Name)	CAS #	OSHA PEL	ACGIH TLV	Other Limits
1. Sodium nitrate	7631-99-4		10 mg/m3	
2. Chromium hydroxide sulphate (Cr(OH)(SO4))	12336-95-7			
3. Cobalt sulfate heptahydrate	10026-24-1			
4. Ammonium bifluoride	1341-49-7			
5. Water	7732-18-5			

Respiratory Equipment (Specify Type)

If engineering controls are not feasible, the respiratory protection program must comply with OSHA 29 CFR 1910.134

Eye Protection

Face shield and safety glasses w/side shields or splash-proof chemical goggles. Do not wear contact lenses. Eye wash station, safety shower, washing facilities near work area.

Protective Gloves

Nitrile gloves.

Ventilation

If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Work/Hygienic/Maintenance Practices

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

9. Physical and Chemical Properties

Physical States: [ ] Gas [X] Liquid [ ] Solid

Explosive Limits: LEL: UEL:

Specific Gravity (Water = 1): 1.045 - 1.050

Density: 1.03 - 1.07

pH: 2.0 - 2.5

Appearance and Odor

Blue liquid with no characteristic odor.

10. Stability and Reactivity

Stability: Unstable [ ] Stable [X]

Conditions To Avoid - Instability

Incompatibility - Materials To Avoid

Hazardous Decomposition Or Byproducts

Possibility of Hazardous Reactions: Will occur [ ] Will not occur [X]

Conditions To Avoid - Hazardous Reactions

Avoid exposure - obtain special instructions before use.

11. Toxicological Information

Inhalation : May give off gas, vapor or dust that is irritating or corrosive to the respiratory system. Exposure to decomposition products may cause a health hazard.

Ingestion : Harmful if swallowed. May cause burns to mouth, throat and stomach.

Skin : May be corrosive to the skin. May cause burns.

Eyes : May be corrosive to eyes. May cause burns.

Carcinogenicity/Other Information

Hazardous Components (Chemical Name)	CAS #	NTP	IARC	ACGIH	OSHA
1. Sodium nitrate	7631-99-4				
2. Chromium hydroxide sulphate (Cr(OH)(SO4))	12336-95-7				
3. Cobalt sulfate heptahydrate	10026-24-1		2B	A3	
4. Ammonium bifluoride	1341-49-7				
5. Water	7732-18-5				

Carcinogenicity: NTP? Unknown IARC Monographs? Unknown OSHA Regulated? Unknown

12. Ecological Information

No known significant effects or critical hazards.

13. Disposal Considerations

Waste Disposal Method

Ship to approved treatment/disposal facility. Dispose of according to local, state, and federal regulations. Follow the applicable regulations for disposal of empty containers and rinsate. The disposal information applies to the material as manufactured. Contamination may affect the disposal requirements. The responsibility for proper waste disposal is with the generator of the waste.

14. Transport Information

LAND TRANSPORT (US DOT)

DOT Proper Shipping Name UN3082, Environmentally hazardous substances, liquid, n.o.s. (Chromium Sulphate) PG III - ERG 171
DOT Hazard Class: 9
DOT Hazard Label: CLASS 9
UN/NA Number: UN3082
Packing Group: III

LAND TRANSPORT (Canadian TDG)

UN Number: 3082
Packing Group: III

LAND TRANSPORT (European ADR/RID)

UN Number: 3082
Packing Group: III

AIR TRANSPORT (ICAO/IATA)

UN Number: 3082
Packing Group: III
IATA Classification: 9

MARINE TRANSPORT (IMDG/IMO)

UN Number: 3082
Packing Group: III
Marine Pollutant: No

15. Regulatory Information

US EPA SARA Title III

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
1. Sodium nitrate	7631-99-4	No	No	Yes-Cat. N511	No
2. Chromium hydroxide sulphate (Cr(OH)(SO4))	12336-95-7	No	No	Yes-Cat. N090	No
3. Cobalt sulfate heptahydrate	10026-24-1	No	No	No	No
4. Ammonium bifluoride	1341-49-7	No	Yes 100 LB	No	No

Hazardous Components (Chemical Name)	CAS #	Sec.302 (EHS)	Sec.304 RQ	Sec.313 (TRI)	Sec.110
5. Water	7732-18-5	No	No	No	No

US EPA CAA, CWA, TSCA

Hazardous Components (Chemical Name)	CAS #	EPA CAA	EPA CWA NPDES	EPA TSCA	CA PROP 65
1. Sodium nitrate	7631-99-4	HAP, ODC ()	No	Inventory, 8A CAIR	No
2. Chromium hydroxide sulphate (Cr(OH)(SO4))	12336-95-7	HAP, ODC ()	No	Inventory	No
3. Cobalt sulfate heptahydrate	10026-24-1	HAP, ODC ()	No	No	Yes
4. Ammonium bifluoride	1341-49-7	HAP, ODC ()	No	Inventory	No
5. Water	7732-18-5	HAP, ODC ()	No	Inventory	No

SARA (Superfund Amendments and Reauthorization Act of 1986) Lists:

Sec.302: EPA SARA Title III Section 302 Extremely Hazardous Chemical with TPQ. * indicates 10000 LB TPQ if not volatile.

Sec.304: EPA SARA Title III Section 304: CERCLA Reportable + Sec.302 with Reportable Quantity. ** indicates statutory RQ.

Sec.313: EPA SARA Title III Section 313 Toxic Release Inventory. Note: -Cat indicates a member of a chemical category.

Sec.110: EPA SARA 110 Superfund Site Priority Contaminant List

TSCA (Toxic Substances Control Act) Lists:

Inventory: Chemical Listed in the TSCA Inventory.

5A(2): Chemical Subject to Significant New Rules (SNURS)

6A: Commercial Chemical Control Rules

8A: Toxic Substances Subject To Information Rules on Production

8A CAIR: Comprehensive Assessment Information Rules - (CAIR)

8A PAIR: Preliminary Assessment Information Rules - (PAIR)

8C: Records of Allegations of Significant Adverse Reactions

8D: Health and Safety Data Reporting Rules

8D TERM: Health and Safety Data Reporting Rule Terminations

12(b): Notice of Export

Other Important Lists:

CWA NPDES: EPA Clean Water Act NPDES Permit Chemical

CAA HAP: EPA Clean Air Act Hazardous Air Pollutant

CAA ODC: EPA Clean Air Act Ozone Depleting Chemical (1=CFC, 2=HCFC)

CA PROP 65: California Proposition 65

International Regulatory Lists:

EPA Hazard Categories:

This material meets the EPA 'Hazard Categories' defined for SARA Title III Sections 311/312 as indicated:

[X] Yes [ ] No Acute (immediate) Health Hazard
[X] Yes [ ] No Chronic (delayed) Health Hazard
[ ] Yes [X] No Fire Hazard
[ ] Yes [X] No Sudden Release of Pressure Hazard
[ ] Yes [X] No Reactive Hazard

Regulatory Information

U.S. FEDERAL REGULATIONS:

1. Supplier Notification about toxic Chemicals.

SIFCO Applied Surface Concepts is required to inform you, that this product contains a toxic chemical or chemicals subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372, if specified annual thresholds are met or exceeded.

Toxic Chemical	CAS #	Wt.% (Maximum)
Chromium Sulphate	12336-95-7	3%

Your other suppliers of trade name products or mixtures containing section 313 chemicals must also notify you. If you repackage or otherwise redistribute this product to industrial customers you are required to furnish similar notification to them.

2. CERCLA and EPCRA:
Threshold Planning Quantity: N/A
(Release) Reportable Quantity: N/A
Extremely Hazardous Substance: None

3. EPCRA Hazard Categories:
Immediate (Acute) Health: Yes
Delayed (Chronic) Health: Yes
Fire: No
Sudden release of Pressure: No
Reactivity: No

4. TSCA Statement.
All ingredients of this product are listed under the Toxic Substances Control Act (TSCA).

5. ODS Certification.
This product does not contain and is not manufactured with Ozone Depleting Substances (ODS).

6. VOC Certification.
This product does not contain any Volatile Organic Compounds (VOC).

7. PCB Certification.
This product does not contain any polychlorinated biphenyls (PCB).

STATE REGULATIONS:
California Prop. 65:
WARNING! This product contains chemicals known to the state of California to cause cancer, birth defects, or other reproductive harm.

INTERNATIONAL REGULATIONS:
WHMIS Classification.
Class D-2B

16. Other Information

Company Policy or Disclaimer

DISCLAIMER:
This information is believed to be accurate and represents the best information currently available to us. However, we make no warrenty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.

SAFETY DATA SHEET

Version 5.8
Revision Date 03/13/2015
Print Date 01/29/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Vanadium(V) oxide

Product Number : 204854
Brand : Aldrich
Index-No. : 023-001-00-8

CAS-No. : 1314-62-1

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Acute toxicity, Oral (Category 4), H302
Acute toxicity, Inhalation (Category 4), H332
Serious eye damage (Category 1), H318
Germ cell mutagenicity (Category 2), H341
Reproductive toxicity (Category 2), H361
Specific target organ toxicity - single exposure (Category 3), Respiratory system, H335
Specific target organ toxicity - repeated exposure (Category 1), H372
Acute aquatic toxicity (Category 2), H401
Chronic aquatic toxicity (Category 2), H411

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H302 + H332 Harmful if swallowed or if inhaled
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H341 Suspected of causing genetic defects.
H361 Suspected of damaging fertility or the unborn child.
H372 Causes damage to organs through prolonged or repeated exposure.

H411	Toxic to aquatic life with long lasting effects.

Precautionary statement(s)

P201	Obtain special instructions before use.
P202	Do not handle until all safety precautions have been read and understood.
P260	Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
P264	Wash skin thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P301 + P312 + P330	IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell. Rinse mouth.
P304 + P340 + P312	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/ physician if you feel unwell.
P305 + P351 + P338 + P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/ physician.
P308 + P313	IF exposed or concerned: Get medical advice/ attention.
P391	Collect spillage.
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Formula	:	O_5V_2
Molecular weight	:	181.88 g/mol
CAS-No.	:	1314-62-1
EC-No.	:	215-239-8
Index-No.	:	023-001-00-8

Hazardous components

Component	Classification	Concentration
Vanadium pentoxide		
	Acute Tox. 4; Eye Dam. 1; Muta. 2; Repr. 2; STOT SE 3; STOT RE 1; Aquatic Acute 2; Aquatic Chronic 2; H302 + H332, H318, H335, H341, H361, H372, H411	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

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

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

In case of skin contact
Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

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

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed
The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed
No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Vanadium/vanadium oxides

5.3 Advice for firefighters
Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
No data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.
For personal protection see section 8.

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

6.3 Methods and materials for containment and cleaning up
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols.Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs.
Provide appropriate exhaust ventilation at places where dust is formed.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.
Storage class (TRGS 510): Non-combustible, acute toxic Cat.3 / toxic hazardous materials or hazardous materials causing chronic effects

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Vanadium pentoxide	1314-62-1	C	0.100000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		C	0.500000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	Remarks	Ceiling limit is to be determined from breathing-zone air samples.		
		TWA	0.050000 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Lower Respiratory Tract irritation Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans		
		TWA	0.05 mg/m3	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Lower Respiratory Tract irritation Substances for which there is a Biological Exposure Index or Indices (see BEI® section) Confirmed animal carcinogen with unknown relevance to humans		
		C	0.050000 mg/m3	USA. NIOSH Recommended Exposure Limits
		15 minute ceiling value		
		C	0.050000 mg/m3	USA. NIOSH Recommended Exposure Limits
		15 minute ceiling value		
		C	0.100000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Ceiling limit is to be determined from breathing-zone air samples.		
		C	0.500000 mg/m3	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		Ceiling limit is to be determined from breathing-zone air samples.		
		C	0.050000 mg/m3	USA. NIOSH Recommended Exposure Limits
		15 minute ceiling value		
		C	0.050000 mg/m3	USA. NIOSH Recommended Exposure Limits
		15 minute ceiling value		
		C	0.050000 mg/m3	USA. NIOSH Recommended Exposure Limits
		15 minute ceiling value		
		C	0.050000 mg/m3	USA. NIOSH Recommended Exposure Limits
		15 minute ceiling value		

Biological occupational exposure limits

Component	CAS-No.	Parameters	Value	Biological specimen	Basis
Vanadium pentoxide	1314-62-1	Vanadium	0.0500 mg/g	In urine	
	Remarks	End of shift at end of workweek			

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min
Material tested:Dermatril® (KCL 740 / Aldrich Z677272, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

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

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: solid
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: 690 °C (1,274 °F) - lit.
f)	Initial boiling point and boiling range	No data available
g)	Flash point	Not applicable

h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	3.35 g/mL at 25 °C (77 °F)
n)	Water solubility	904 g/l at 20 °C (68 °F) - OECD Test Guideline 105
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	The substance or mixture is not classified as oxidizing.

9.2 Other safety information

Solubility in other solvents	Ethanol - insoluble

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
No data available

10.5 Incompatible materials
Strong acids

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
Harmful if swallowed. Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

LC50 Inhalation - Rat - female - 4 h - 2.21 mg/l
(OECD Test Guideline 403)

LC50 Dermal - Rat - > 2,500 mg/kg
(OECD Test Guideline 402)

No data available

Skin corrosion/irritation
Skin - in vitro assay
Result: No skin irritation

Serious eye damage/eye irritation
Eyes - Rabbit
Result: Risk of serious damage to eyes.
(OECD Test Guideline 405)

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
Laboratory experiments have shown mutagenic effects.
In vitro tests showed mutagenic effects

Carcinogenicity

No data available

IARC:	2B - Group 2B: Possibly carcinogenic to humans (Vanadium pentoxide)
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity
Possible risk of congenital malformation in the fetus.
Suspected human reproductive toxicant

No data available

Specific target organ toxicity - single exposure
May cause respiratory irritation.
Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Specific target organ toxicity - repeated exposure
Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard
No data available

Additional Information
RTECS: Not available

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

Stomach - Irregularities - Based on Human Evidence
Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 5.2 mg/l - 96.0 h
Toxicity to daphnia and other aquatic invertebrates	LC50 - Daphnia magna (Water flea) - 1.52 mg/l - 48 h

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects
Toxic to aquatic life with long lasting effects.
An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 2862 Class: 6.1 Packing group: III
Proper shipping name: Vanadium pentoxide
Reportable Quantity (RQ): 1000 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 2862 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: VANADIUM PENTOXIDE
Marine pollutant:yes

IATA
UN number: 2862 Class: 6.1 Packing group: III
Proper shipping name: Vanadium pentoxide

15. REGULATORY INFORMATION

SARA 302 Components
The following components are subject to reporting levels established by SARA Title III, Section 302:

	CAS-No.	Revision Date
Vanadium pentoxide	1314-62-1	2007-07-01

SARA 313 Components

	CAS-No.	Revision Date
Vanadium pentoxide	1314-62-1	2007-07-01

The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Vanadium pentoxide	1314-62-1	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Vanadium pentoxide	1314-62-1	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Vanadium pentoxide	1314-62-1	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Vanadium pentoxide	1314-62-1	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Vanadium pentoxide	1314-62-1	2007-09-28

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Acute Tox.	Acute toxicity
Aquatic Acute	Acute aquatic toxicity
Aquatic Chronic	Chronic aquatic toxicity
Eye Dam.	Serious eye damage
H302	Harmful if swallowed.
H302 + H332	Harmful if swallowed or if inhaled
H318	Causes serious eye damage.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H341	Suspected of causing genetic defects.
H361	Suspected of damaging fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H401	Toxic to aquatic life.

HMIS Rating

Health hazard:	4
Chronic Health Hazard:	*
Flammability:	0
Physical Hazard	0

NFPA Rating

Health hazard:	3
Fire Hazard:	0
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 5.8 Revision Date: 03/13/2015 Print Date: 01/29/2016

SAFETY DATA SHEET

Version 3.11
Revision Date 12/01/2015
Print Date 02/18/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Vinyl chloride

Product Number : 387622
Brand : Aldrich
Index-No. : 602-023-00-7

CAS-No. : 75-01-4

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Synthesis of substances

1.3 Details of the supplier of the safety data sheet

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

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : (314) 776-6555

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)
Flammable gases (Category 1), H220
Gases under pressure (Liquefied gas), H280
Carcinogenicity (Category 1A), H350

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram

Signal word Danger

Hazard statement(s)
H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.
H350 May cause cancer.

Precautionary statement(s)
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P281 Use personal protective equipment as required.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P377	Leaking gas fire: Do not extinguish, unless leak can be stopped safely.
P381	Eliminate all ignition sources if safe to do so.
P405	Store locked up.
P410 + P403	Protect from sunlight. Store in a well-ventilated place.
P501	Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS

May form explosive peroxides.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	:	Chloroethylene
Formula	:	C_2H_3Cl
Molecular weight	:	62.50 g/mol
CAS-No.	:	75-01-4
EC-No.	:	200-831-0
Index-No.	:	602-023-00-7

Hazardous components

Component	Classification	Concentration
Vinyl chloride		
	Flam. Gas 1; Press. Gas Liquefied gas; Carc. 1A; SA ; H220, H280, H350,	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

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

If inhaled

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

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Flush eyes with water as a precaution.

If swallowed

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

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides, Hydrogen chloride gas

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up
Clean up promptly by sweeping or vacuum.

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid inhalation of vapour or mist.
Use explosion-proof equipment.Keep away from sources of ignition - No smoking.Take measures to prevent the build up of electrostatic charge.
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Keep container tightly closed in a dry and well-ventilated place.

Contents under pressure. Light sensitive.

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Vinyl chloride	75-01-4	TWA	1 ppm	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	1 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Liver damage Lung cancer Confirmed human carcinogen		
		STEL	5 ppm	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	1 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		STEL	5 ppm	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		See 1910.1017		
		Potential Occupational Carcinogen See Appendix A		

8.2 Exposure controls

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

Personal protective equipment

Eye/face protection
Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Splash contact
Material: Fluorinated rubber
Minimum layer thickness: 0.7 mm
Break through time: 120 min
Material tested:Vitoject® (KCL 890 / Aldrich Z677698, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374
If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection
Complete suit protecting against chemicals, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: Liquefied gas
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	Melting point/range: -153.8 °C (-244.8 °F) - lit.
f)	Initial boiling point and boiling range	-13.4 °C (7.9 °F) - lit.
g)	Flash point	-61.0 °C (-77.8 °F) - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or	Upper explosion limit: 33 %(V) Lower explosion limit: 3.6 %(V)

	explosive limits	
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	0.911 g/cm3 at 25 °C (77 °F)
n)	Water solubility	No data available
o)	Partition coefficient: n-octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

9.2 Other safety information
No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
No data available

10.2 Chemical stability
Stable under recommended storage conditions.
Contains the following stabiliser(s):
Hydroquinone (>=0 - <=0.0001 %)
Phenol (>=0 - <=0.01 %)

10.3 Possibility of hazardous reactions
No data available

10.4 Conditions to avoid
Heat, flames and sparks. Extremes of temperature and direct sunlight.

10.5 Incompatible materials
Chemically active metals, Copper

10.6 Hazardous decomposition products
Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
No data available

LC50 Inhalation - Rat - 0.3 h - 180000 ppm
Remarks: Behavioral:Tremor. Behavioral:Convulsions or effect on seizure threshold. Respiratory disorder

Dermal: No data available

No data available

Skin corrosion/irritation
No data available

Serious eye damage/eye irritation
No data available

Respiratory or skin sensitisation
No data available

Germ cell mutagenicity
No data available

Carcinogenicity

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

Human carcinogen.

IARC: 1 - Group 1: Carcinogenic to humans (Vinyl chloride)

NTP: Known to be human carcinogen (Vinyl chloride)

OSHA: OSHA specifically regulated carcinogen (Vinyl chloride)

Reproductive toxicity
No data available

Overexposure may cause reproductive disorder(s) based on tests with laboratory animals.

Specific target organ toxicity - single exposure
No data available

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available

Additional Information
RTECS: KU9625000

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, Headache, Nausea, Vomiting, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Central nervous system -
Stomach - Irregularities - Based on Human Evidence (Phenol)
Liver - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity
No data available

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment
PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product
Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN number: 1086 Class: 2.1
Proper shipping name: Vinyl chloride, stabilized
Reportable Quantity (RQ): 1 lbs

Poison Inhalation Hazard: No

IMDG
UN number: 1086 Class: 2.1 EMS-No: F-D, S-U
Proper shipping name: VINYL CHLORIDE, STABILIZED

IATA
UN number: 1086 Class: 2.1
Proper shipping name: Vinyl chloride, stabilized
IATA Passenger: Not permitted for transport

15. REGULATORY INFORMATION

SARA 302 Components
The following components are subject to reporting levels established by SARA Title III, Section 302:

	CAS-No.	Revision Date
Phenol	108-95-2	2007-07-01
Hydroquinone	123-31-9	2007-07-01

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313:

	CAS-No.	Revision Date
Vinyl chloride	75-01-4	2007-07-01

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Vinyl chloride	75-01-4	2007-07-01
Phenol	108-95-2	2007-07-01
Hydroquinone	123-31-9	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Vinyl chloride	75-01-4	2007-07-01
Phenol	108-95-2	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Vinyl chloride	75-01-4	2007-07-01

California Prop. 65 Components

WARNING! This product contains a chemical known to the State of California to cause cancer.	CAS-No.	Revision Date
Vinyl chloride	75-01-4	2007-09-28

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

	May displace oxygen and cause rapid suffocation.
Carc.	Carcinogenicity
Flam. Gas	Flammable gases
H220	Extremely flammable gas.
H280	Contains gas under pressure; may explode if heated.
H350	May cause cancer.
Press. Gas	Gases under pressure
SA	Simple Asphyxiant

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	4
Physical Hazard	3

NFPA Rating

Health hazard:	2
Fire Hazard:	4
Reactivity Hazard:	0

Further information

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

Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

Version: 3.11 Revision Date: 12/01/2015 Print Date: 02/18/2016

SAFETY DATA SHEET

Creation Date 22-Sep-2009 **Revision Date** 25-Apr-2019 **Revision Number** 6

1. Identification

Product Name **Vinylidene chloride, stabilized**

Cat No. : **AC172290000; AC172290010; AC172290025; AC172290250**

CAS-No 75-35-4
Synonyms 1,1-Dichloroethylene

Recommended Use Laboratory chemicals.
Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company

Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Acros Organics
One Reagent Lane
Fair Lawn, NJ 07410

Emergency Telephone Number
For information **US** call: 001-800-ACROS-01 / **Europe** call: +32 14 57 52 11
Emergency Number **US:**001-201-796-7100 / **Europe:** +32 14 57 52 99
CHEMTREC Tel. No.**US:**001-800-424-9300 / **Europe:**001-703-527-3887

2. Hazard(s) identification

Classification
This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids	Category 1
Acute oral toxicity	Category 4
Acute Inhalation Toxicity - Vapors	Category 4
Serious Eye Damage/Eye Irritation	Category 2
Carcinogenicity	Category 2
Specific target organ toxicity - (repeated exposure)	Category 2
Target Organs - Nasal Cavities, Liver.	

Label Elements

Signal Word
Danger

Hazard Statements
Extremely flammable liquid and vapor
Causes serious eye irritation

Suspected of causing cancer
May cause damage to organs through prolonged or repeated exposure
Harmful if swallowed or if inhaled

Precautionary Statements
Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Wash face, hands and any exposed skin thoroughly after handling
Do not eat, drink or smoke when using this product
Use only outdoors or in a well-ventilated area
Wear eye/face protection
Do not breathe dust/fume/gas/mist/vapors/spray
Keep away from heat/sparks/open flames/hot surfaces. - No smoking
Keep container tightly closed
Ground/bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting/equipment
Use only non-sparking tools
Take precautionary measures against static discharge
Response
IF exposed or concerned: Get medical attention/advice
Inhalation
IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
Skin
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
Eyes
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
Ingestion
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Fire
In case of fire: Use CO2, dry chemical, or foam for extinction
Storage
Store locked up
Store in a well-ventilated place. Keep cool
Disposal
Dispose of contents/container to an approved waste disposal plant
Hazards not otherwise classified (HNOC)
Toxic to aquatic life with long lasting effects
WARNING. Cancer - https://www.p65warnings.ca.gov/.

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Vinylidene chloride	75-35-4	>95
4-Methoxyphenol	150-76-5	0.02

4. First-aid measures

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Get medical attention.

Inhalation Remove to fresh air. If breathing is difficult, give oxygen. Get medical attention.

Ingestion Do NOT induce vomiting. Get medical attention.

Most important symptoms and effects Difficulty in breathing. . Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

Notes to Physician Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media Water spray. Carbon dioxide (CO_2). Dry chemical. Water mist may be used to cool closed containers. Chemical foam. Water mist may be used to cool closed containers.

Unsuitable Extinguishing Media No information available

Flash Point -25 °C / -13 °F

Method - No information available

Autoignition Temperature 520 °C / 968 °F

Explosion Limits

Upper	16.5%
Lower	8.4%
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical
Extremely flammable. Vapors may travel to source of ignition and flash back. Vapors may form explosive mixture with air. Containers may explode when heated. Vapors may form explosive mixtures with air.

Hazardous Combustion Products
Carbon monoxide (CO). Carbon dioxide (CO_2). Formaldehyde. peroxides. Hydrogen chloride gas.

Protective Equipment and Precautions for Firefighters
Vapors are heavier than air and may spread along floors. As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

NFPA

Health	Flammability	Instability	Physical hazards
2	4	1	N/A

6. Accidental release measures

Personal Precautions Remove all sources of ignition. Take precautionary measures against static discharges.

Environmental Precautions Do not flush into surface water or sanitary sewer system. See Section 12 for additional Ecological Information. Avoid release to the environment. Collect spillage.

Methods for Containment and Clean Up Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal. Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment. Do not let this chemical enter the environment.

7. Handling and storage

Handling

Ensure adequate ventilation. Wear personal protective equipment/face protection. Avoid contact with skin and eyes. Take precautionary measures against static discharges. Do not ingest. If swallowed then seek immediate medical assistance. Handle product only in closed system or provide appropriate exhaust ventilation. Use spark-proof tools and explosion-proof equipment. Use only non-sparking tools. Do not subject to grinding/shock/friction. Avoid breathing dust/fume/gas/mist/vapors/spray. Keep away from open flames, hot surfaces and sources of ignition. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.

Storage

Refrigerator/flammables. Keep away from heat, sparks and flame. Protect from light. May form explosive peroxides on prolonged storage. Keep under nitrogen. Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls / personal protection

Exposure Guidelines

Component	ACGIH TLV	OSHA PEL	NIOSH IDLH	Mexico OEL (TWA)
Vinylidene chloride	TWA: 5 ppm	(Vacated) TWA: 1 ppm (Vacated) TWA: 4 mg/m³		TWA: 5 ppm
4-Methoxyphenol	TWA: 5 mg/m³	(Vacated) TWA: 5 mg/m³	TWA: 5 mg/m³	TWA: 5 mg/m³

Legend

ACGIH - American Conference of Governmental Industrial Hygienists
OSHA - Occupational Safety and Health Administration
NIOSH IDLH: NIOSH - National Institute for Occupational Safety and Health

Engineering Measures

Use explosion-proof electrical/ventilating/lighting/equipment. Ensure adequate ventilation, especially in confined areas. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal Protective Equipment

Eye/face Protection

Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin and body protection

Wear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection

Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State	Liquid
Appearance	Colorless
Odor	aromatic
Odor Threshold	No information available
pH	7 2.5 g/l aq.sol
Melting Point/Range	-122 °C / -187.6 °F
Boiling Point/Range	31.2 - 32 °C / 88.2 - 89.6 °F @ 760 mmHg
Flash Point	-25 °C / -13 °F
Evaporation Rate	No information available
Flammability (solid,gas)	Not applicable
Flammability or explosive limits	

Upper	16.5%
Lower	8.4%
Vapor Pressure	665 mbar @ 20 °C
Vapor Density	3.4 (Air = 1.0)
Specific Gravity	1.218
Solubility	No information available
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	520 °C / 968 °F
Decomposition Temperature	No information available
Viscosity	.377 mPa.s at 15 °C
Molecular Formula	C2 H2 Cl2
Molecular Weight	96.94

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability May form explosive peroxides. Hazardous polymerization may occur upon depletion of inhibitor. Moisture sensitive. Air sensitive. Light sensitive.

Conditions to Avoid Keep away from open flames, hot surfaces and sources of ignition. Excess heat. Exposure to air. Exposure to light. Incompatible products. Exposure to moist air or water.

Incompatible Materials Strong oxidizing agents, Strong bases, Finely powdered metals, oxygen, Peroxides, Metals, copper, Finely powdered metals, Acids

Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO_2), Formaldehyde, peroxides, Hydrogen chloride gas

Hazardous Polymerization Hazardous polymerization may occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Oral LD50 Category 4. ATE = 300 - 2000 mg/kg.

Vapor LC50 Category 4. ATE = 10 - 20 mg/l.

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Vinylidene chloride	LD50 = 1500 mg/kg (Rat) LD50 = 200 mg/kg (Rat)	Not listed	LC50 = 1.66 mg/L (Rat) 4 h LC50 = 6350 ppm (Rat) 4 h
4-Methoxyphenol	1600 mg/kg (Rat)	LD50 > 2000 mg/kg (Rabbit)	Not listed

Toxicologically Synergistic Products No information available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation May cause skin, eye, and respiratory tract irritation

Sensitization No information available

Carcinogenicity Limited evidence of a carcinogenic effect. The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS-No	IARC	NTP	ACGIH	OSHA	Mexico
Vinylidene chloride	75-35-4	Group 2B	Not listed	Not listed	X	Not listed
4-Methoxyphenol	150-76-5	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects Ames test: positive.

Reproductive Effects No information available.

Developmental Effects No information available.

Teratogenicity No information available.

STOT - single exposure None known
STOT - repeated exposure Nasal Cavities Liver

Aspiration hazard No information available

Symptoms / effects,both acute and delayed Inhalation of high vapor concentrations may cause symptoms like headache, dizziness, tiredness, nausea and vomiting

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity

The product contains following substances which are hazardous for the environment. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Vinylidene chloride	Not listed	LC50: 161 - 179 mg/L, 96h static (Pimephales promelas) LC50: 57 - 91 mg/L, 96h static (Lepomis macrochirus) LC50: 85 - 117 mg/L, 96h flow-through (Pimephales promelas)	EC50 > 2000 mg/L 17 h	LC50: 62 - 110 mg/L, 48h Static (Daphnia magna) LC50: 9.0 - 14.0 mg/L, 48h Static (Daphnia magna)
4-Methoxyphenol	Not listed	LC50: = 28.5 mg/L, 96h flow-through (Oncorhynchus mykiss) LC50: = 84.3 mg/L, 96h flow-through (Pimephales promelas)	EC50 = 3.66 mg/L 5 min EC50 = 4.30 mg/L 15 min EC50 = 4.61 mg/L 30 min	Not listed

Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available.

Mobility Will likely be mobile in the environment due to its volatility.

Component	log Pow
Vinylidene chloride	2.02
4-Methoxyphenol	1.3

13. Disposal considerations

Waste Disposal Methods Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

Component	RCRA - U Series Wastes	RCRA - P Series Wastes
Vinylidene chloride - 75-35-4	U078	-

14. Transport information

DOT

UN-No	UN1303
Proper Shipping Name	VINYLIDENE CHLORIDE, STABILIZED
Hazard Class	3
Packing Group	I

TDG

UN-No	UN1303
Proper Shipping Name	VINYLIDENE CHLORIDE, STABILIZED
Hazard Class	3
Packing Group	I

IATA

UN-No	UN1303
Proper Shipping Name	VINYLIDENE CHLORIDE, STABILIZED
Hazard Class	3
Packing Group	I

IMDG/IMO

UN-No	UN1303
Proper Shipping Name	VINYLIDENE CHLORIDE, STABILIZED
Hazard Class	3
Subsidiary Hazard Class	P
Packing Group	I

15. Regulatory information

United States of America Inventory

Component	CAS-No	TSCA	TSCA Inventory notification - Active/Inactive	TSCA - EPA Regulatory Flags
Vinylidene chloride	75-35-4	X	ACTIVE	-
4-Methoxyphenol	150-76-5	X	ACTIVE	-

Legend:
TSCA - Toxic Substances Control Act, (40 CFR Part 710)
X - Listed
'-' - Not Listed

TSCA 12(b) - Notices of Export Not applicable

International Inventories
Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Australia (AICS), China (IECSC), Korea (ECL).

Component	CAS-No	DSL	NDSL	EINECS	PICCS	ENCS	AICS	IECSC	KECL
Vinylidene chloride	75-35-4	X	-	200-864-0	X	X	X	X	KE-10122
4-Methoxyphenol	150-76-5	X	-	205-769-8	X	X	X	X	KE-23353

U.S. Federal Regulations

SARA 313

Component	CAS-No	Weight %	SARA 313 - Threshold Values %
Vinylidene chloride	75-35-4	>95	1.0

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act)

Component	CWA - Hazardous Substances	CWA - Reportable Quantities	CWA - Toxic Pollutants	CWA - Priority Pollutants
Vinylidene chloride	X	100 lb	X	X

Clean Air Act

Component	HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Vinylidene chloride	X		-

OSHA - Occupational Safety and Health Administration: Not applicable

CERCLA: This material, as supplied, contains one or more substances regulated as a hazardous substance under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

Component	Hazardous Substances RQs	CERCLA EHS RQs
Vinylidene chloride	100 lb 1 lb	-

California Proposition 65: This product contains the following Proposition 65 chemicals.

Component	CAS-No	California Prop. 65	Prop 65 NSRL	Category
Vinylidene chloride	75-35-4	Carcinogen	0.88 µg/day	Carcinogen

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Vinylidene chloride	X	X	X	X	X
4-Methoxyphenol	X	X	X	-	X

U.S. Department of Transportation

Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland Security: This product contains the following DHS chemicals:
Legend - STQs = Screening Threshold Quantities, APA = A placarded amount

Component	DHS Chemical Facility Anti-Terrorism Standard
Vinylidene chloride	Release STQs - 10000lb

Other International Regulations

Mexico - Grade: No information available

16. Other information

Prepared By
Regulatory Affairs
Thermo Fisher Scientific
Email: EMSDS.RA@thermofisher.com

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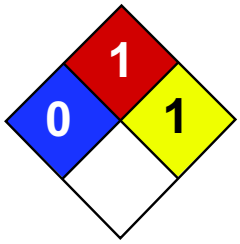
Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of SDS



Material Safety Data Sheet
Zinc Metal MSDS

Section 1: Chemical Product and Company Identification

Product Name: Zinc Metal

Catalog Codes: SLZ1054, SLZ1159, SLZ1267, SLZ1099, SLZ1204

CAS#: 7440-66-6

RTECS: ZG8600000

TSCA: TSCA 8(b) inventory: Zinc Metal

CI#: Not applicable.

Synonym: Zinc Metal Sheets; Zinc Metal Shot; Zinc Metal Strips

Chemical Name: Zinc Metal

Chemical Formula: Zn

Contact Information:

Sciencelab.com, Inc.
14025 Smith Rd.
Houston, Texas 77396

US Sales: **1-800-901-7247**
International Sales: **1-281-441-4400**

Order Online: ScienceLab.com

CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

International CHEMTREC, call: 1-703-527-3887

For non-emergency assistance, call: 1-281-441-4400

Section 2: Composition and Information on Ingredients

Composition:

Name	CAS #	% by Weight
Zinc Metal	7440-66-6	100

Toxicological Data on Ingredients: Zinc Metal LD50: Not available. LC50: Not available.

Section 3: Hazards Identification

Potential Acute Health Effects: Slightly hazardous in case of skin contact (irritant), of eye contact (irritant), of ingestion, of inhalation.

Potential Chronic Health Effects:
CARCINOGENIC EFFECTS: Not available. MUTAGENIC EFFECTS: Not available. TERATOGENIC EFFECTS: Not available. DEVELOPMENTAL TOXICITY: Not available. Repeated or prolonged exposure is not known to aggravate medical condition.

Section 4: First Aid Measures

Eye Contact:
Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs.

Skin Contact: Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops.

Serious Skin Contact: Not available.

Inhalation:
If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Serious Inhalation: Not available.

Ingestion:
Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.

Serious Ingestion: Not available.

Section 5: Fire and Explosion Data

Flammability of the Product: Flammable.

Auto-Ignition Temperature: 480°C (896°F)

Flash Points: Not available.

Flammable Limits: Not available.

Products of Combustion: Not available.

Fire Hazards in Presence of Various Substances:
Slightly flammable to flammable in presence of open flames and sparks, of heat, of oxidizing materials, of acids, of alkalis, of moisture. Non-flammable in presence of shocks.

Explosion Hazards in Presence of Various Substances:
Risks of explosion of the product in presence of mechanical impact: Not available. Risks of explosion of the product in presence of static discharge: Not available.

Fire Fighting Media and Instructions:
Flammable solid. SMALL FIRE: Use DRY chemical powder. LARGE FIRE: Use water spray or fog. Cool containing vessels with water jet in order to prevent pressure build-up, autoignition or explosion.

Special Remarks on Fire Hazards:
Zinc + NaOH causes ignition. Oxidation of zinc by potassium proceeds with incandescence. Residues from zinc dust /acetic acid reduction operations may ignite after long delay if discarded into waste bins with paper. Incandescent reaction when Zinc and Arsenic or Tellurium, or Selenium are combined. When hydrazine mononitrate is heated in contact with zinc, a flamming decomposition occurs at temperatures a little above its melting point. Contact with acids and alkali hydroxides (sodium hydroxide, postasium hydroxide, calcium hydroxide, etc.) results in evolution of hydrogen with sufficient heat of reaction to ignite the hydrogen gas. Zinc foil ignites if traces of moisture are present. It is water reactive and produces flammable gases on contact with water. It may ignite on contact with water or moist air.

Special Remarks on Explosion Hazards: Not available.

Section 6: Accidental Release Measures

Small Spill:
Use appropriate tools to put the spilled solid in a convenient waste disposal container. Finish cleaning by spreading water on the contaminated surface and dispose of according to local and regional authority requirements.

Large Spill:
Flammable solid that, in contact with water, emits flammable gases. Stop leak if without risk. Do not get water inside container. Do not touch spilled material. Cover with dry earth, sand or other non-combustible material. Prevent entry into sewers, basements or confined areas; dike if needed. Eliminate all ignition sources. Call for assistance on disposal. Finish cleaning by spreading water on the contaminated surface and allow to evacuate through the sanitary system.

Section 7: Handling and Storage

Precautions:
Keep away from heat. Keep away from sources of ignition. Ground all equipment containing material. Do not breathe dust. Keep away from incompatibles such as oxidizing agents, acids, alkalis, moisture.

Storage:
Keep container tightly closed. Keep container in a cool, well-ventilated area. Keep from any possible contact with water. Do not allow water to get into container because of violent reaction.

Section 8: Exposure Controls/Personal Protection

Engineering Controls:
Use process enclosures, local exhaust ventilation, or other engineering controls to keep airborne levels below recommended exposure limits. If user operations generate dust, fume or mist, use ventilation to keep exposure to airborne contaminants below the exposure limit.

Personal Protection: Safety glasses. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Gloves.

Personal Protection in Case of a Large Spill:
Splash goggles. Full suit. Dust respirator. Boots. Gloves. A self contained breathing apparatus should be used to avoid inhalation of the product. Suggested protective clothing might not be sufficient; consult a specialist BEFORE handling this product.

Exposure Limits: Not available.

Section 9: Physical and Chemical Properties

Physical state and appearance: Solid. (Lustrous solid. Metal solid.)

Odor: Not available.

Taste: Not available.

Molecular Weight: 65.39 g/mole

Color: Bluish-grey

pH (1% soln/water): Not applicable.

Boiling Point: 907°C (1664.6°F)

Melting Point: 419°C (786.2°F)

Critical Temperature: Not available.

Specific Gravity: Not available.

Vapor Pressure: Not applicable.

Vapor Density: Not available.

Volatility: Not available.

Odor Threshold: Not available.

Water/Oil Dist. Coeff.: Not available.

Ionicity (in Water): Not available.

Dispersion Properties: Not available.

Solubility: Insoluble in cold water, hot water, methanol, diethyl ether, n-octanol, acetone.

Section 10: Stability and Reactivity Data

Stability: The product is stable.

Instability Temperature: Not available.

Conditions of Instability: Excess heat, incompatible materials, moisture

Incompatibility with various substances:
Reactive with oxidizing agents, acids, alkalis. Slightly reactive to reactive with moisture. The product may react violently with water to emit flammable but non toxic gases.

Corrosivity: Non-corrosive in presence of glass.

Special Remarks on Reactivity:
Incompatible with acids, halogenated hydrocarbons, NH4NO3, barium oxide, Ba(NO3)2, Cadmium, CS2, chlorates, Cl2, CrO3, F2, Hydroxylamine, Pb(N3)2, MnCl2, HNO3, performic acid, KClO3, KNO3, N2O2, Selenium, NaClO3, Na2O2, Sulfur, Te, water, (NH4)2S, As2O3, CS2, CaCl2, chlorinated rubber, catalytic metals, halocarbons, o-nitroanisole, nitrobenzene, nonmetals, oxidants, paint primer base, pentacarbonoyliron, transition metal halides, seleninyl bromide, HCl, H2SO4, (Mg +Ba(NO3)2 +BaO2), (ethyl acetoacetate +tribromoneopentyl alcohol. Contact with Alkali Hydroxides(Sodium Hydroxide, Potassium Hydroxide, Calcium Hydroxide, etc) results in evolution of hydrogen. Ammonium nitrate + zinc + water causes a violent reaction with evolution of steam and zinc oxide. May react with water.

Special Remarks on Corrosivity: Not available.

Polymerization: Will not occur.

Section 11: Toxicological Information

Routes of Entry: Inhalation. Ingestion.

Toxicity to Animals:
LD50: Not available. LC50: Not available.

Chronic Effects on Humans: Not available.

Other Toxic Effects on Humans: Slightly hazardous in case of skin contact (irritant), of ingestion, of inhalation.

Special Remarks on Toxicity to Animals: Not available.

Special Remarks on Chronic Effects on Humans: Not available.

Special Remarks on other Toxic Effects on Humans:
Acute Potential Health Effects: Skin: May cause skin irritation. Dermal exposure to zinc may produce leg pains, fatigue, anorexia and weight loss. Eyes: May cause eye irritation. Ingestion: May be harmul if swallowed. May cause digestive tract irritation with tightness in throat, nausea, vomiting, diarrhea, loss of appetite, malaise, abdominal pain. fever, and chills. May affect behavior/central nervous system and autonomic nervous system with ataxia, lethargy, staggering gait, mild derrangement in cerebellar function, lightheadness, dizzness, irritability, muscular stiffness, and pain. May also affect blood. Inhalation: Inhalation of zinc dust or fumes may cause respiratory tract and mucous membrane irritation with cough and chest pain. It can also cause "metal fume fever", a flu-like condition characterized appearance of chills, headached fever, maliase, fatigue, sweating, extreme thirst, aches in the legs and chest, and difficulty in breathing. A sweet taste may also be be present in metal fume fever, as well as a dry throat, aches, nausea, and vomiting, and pale grey cyanosis. The toxicological properties of this substance have not been fully investisgated.

Section 12: Ecological Information

Ecotoxicity: Not available.

BOD5 and COD: Not available.

Products of Biodegradation:
Possibly hazardous short term degradation products are not likely. However, long term degradation products may arise.

Toxicity of the Products of Biodegradation: Not available.

Special Remarks on the Products of Biodegradation: Not available.

Section 13: Disposal Considerations

Waste Disposal:
Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Section 14: Transport Information

DOT Classification: Not a DOT controlled material (United States).

Identification: Not applicable.

Special Provisions for Transport: Not applicable.

Section 15: Other Regulatory Information

Federal and State Regulations:
New York release reporting list: Zinc Metal Rhode Island RTK hazardous substances: Zinc Metal Pennsylvania RTK: Zinc Metal Florida: Zinc Metal Michigan critical material: Zinc Metal Massachusetts RTK: Zinc Metal New Jersey: Zinc Metal California Director's List of Hazardous Substances: Zinc Metal TSCA 8(b) inventory: Zinc Metal TSCA 12(b) one time export: Zinc Metal SARA 313 toxic chemical notification and release reporting: Zinc Metal CERCLA: Hazardous substances.: Zinc Metal: 1000 lbs. (453.6 kg)

Other Regulations: EINECS: This product is on the European Inventory of Existing Commercial Chemical Substances.

Other Classifications:

WHMIS (Canada): Not Available

DSCL (EEC):
R15- Contact with water liberates extremely flammable gases. R17- Spontaneously flammable in air. S7/8- Keep container tightly closed and dry.

HMIS (U.S.A.):

Health Hazard: 1

Fire Hazard: 1

Reactivity: 1

Personal Protection: E

National Fire Protection Association (U.S.A.):

Health: 0

Flammability: 1

Reactivity: 1

Specific hazard:

Protective Equipment:
Gloves. Lab coat. Dust respirator. Be sure to use an approved/certified respirator or equivalent. Safety glasses.

Section 16: Other Information

References: Not available.

Other Special Considerations: Not available.

Created: 10/10/2005 12:18 AM

Last Updated: 11/06/2008 12:00 PM

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ATTACHMENT F

JOBSITE SAFETY INSPECTION CHECKLIST

Jobsite Safety Inspection Checklist

Date: _____ **Inspected By:** _____

Location: _____ **Project #:** _____

Check one of the following: **A:** Acceptable **NA**: Not Applicable **D**: Deficiency

	A	NA	D	Remark
1. HASP available onsite for inspection?				
2. Health & Safety Compliance agreement (in HASP) appropriately signed by Langan employees and contractors?				
3. Hospital route map with directions posted on site?				
4. Emergency Notification List posted on site?				
5. First Aid kit available and properly stocked?				
6. Personnel trained in CPR/First Aid on site?				
7. MSDSs readily available, and all workers knowledgeable about the specific chemicals and compounds to which they may be exposed?				
8 Appropriate PPE being worn by Langan employees and contractors?				
9. Project site safe practices ("Standing Orders") posted?				
10. Project staff have 40-hr./8-hr./Supervisor HAZWOPER training?				
11. Project staff medically cleared to work in hazardous waste sites and fit-tested to wear respirators, if needed?				
12. Respiratory protection readily available?				
13. Health & Safety Incident Report forms available?				
14. Air monitoring instruments calibrated daily and results recorded on the Daily Instrument Calibration check sheet?				
15. Air monitoring readings recorded on the air monitoring data sheet/field log book?				
16. Subcontract workers have received 40-hr./8-hr./Spvsr. HAZWOPER training, as appropriate?				
17. Subcontract workers medically cleared to work on site, and fit-tested for respirator wear?				
18. Subcontract workers have respirators readily available?				
19. Mark outs of underground utilities done prior to initiating any subsurface activities?				
20. Decontamination procedures being followed as outlined in HASP?				
21. Are tools in good condition and properly used?				
22. Drilling performed in areas free from underground objects including utilities?				

23. Adequate size/type fire extinguisher supplied?				
24. Equipment at least 20 feet from overhead power lines?				
25. Evidence that drilling operator is responsible for the safety of his rig.				
26. Trench sides shored, layer back, or boxed?				
27. Underground utilities located and authorities contacted before digging?				
28. Ladders in trench (25-foot spacing)?				
29. Excavated material placed more than 2 feet away from excavation edge?				
30. Public protected from exposure to open excavation?				
31. People entering the excavation regarding it as a permit-required confined space and following appropriate procedures?				
32. Confined space entry permit is completed and posted?				
33. All persons knowledgeable about the conditions and characteristics of the confined space?				
34. All persons engaged in confined space operations have been trained in safe entry and rescue (non-entry)?				
35. Full body harnesses, lifelines, and hoisting apparatus available for rescue needs?				
36. Attendant and/or supervisor certified in basic first aid and CPR?				
37. Confined space atmosphere checked before entry and continuously while the work is going on?				
38. Results of confined space atmosphere testing recorded?				
39. Evidence of coordination with off-site rescue services to perform entry rescue, if needed?				
40. Are extension cords rated for this work being used and are they properly maintained?				
41. Are GFCIs provided and being used?				

Unsafe Acts: _____

_____

_____

_____

Notes: _____

_____

_____

_____

ATTACHMENT G

JOB SAFETY ANALYSIS FORM

LANGAN	Job Safety Analysis (JSA) Health and Safety
JSA Title: COVID-19 Awareness – Site Work **JSA Number: JSA046-00**	
A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions. Prior to the start of any work "TAKE 5" and conduct a Last Minute Risk Assessment.	

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):				
☒ Safety Boots	☐ Long Sleeves	☐ Safety Vest (Class 2)	☐ Hard Hat	☐ Hearing Protection
☐ Safety Glasses	☐ Safety Goggles	☐ Face Shield	☐ Nitrile Gloves	☐ PVC Gloves
☐ Leather Gloves	☐ Cut Resist. Gloves	☐ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☐ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☐ Traffic Cones/Signs	☐ Life Vest/Jacket	
☒ Other: Alcohol-based hand sanitizer, disinfectant wipes/spray				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
1. All Activities	1. Transmittal/exposure of COVID-19	1. Ask yourself and your managers – is this work essential? Can this be done remotely? 2. Stay home if sick or showing symptoms of COVID-19 (e.g. fever, cough, etc.). 3. Carry nitrile gloves, alcohol-based hand sanitizer, face coverings and disinfectant wipes/spray during field work. 4. Check federal, state, and/or local travel restrictions **prior** to travel. Many states, counties, and cities are passing strict "shelter-in-place" or business restrictions in response to COVID-19. 5. Immediately notify Beverly Williams or Rory Johnston (Supervisor if employee chooses) if you display symptoms of COVID-19. Symptoms include fever (over 100.4 F), cough, and shortness of breath. 6. Notify Beverly Williams or Rory Johnston, Supervisor and Coronavirus Task Force if you had close contact with an individual who tested positive or displayed symptoms of COVID-19. 7. Do not touch your face, to the extent possible. 8. Wear face coverings when around other worker to minimize spread of COVID-19. (May be required in certain states or locations.)

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
		9. Practice social distancing, maintaining at least 6 feet of distance between yourself and others. Avoid gatherings of more than 10 people. Limit, to the extent possible, contact with public items/objects. 10. Clean your hands frequently with soap and water for at least 20 seconds especially after you have been in a public place, or after blowing your nose, coughing, sneezing, or using the rest room. 11. If soap and water are not readily available, use a hand sanitizer that contains at least 60% alcohol. Cover all surfaces of your hands and rub them together until they feel dry. 12. Cover your mouth and nose with a tissue when you cough or sneeze or use the inside of your elbow. 13. Clean and disinfect frequently touched surfaces daily, for example, cell phones, computer equipment, headsets, tables, doorknobs, light switches, countertops, handles, desks, toilets, faucets, and sinks.
2. Travel to Jobsite	1. Transmittal/exposure of COVID-19 between passengers 2. Transmittal/exposure of COVID-19 from previous occupants (rental and fleet vehicles) 3. Transmittal/exposure of COVID-19 while refueling	1. Limit the number of occupants to each vehicle to 2 people. Employees should sit as far away from each other as possible. 2. Disinfect high “hand-traffic” areas of the vehicle: Door handles, steering wheel, turn signal and control rods, dashboard controls, seatbelts, armrests, etc. To the extent possible, do not use recycled air for heat/AC and travel with the windows open. 3. Use hand sanitizer before and after pumping gas and only return to the inside of the vehicle after refueling is complete. 4. Wear nitrile gloves if available or disinfect the key pad, pump handle, and fuel grade button prior to use. 5. Recommend face coverings are worn to minimize spread of COVID-19.
3. Conduct Tailgate Safety Meeting & Complete H&S Paperwork	1. Transmittal/exposure of COVID-19 between meeting participants	1. Practice social distancing, maintaining at least 6 feet of distance between yourself and others. 2. Recommend face coverings are worn when around other workers to minimize spread of COVID-19, 3. Hold meetings outside and keep in mind wind direction. To the extent possible, remain cross-wind from other people. 4. Designate a single person to maintain sign-in sheets/permits throughout the day to limit the passing of pens/clipboards between people. 5. Each person should complete their own JSA, even if they are completing similar tasks as others in order to limit the passing of paper/pens/clipboards between people. 6. Include COVID-19 topics and prevention measures in safety meetings.
4. Conduct Site Work	1. Transmittal/exposure of COVID-19 between site workers and public.	1. Practice social distancing maintaining 6 feet of distance between yourself and others. 2. Recommend face coverings are worn when around other workers to minimize spread of COVID-19, 3. To the extent possible, do not interact with the public. If it is necessary, politely explain you are practicing social distance and request they stay at least 6 feet away and they do not attempt to pass objects to you. 4. Wear nitrile gloves during site work underneath the appropriate gloves for your task. Utilize appropriate decontamination procedures, securely bag all waste (including nitrile gloves) generated during site work and dispose of.

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
		5. Do not share tools. Each person should be equipped with the tools to complete their task or tasks should be divided to remove the need to share tools. If tools must be shared, surfaces should be disinfected. 6. Clean and disinfect surfaces of rental tools and equipment upon receipt. To the extent possible rent equipment from Langan's internal equipment reservation center, where cleaning/disinfecting procedures can be verified.
5. Use of Construction Trailers	1. Transmittal/exposure of COVID-19 between site workers and others.	1. Avoid use of shared trailers, if possible. Minimize trailer use to essential personnel. 2. Practice social distancing; maintaining 6 feet of distance between yourself and others in trailer. 3. Clean and disinfect areas including desks, phones, chairs and other common areas, before and after use.
6. Purchasing Food from a Restaurant	1. Transmittal/exposure of COVID-19 from other customers, staff, surfaces.	1. To the extent possible, bring your own food. 2. If you must visit a restaurant, call ahead for take-out or "contactless delivery". Do not dine in. When picking up food, follow guidelines for Job Step #8: Purchasing Supplies at Retail/Shipping Centers. 3. Wash hands before and after eating.
7. Smoking Cigarettes	1. Transmittal/exposure of COVID-19 by touching mouth with hands	1. Cigarette smokers maybe at greater risk of complications arising from COVID-19. Nicotine patches/lozenges/gum, smoking cessation programs, and prescription medications may aid in "kicking the habit" if you decide to quit. 2. Wash hands thoroughly before and after smoking. 3. Discard cigarette butts properly. Do not light cigarettes from others and do not give cigarettes to others.
8. Hotel Stay	1. Transmittal/exposure of COVID-19 from previous occupants, hotel staff, common areas.	1. Verify the hotel chain/brand has modified cleaning procedures to reflect risk of COVID-19. Most hotel companies have issued statements on their websites and in email blasts reflecting these new procedures. 2. Use the front door, and not peripheral entrances. Front doors of hotels are generally automatic. 3. Request ground floor room to avoid elevator use and a room that has not be utilized in 48-72 hours. 4. If elevator use is required, do not directly touch elevator buttons with your hands. Do not ride elevators with other people, to the extent possible. 5. Bring disinfecting wipes or sanitizing spray. Upon arrival, disinfect high "hand-traffic" areas of the hotel room: Door handles, light switches, shower/sink faucet handles, TV remote, curtain/blind handles. Clean these surfaces daily. 6. Place the "Do Not Disturb" Sign on your door to prevent people (housekeeping) from entering your room. 7. Avoid common spaces and hotel sponsored events where crowds will be present. 8. Confirm hotel cleaning procedures have been modified to address COVID-19. Confirm no COVID-19 cases have occurred in hotel
9. Purchasing Supplies at Retail/Shipping Centers	1. Transmittal/exposure of COVID-19 from other customers, staff, surfaces.	1. Plan your travel to limit the need to visit retail/shipping centers. 2. Practice social distancing, maintaining at least 6 feet of distance between yourself and others. If the store is too crowded/small, consider visiting another store or returning at a different time. 3. Avoid high "hand-traffic" items/areas like door handles (i.e. use your shoulder, hip/butt, or open with a disposable napkin/paper towel), credit cards terminals (i.e. use Apple/Android pay if available), shopping carts/baskets (i.e. bring your own shopping

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
		bags), counter tops (i.e. ask clerk if you can hold the items while they are scanned) and bulk/buffet items (i.e. just avoid them). 4. Disinfect your hands before and after visiting a retail/shipping center.

Print Name	Sign Name	Date
Prepared by:		
Reviewed by:		

LANGAN

Job Safety Analysis (JSA)
Health and Safety

JSA Title: **Environmental Sampling**
JSA Number: **JSA021-01**

A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions. Prior to the start of any work "TAKE 5" and conduct a Last Minute Risk Assessment.

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):				
☒ Safety Shoes	☒ Long Sleeves	☒ Safety Vest (Class 2)	☒ Hard Hat	☐ Hearing Protection
☒ Safety Glasses	☐ Safety Goggles	☐ Face Shield	☒ Nitrile Gloves	☐ PVC Gloves
☐ Leather Gloves	☐ Cut Resist. Gloves	☐ Fall Protection	☒ Fire Resistant Clothing	☐ Rubber Boots
☒ Insect/Animal Repellent	☒ Ivy Blocker/Cleaner	☐ Traffic Cones/Signs	☐ Life Vest/Jacket	
☒ Other: Tyvek Sleeves				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
1. Drive to sample location	1. Rough/Off Road terrain	1. Pay attention to road conditions such as road erosion, unprotected embankments, and soft road conditions.
2. Sample Collection (Walking)	1. Slip/Trips/Falls 2. Back strains 3. Wildlife (Insects, Stray animals, rodents) 4. Poisonous vegetation	1. Minimize distance to sample area/ Plan route and check surface prior to carrying heavy equipment/ Locate safest access point/ Follow good housekeeping procedures/ Mark significant below grade hazards (holes, trenches) with spray paint or cones/ Wear foot protection with ankle support and gripping soles. 2. Use proper lifting techniques/ Use wheeled transport/ Obtain assistance where and when needed/ Consider load weight when evaluating what is safe and unsafe to carry. 3. Be aware of surroundings for the presence of wildlife. Do not approach stray animals. Carry and use animal repellant when needed/ Use bug spray when needed. 4. Keep skin covered/ Identify and avoid poisonous vegetation/ Clean areas after contact with suspected vegetation.
3. Sample Collection (Water)	1. Drowning Hazards 2. Chemical burns (when adding acid preservative to sample) 3. Back Strains 4. Ergonomic issues 5. Slip/Trips/Falls	1. Use buddy system/ Wear flotation vest if water is deeper than 2 feet or swift moving/ Select working area with stable footing. Do not attempt to cross or stand in swift moving water. 2. Wear proper PPE (Nitrile gloves, Tyvek Sleeves) 3. Use proper lifting techniques/ Use wheeled transport/ Obtain assistance where and when needed/ Consider load weight when evaluating what is safe or unsafe to carry. 4. When possible avoid bending over for long periods of time/ Use a small stool for sitting or knee pad for kneeling.

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
		5. Minimize distance to sample area/ Plan route and check surface prior to carrying heavy equipment/ Locate safest access point/ Follow good housekeeping procedures/ Mark significant below grade hazards (holes, trenches) with spray paint or cones/ Wear foot protection with ankle support and gripping soles/ Avoid standing water or slippery terrain.
4. All activities	1. Slips/ Trips/ Falls 2. Hand injuries, cuts or lacerations during manual handling of materials 3. Foot injuries 4. Back injuries 5. Traffic 6. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 7. High Noise levels 8. Overhead hazards 9. Heat Stress/ Cold Stress 10. Eye Injuries	1. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 2. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 3. Wear Langan approved safety shoes 4. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 5. Wear high visibility clothing & vest / Use cones or signs to designate work area 6. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 7. Wear hearing protection 8. Wear hard hat / Avoid areas were overhead hazards exist. 9. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 10. Wear safety glasses
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date
Prepared by:		
Reviewed by:		

LANGAN

Job Safety Analysis (JSA)
Health and Safety

JSA Title: **Subsurface Investigation**
JSA Number: **JSA030-01**

A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions. Prior to the start of any work "TAKE 5" and conduct a Last Minute Risk Assessment.

S – *Stop,* what has changed?
T – *Think* about the task
E – *Evaluate* potential hazards
P – *Plan* safe approach
S - *Start* task / *Stop* & regroup

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):				
☒ Safety Shoes	☒ Long Sleeves	☒ Safety Vest (Class 2)	☒ Hard Hat	☒ Hearing Protection
☒ Safety Glasses	☒ Safety Goggles	☐ Face Shield	☐ Nitrile Gloves	☐ PVC Gloves
☒ Leather Gloves	☒ Cut Resist. Gloves	☐ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☐ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☐ Traffic Cones/Signs	☐ Life Vest/Jacket	
☒ Other: Dielectric Overshoes, Sun Block				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
5. Transport equipment to work area	2. Back/strain 3. Slip/Trip/Falls 4. Traffic 5. Cuts/abrasions/contusions from equipment 6. Accidents due to vehicle operations	1. Use proper lifting techniques/Use wheeled transport 2. Minimize distance to work area/unobstructed path to work area/follow good housekeeping procedures 3. Wear proper PPE (high visibility vest or clothing) 4. Wear proper PPE (leather gloves, long sleeves, Langan approved safety shoes) 5. Observe posted speed limits/ Wear seat belts at all times
6. Traffic	1. Hit by moving vehicle	1. Use traffic cones and signage/ Use High visibility traffic vests and clothing/ Caution tape when working near active roadways.
7. Field Work (drilling, resistivity testing, and inspection)	1. Biological Hazards: insects, rats, snakes, poisonous plants, and other animals 2. Heat stress/injuries 3. Cold Stress/injuries 4. High Energy Transmission Lines 5. Underground Utilities 6. Electrical (soil resistivity testing)	1. Inspect work area to identify biological hazards. Wear light colored long sleeve shirt and long pants/ Use insect repellant as necessary/ Beware of tall grass, bushes, woods and other areas where ticks may live/ Avoid leaving garbage on site to prevent attracting animals/ Identify and avoid contact with poisonous plants/Beware of rats, snakes, or stray animals. 2. Wear proper clothing (light colored)/ drink plenty of water/ take regular breaks/use sun block 3. Wear proper clothing/ dress in layers/ take regular breaks. 4. Avoid direct contact with high energy transmission lines/ position equipment at least 15 feet or as required by PSE&G from the transmission lines/ wear proper PPE (dielectric overshoes 15 kV minimum rating).

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
		5. Call one-call service before performing intrusive field work/ Review utility mark-outs and available utility drawings (with respect to proposed work locations)/ Follow Underground Utility Guidelines 6. See AGI Sting R1 operating manual for specific concerns during operating instrument
8. All activities	1. Slips/ Trips/ Falls 2. Hand injuries, cuts or lacerations during manual handling of materials 3. Foot injuries 4. Back injuries 5. Traffic 6. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 7. High Noise levels 8. Overhead hazards 9. Heat Stress/ Cold Stress 10. Eye Injuries	7. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 8. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 9. Wear Langan approved safety shoes 10. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 11. Wear high visibility clothing & vest / Use cones or signs to designate work area 12. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 13. Wear proper hearing protection 14. Wear hard hat / Avoid areas were overhead hazards exist. 15. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 16. Wear safety glasses
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date
Prepared by:		
Reviewed by:		

LANGAN	Job Safety Analysis (JSA) Health and Safety
JSA Title: Field Sampling **JSA Number:** JSA022-01 **A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions. Prior to the start of any work "TAKE 5" and conduct a Last Minute Risk Assessment.**	 **S** – ***Stop,*** *what has changed?* **T** – ***Think*** *about the task* **E** – ***Evaluate*** *potential hazards* **P** – ***Plan*** *safe approach* **S** - ***Start*** *task /* ***Stop*** *& regroup*

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):				
☒ Safety Shoes	☒ Long Sleeves	☐ Safety Vest (Class 2)	☒ Hard Hat	☒ Hearing Protection
☒ Safety Glasses	☐ Safety Goggles	☐ Face Shield	☒ Nitrile Gloves	☐ PVC Gloves
☒ Leather Gloves	☐ Cut Resist. Gloves	☐ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☐ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☒ Traffic Cones/Signs	☐ Life Vest/Jacket	
☐ Other:				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
9. Unpack/Transport equipment to work area.	7. Back Strains 8. Slip/Trips/Falls 9. Cuts/Abrasions from equipment 10. Contusions from dropped equipment	6. Use proper lifting techniques/Use wheeled transport 7. Minimize distance to work area/Unobstructed path to work area/follow good housekeeping procedures. Mark slip/trip/fall hazards with orange safety cones. 8. Wear proper PPE (leather gloves, long sleeves). 9. Wear proper PPE (Langan approved safety shoes).
10. Initial Site Arrival-Site Assessment	5. Traffic	5. Situational awareness (be alert of your surroundings). Secure area from through traffic.
11. Surface Water Sampling	6. Contaminated media. Skin/eye contact with biological agents and/or chemicals.	6. Wear appropriate PPE (Safety glasses, appropriate gloves). Review (M)SDS for all chemicals being.
12. Sampling from bridges	1. Struck by vehicles	1. Wear appropriate PPE (Safety Vest). Use buddy system and orange safety cones.
13. Icing of Samples/ Transporting coolers/equipment from work area.	11. Back Strains 12. Slips/Trips/Falls 13. Cuts/Abrasions from equipment 14. Pinch/Crushing Hazards.	17. Drain coolers of water. Use proper lifting techniques. Use wheeled transport. 18. Have unobstructed path from work area. Aware of surroundings. 19. Wear proper PPE (Leather gloves, long sleeves) 20. Wear proper PPE (Leather gloves, long sleeves)
14. Site Departure	1. Contaminated PPE/Vehicle	1. Contaminated PPE should be disposed of on-site. Remove boots and soiled clothing for secure storage in trunk. Wash hands promptly.

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
15. All activities	1. Slips/ Trips/ Falls 2. Hand injuries, cuts or lacerations during manual handling of materials 3. Foot injuries 4. Back injuries 15. Traffic 16. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 17. High Noise levels 18. Overhead hazards 19. Heat Stress/ Cold Stress 20. Eye Injuries	1. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 2. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 3. Wear Langan approved safety shoes 4. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 21. Wear high visibility clothing & vest / Use cones or signs to designate work area 22. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 23. Wear hearing protection 24. Wear hard hat / Avoid areas were overhead hazards exist. 25. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 26. Wear safety glasses
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date
Prepared by:		
Reviewed by:		

LANGAN	Job Safety Analysis (JSA) Health and Safety
JSA Title: Equipment Transportation and Set-up **JSA Number:** JSA012-01 **A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions. Prior to the start of any work "TAKE 5" and conduct a Last Minute Risk Assessment.**	 **S** – ***Stop,*** *what has changed?* **T** – ***Think*** *about the task* **E** – ***Evaluate*** *potential hazards* **P** – ***Plan*** *safe approach* **S** - ***Start*** *task /* ***Stop*** *& regroup*

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):				
☒ Safety Shoes	☒ Long Sleeves	☒ Safety Vest (Class 2)	☒ Hard Hat	☒ Hearing Protection
☒ Safety Glasses	☐ Safety Goggles	☐ Face Shield	☐ Nitrile Gloves	☐ PVC Gloves
☒ Leather Gloves	☐ Cut Resist. Gloves	☐ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☐ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☐ Traffic Cones/Signs	☐ Life Vest/Jacket	
☐ Other:				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
16. Transport equipment to work area	11. Back Strain 12. Slips/ Trips/ Falls 13. Traffic 14. Cuts/abrasions from equipment 15. Contusions from dropped equipment	1. Use proper lifting techniuqes / Use wheeled transport 2. Minimize distance to work area / Have unobstructed path to work area / Follow good housekeeping procedures 3. Wear proper PPE (high visibility vest or clothing) 4. Wear proper PPE (leather gloves, long sleeves) 5. Wear proper PPE (safety shoes)
17. Moving equipment to its planned location	6. Pinch Hazard 7. Slips/ Trips/ Falls	1. Wear proper PPE (leather gloves) 2. Be aware of potential trip hazards / Practice good housekeeping procedures / Mark significant below-grade hazards (i.e. holes, trenches) with safety cones or spray paint
18. Equipment Set-up	7. Pinch Hazard 8. Cuts/abrasions to knuckles/hands 9. Back Strain	1. Wear proper PPE (leather gloves) 2. Wear proper PPE (leather gloves) 3. Use proper lifting techniques / Use wheeled transport
19. All activities	21. Slips/ Trips/ Falls 22. Hand injuries, cuts or lacerations during manual handling of materials 23. Foot injuries 24. Back injuries 25. Traffic 26. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.)	27. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 28. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 29. Wear Langan approved safety shoes

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
4. All activities (cont'd)	27. High Noise levels 28. Overhead hazards 29. Heat Stress/ Cold Stress 30. Eye Injuries	30. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 31. Wear high visibility clothing & vest / Use cones or signs to designate work area 32. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 33. Wear hearing protection 34. Wear hard hat / Avoid areas were overhead hazards exist. 35. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 36. Wear safety glasses
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date
Prepared by:		
Reviewed by:		

LANGAN

Job Safety Analysis (JSA)
Health and Safety

JSA Title: **55-gallon Drum Sampling**
JSA Number: **JSA043-01**

A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions. Prior to the start of any work "TAKE 5" and conduct a Last Minute Risk Assessment.

S – *Stop,* what has changed?
T – *Think* about the task
E – *Evaluate* potential hazards
P – *Plan* safe approach
S - *Start* task / *Stop* & regroup

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):				
☒ Safety Shoes	☒ Long Sleeves	☒ Safety Vest (Class 2)	☒ Hard Hat	☐ Hearing Protection
☒ Safety Glasses	☒ Safety Goggles	☒ Face Shield	☒ Nitrile Gloves	☒ PVC Gloves
☒ Leather Gloves	☐ Cut Resist. Gloves	☐ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☐ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☐ Traffic Cones/Signs	☐ Life Vest/Jacket	
☒ Other: All Drums are required to be labeled. Langan employees do not open or move undocumented drums or unlabeled drums without proper project manager authorization.				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
20. Unpack/Transport equipment to work area.	16. Back Strains 17. Slip/Trips/Falls 18. Cuts/Abrasions from equipment 4. Contusions from dropped equipment	10. Use proper lifting techniques/Use wheeled transport 11. Minimize distance to work area/Unobstructed path to work area/follow good housekeeping procedures. Mark slip/trip/fall hazards with orange safety cones. 12. Wear proper PPE (leather gloves, long sleeves). 4. Wear proper PPE (Langan approved safety shoes).
21. Open Drums	1. Hand Injuries, cuts or lacerations when untightening drum locking bolt, removing drum lid strap, or removing lid. 2. Pressure from drums.	1. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves. Use non-metallic mallet and non-sparking tools/wrenches. 2. Open drum slowly to relieve pressure. Wear proper PPE: face shield and goggles; correct gloves; and over garments.
22. Collecting Soil/Fluid Sample	8. Irritation to eye from vapor, soil dust, or splashing 9. Irritation to exposed skin	6. Wear proper eye protection including safety glasses/ face shield/googles and when necessary, splash guard. If dust or vapor phase is present, wear appropriate safety breathing gear (1/2 mask or full face mask with correct filter) 7. Wear proper skin protection including nitrile gloves.
23. Closing Drums	1. Hand Injuries, cuts or lacerations when untightening drum locking bolt, removing drum lid strap, or removing lid.	7. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves. Use non-metallic mallet and non-sparking tools/wrenches.

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
24. Moving Drums	2. Hand Injuries, cuts or lacerations when untightening drum locking bolt, removing drum lid strap, or removing lid. 3. Back Strains	2. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves. Use non-metallic mallet and non-sparking tools/wrenches. 3. Use proper lifting techniques/Use wheeled transport
25. All activities	31. Slips/ Trips/ Falls 32. Hand injuries, cuts or lacerations during manual handling of materials 33. Foot injuries 34. Back injuries 35. Traffic 36. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 37. High Noise levels 38. Overhead hazards 39. Heat Stress/ Cold Stress 40. Eye Injuries	37. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 38. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 39. Wear Langan approved safety shoes 40. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 41. Wear high visibility clothing & vest / Use cones or signs to designate work area 42. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 43. Wear hearing protection 44. Wear hard hat / Avoid areas were overhead hazards exist. 45. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 46. Wear safety glasses
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date
Prepared by:		
Reviewed by:		

LANGAN

Job Safety Analysis (JSA)
Health and Safety

JSA Title: **Direct-Push Soil Borings**
JSA Number: **JSA004-01**

A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions. Prior to the start of any work "TAKE 5" and conduct a Last Minute Risk Assessment.

S – ***Stop,*** *what has changed?*
T – ***Think*** *about the task*
E – ***Evaluate*** *potential hazards*
P – ***Plan*** *safe approach*
S - ***Start*** *task /* ***Stop*** *& regroup*

PERSONAL PROTECTIVE EQUIPMENT REQUIRED:				
☒ Safety Shoes	☒ Long Sleeves	☒ Safety Vest (Class 2)	☒ Hard Hat	☒ Hearing Protection
☒ Safety Glasses	☐ Safety Goggles	☐ Face Shield	☒ Nitrile Gloves	☐ PVC Gloves
☒ Leather Gloves	☒ Cut Resist. Gloves	☐ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☐ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☐ Traffic Cones/Signs	☐ Life Vest/Jacket	
☒ Other: Half-face respirator, dust cartridges, PID (if applicable)				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
26. Move equipment to work site	19. Back strain when lifting equipment 20. Slips/ Trips/ Falls while moving equipment 21. Traffic (if applicable) 22. Pinched fingers or running over toes during geoprobe set-up 23. Overturn drilling rig while transporting to loading dock on flat-bed tow truck	13. Use proper lifting technique (use legs for bending and lifting and not the back)/ Use wheeled transport for heavy equipment / Get assistance when handling loads greater than 50 lbs. / Minimize distance to vehicle 14. Use proper lifting technique (use legs for bending and lifting and not the back) / Use wheeled transport for heavy equipment / Get assistance when handling loads greater than 50 lbs. / Minimize distance to vehicle / Have unobstructed path to vehicle or collection point / Do not lift/walk with boxes that are heavy/difficult to lift 15. Wear high visibility safety vests or clothing / Exercise caution 16. Wear proper PPE (cut-resistant gloves) / Stay alert, be aware of geoprobe rig at all times 17. Drill rig should be parked in center of flat-bed tow truck / Emergency brake shall be used at all times during transport on the flat-bed truck/ All unnecessary personnel should stay away from the flat-bed truck during moving activities
27. Calibration of monitoring equipment	10. Skin or eye contact with calibration chemicals 11. Pinch fingers in monitoring equipment	8. Wear proper PPE (safety glasses/ goggles) 9. Wear proper PPE (leather gloves)
28. Set-up geoprobe rig	10. Geoprobe rig movement	8. All field personnel should stay clear of the geoprobe rig while moving / Use a spotter when backing up the geoprobe
29. Advance geoprobe rods below ground surface to desired depth	4. Underground utilities 5. High noise levels	4. Clean all subsurface soil borings to a minimum of 5 feet below grade 5. Wear proper PPE (hearing protection)

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
30. Remove and open acetate liner 5. Remove and open acetate liner (cont'd)	41. Pinched fingers while removing macrocore 42. Cuts/lacerations when cutting acetate liner open 43. Exposure to hazardous vapors 44. Skin contact with contaminated soil	1. Wear proper PPE (nitrile gloves, cut-resistant or leather gloves 2. Wear proper PPE (cut-resistant or leather gloves) 3. Do not place face over acetate liner when opening / Monitor hazardous vapors in air with PID / Upgrade PPE as necessary based on levels contained in the Health and Safety Plan 4. Wear proper PPE (nitrile gloves)
31. Sample Collections a) Monitor parameters b) Prepare sample containers and labels	1. Contact with potentially contaminated soil 2. Lacerations from broken sample bottles 3. Back strain while transporting full coolers 4. Internal exposure to contaminants and metals through inhalation of dust 5. Slips/ Trips/ Falls	1. Use monitoring devices / Wear proper PPE (safety glasses, nitrile gloves) 2. Do not over-tighten bottle caps / Handle bottles safely to prevent breakage 6. Use proper lifting techniques / Do not lift heavy loads without assistance 7. Avoid creating dust / If necessary, wear a half mask respirator with applicable dust cartridge / Inspect respirator for damage and cleanliness prior to use / Clean respirator after each use and store in a clean, secure location 8. Be alert / Follow good housekeeping procedures
32. Remove excess soil from acetate liner and place in 55-gallon drum (IF NOT PERFORMED BY LANGAN, REMOVE!)	1. Cuts/lacerations from acetate liner 2. Pinched fingers/hand while opening/closing drum 3. Skin contact with contaminated soil 4. Soil debris in eyes	1. Wear proper PPE (cut-resistant or leather gloves) 2. Wear proper PPE (cut-resistant or leather gloves) 3. Wear proper PPE (nitrile gloves) 4. Wear proper PPE (safety glasses)

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
8. Transport drums to central staging location (IF NOT PERFORMED BY LANGAN, REMOVE!)	1. Back, arm or shoulder strain from moving drums 2. Pinch fingers/hand in drum cart when moving drums 3. Pinch fingers/hand when operating lift-gate on vehicle 4. Contact with potentially contaminated groundwater when moving improperly sealed drums 5. Slips when moving drums 6. Drop drum on feet/toes	47. Use drum cart for moving drums / Use proper lifting techniques / Do not lift heavy loads without assistance 48. Wear proper PPE (cut-resistant or leather gloves) 49. Wear proper PPE (cut-resistant or leather gloves) 50. Wear proper PPE (nitrile gloves underneath work gloves) 51. Follow good housekeeping procedures / Ensure route to move drum and storage space is free from obstructions 52. Wear proper PPE (safety shoes) / Work in a safe manner to prevent dropped drum
9. All activities 9. All activities (cont'd)	1. Slips/ Trips/ Falls 2. Hand injuries, cuts or lacerations during manual handling of materials 3. Foot injuries 4. Back injuries 5. Traffic 6. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 7. High Noise levels 8. Overhead hazards 9. Heat Stress/ Cold Stress 10. Eye Injuries	1. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 2. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 3. Wear Langan approved safety shoes 4. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 5. Wear high visibility clothing & vest / Use cones or signs to designate work area 6. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 7. Wear hearing protection 8. Wear hard hat / Avoid areas were overhead hazards exist. 9. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 10. Wear safety glasses
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date

Prepared by:		
Reviewed by:		

LANGAN

Job Safety Analysis (JSA)
Health and Safety

JSA Title: Geophysical Investigation
JSA Number: JSA023-01

A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions. Prior to the start of any work "TAKE 5" and conduct a Last Minute Risk Assessment.

S – *Stop,* what has changed?
T – *Think* about the task
E – *Evaluate* potential hazards
P – *Plan* safe approach
S - *Start* task / *Stop* & regroup

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):				
☒ Safety Shoes	☒ Long Sleeves	☒ Safety Vest (Class 2)	☒ Hard Hat	☒ Hearing Protection
☒ Safety Glasses	☐ Safety Goggles	☐ Face Shield	☒ Nitrile Gloves	☐ PVC Gloves
☒ Leather Gloves	☒ Cut Resist. Gloves	☐ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☐ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☐ Traffic Cones/Signs	☐ Life Vest/Jacket	
☐ Other:				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
33. Transport equipment to work area	24. Back/strain 25. Slip/Trip/Falls 26. Traffic 27. Cuts/abrasions/contusions from equipment	18. Use proper lifting techniques/Use wheeled transport 19. Minimize distance to work area/unobstructed path to work area/follow good housekeeping procedures 20. Wear proper PPE (high visibility vest or clothing) 21. Wear proper PPE (leather gloves, long sleeves, Langan approved safety shoes)
34. Supervision of subcontractor and all other activities	12. Slip/Trips/Falls 13. Hand injuries 14. Foot injuries 15. Back injuries/Strains 16. Traffic 17. Wildlife a. Wildlife b. Mice/rats c. Vectors (i.e. mosquitoes, bees, etc.) 7. Heat/Cold Stress	10. Be aware of potential trip hazards/follow good housekeeping procedures/mark significant below-grade hazards (i.e. holes, trenches, wires, ropes) with safety cones or spray paint. 11. Wear proper PPE (leather gloves)/watch wear you place your hands/inspect material or equipment for jagged, rough or slippery surfaces/ watch for pinch points/ wipe off slippery, wet, or dirty items prior to handling. 12. Wear proper PPE (Langan approved safety shoes)/ Be aware of uneven terrain) 13. Use proper lifting techniques/ Buddy system when lifting/ use wheeled transport. 14. Wear proper PPE (high-visibility shirts and vests)/ use cones if appropriate/ notify equipment operators of work area. 15. Be aware of surroundings at all times for the presence of wildlife. a. Do not approach stray animals b. Carry animal repellant/ use if situation arises. c. Use bug spray when needed. 7. Wear proper attire for weather conditions (sunscreen, protective clothing in

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
		sunlight or layer clothing in cold weather)/ drink plenty of fluids/ take regular breaks.
35. All activities	45. Slips/ Trips/ Falls 46. Hand injuries, cuts or lacerations during manual handling of materials 47. Foot injuries 48. Back injuries 49. Traffic 50. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 51. High Noise levels 52. Overhead hazards 53. Heat Stress/ Cold Stress 54. Eye Injuries	53. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 54. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 55. Wear Langan approved safety shoes 56. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 57. Wear high visibility clothing & vest / Use cones or signs to designate work area 58. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 59. Wear proper hearing protection 60. Wear hard hat / Avoid areas were overhead hazards exist. 61. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 62. Wear safety glasses
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date
Prepared by:		
Reviewed by:		

LANGAN

Job Safety Analysis (JSA)
Health and Safety

JSA Title: **Sub-slab soil gas temporary point installation and sampling**
JSA Number: **JSA037-01**

A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions. Prior to the start of any work "TAKE 5" and conduct a Last Minute Risk Assessment.

S – *Stop,* what has changed?
T – *Think* about the task
E – *Evaluate* potential hazards
P – *Plan* safe approach
S - *Start* task / *Stop* & regroup

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):				
☒ Safety Shoes	☒ Long Sleeves	☒ Safety Vest (Class 2)	☒ Hard Hat	☐ Hearing Protection
☒ Safety Glasses	☒ Safety Goggles	☐ Face Shield	☒ Nitrile Gloves	☐ PVC Gloves
☒ Leather Gloves	☐ Cut Resist. Gloves	☐ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☒ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☒ Traffic Cones/Signs	☐ Life Vest/Jacket	
☒ Other: Tyvek Sleeves				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
36. Transport equipment to work site	28. Back injuries 29. Slips/Trips/Falls 30. Traffic 31. Hand injuries	22. Use proper lifting techniques/ Use wheeled transport/ Get assistance when need with moving equipment/ Minimize distance from vehicle 23. Minimize distance from vehicle/ Have unobstructed pathway to vehicle and collection points/ Mark tripping hazards with spray paint, cones, or caution tape/ Observe good housekeeping procedures. 24. Wear proper PPE (High Visibility vest and clothing)/ Exercise caution (stay alert-stay alive) 25. Wear proper PPE (leather gloves)/ Keep finger and hands clear of pinch points.
37. Mark area for drilling	18. Slips/Trips/Falls	16. Minimize distance from vehicle/ Have unobstructed pathway to vehicle and collection points/ Mark tripping hazards with spray paint, cones, or caution tape/ Observe good housekeeping procedures
38. Drill sampling points with hammer drill	11. Eye injuries 12. Dust exposure 13. Hand injuries 14. Catch items (clothing) 15. Electric shock 16. Chemical atmosphere hazard (vapor) 17. Slips/Trips/Falls	9. Wear proper PPE (safety glasses) 10. Wear proper PPE (dust mask) 11. Wear proper PPE (leather gloves)/ Keep hands and fingers out of pinch points/ Avoid drill catching on ground and twisting wrist or hand/ Release drill grip if drill becomes caught/ Ensure drill is unplugged prior to inserting bit. 12. Tie up or tuck-in all loose clothing/ Maintain distance from drill 13. Inspect power cable for cuts or nicks before use/ Use GFCI outlet on power cord/ Do not use in wet conditions 14. Monitor air, vapors with Photo-ionization detector (PID)

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
		15. Minimize distance from vehicle/ Have unobstructed pathway to vehicle and collection points/ Mark tripping hazards with spray paint, cones, or caution tape/ Observe good housekeeping procedures
39. Measure vapor content and depth to bottom of hole	1. Chemical atmosphere hazard (vapors)	1. Monitor air, vapors with Photo-ionization detector (PID)/ Keep face away from opening of hole while collecting measurements
40. Set-up of shroud and sampling canister system	1. Hand injuries 2. Chemical atmosphere hazard (vapors) 3. Slips/Trips/Falls	1. Wear proper PPE (leather gloves, nitrile gloves)/ Keep fingers away from pinch points when installing pump/ Do not use open blades, use tubing cutter 2. Monitor air, vapors with Photo-ionization detector (PID)/ Keep face away from opening of hole while collecting measurements 3. Minimize distance from vehicle/ Have unobstructed pathway to vehicle and collection points/ Mark tripping hazards with spray paint, cones, or caution tape/ Observe good housekeeping procedures
41. Purge soil gas	1. Chemical atmosphere hazard (vapors)	1. Monitor air, vapors with Photo-ionization detector (PID)/ Keep face away from exhaust port of pump
42. Sample collection (opening and closing valves)	1. Hand injuries	1. Wear proper PPE (leather gloves)/ Keep fingers away from pinch points
43. Sealing sampling holes	1. Back injuries 2. Concrete dust 3. Eye injuries	1. Use proper lifting techniques for lifting of cement bags 2. Wear proper PPE (dust mask) 3. Wear proper PPE (safety glasses)
44. All activities	55. Slips/ Trips/ Falls 56. Hand injuries, cuts or lacerations during manual handling of materials 57. Foot injuries 58. Back injuries 59. Traffic 60. Wildlife: Stray animals, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 61. High Noise levels 62. Overhead hazards 63. Heat or cold injuries 64. Eye Injuries	63. Be aware of potential trip hazards/ Follow good housekeeping procedures/ Mark significant hazards 64. Inspect for jagged/sharp edges, and rough or slippery surfaces/ Keep fingers away from pinch points/ Wipe off greasy, wet, slippery or dirty objects before handling/ Wear leather/ cut-resistant gloves Wear proper PPE (Langan approved safety shoes) 65. Use proper lifting techniques/ Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift/ Obtain assistance when possible 66. Wear high visibility clothing & vest/ Use cones or signs to designate work area 67. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray animals/ Carry and use animal repellant when needed/ Use bug spray when needed 68. Wear hearing protection 69. Wear hard hat/ Avoid areas were overhead hazards exist. 70. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather)/ Drink plenty of fluids to avoid dehydration/ Takes breaks as necessary to avoid heat/cold stress 71. Wear safety glasses

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date
Prepared by:		
Reviewed by:		

LANGAN

Job Safety Analysis (JSA)
Health and Safety

JSA Title: Indoor Air Sampling
JSA Number: JSA007-01

A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions. Prior to the start of any work "TAKE 5" and conduct a Last Minute Risk Assessment.

S – *Stop,* what has changed?
T – *Think* about the task
E – *Evaluate* potential hazards
P – *Plan* safe approach
S - *Start* task / *Stop* & regroup

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):				
☒ Safety Shoes	☒ Long Sleeves	☒ Safety Vest (Class 2)	☒ Hard Hat	☒ Hearing Protection
☒ Safety Glasses	☐ Safety Goggles	☐ Face Shield	☒ Nitrile Gloves	☐ PVC Gloves
☒ Leather Gloves	☐ Cut Resist. Gloves	☐ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☐ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☒ Traffic Cones/Signs	☐ Life Vest/Jacket	
☒ Other: PID, Respiratory Protection (if necessary)				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
45. Building walkthrough and background contaminant removal	32. Slips / Trips/ Falls 33. Exposure to substances/vapors during removal	6. Be aware of potential trip hazards / Follow good housekeeping procedures / Mark significant below-grade hazards (i.e. holes, trenches) with safety cones or spray paint 7. Monitor indoor air concentrations with a PID / Wear proper PPE (nitrile gloves) / Wear proper respiratory protection if necessary
46. Transport equipment to work area	1. Back Strain 2. Slips/ Trips/ Falls 3. Traffic 4. Cuts/abrasions from equipment 5. Contusions from dropped equipment	1. Use proper lifting techniques / Use wheeled transport 2. Minimize distance to work area / Have unobstructed path to work area / Follow good housekeeping procedures 3. Wear proper PPE (high visibility vest or clothing) 4. Wear proper PPE (leather gloves, long sleeves) 5. Wear proper PPE (safety shoes)
47. Mark out areas for indoor air sampling	19. Slips/ Trips/ Falls	3. Be aware of potential trip hazards / Follow good housekeeping procedures / Mark significant below-grade hazards (i.e. holes, trenches) with safety cones or spray paint
48. Set-up canisters and begin indoor air sampling	18. Dropping crates or canisters 19. Pinch hazard	5. Exercise caution when moving crates and canisters / Use proper housekeeping of materials during sample events / Do not carry too many items at one time / Perform several trips, if necessary 6. Wear proper PPE (leather gloves)
49. Sample collection	1. Dropping crates or canisters 2. Pinched fingers from opening valves	1. Exercise caution when moving crates and canisters / Use proper housekeeping of materials during sample events / Do not carry too many items at one time / Perform several trips, if necessary 2. Wear proper PPE (leather gloves) / Keep fingers away from pinch points
50. Pack up equipment	1. Back strain	1. Use proper lifting techniques / Use wheeled transport

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
	2. Slips/ Trips/ Falls 3. Traffic	2. Be aware of potential trip hazards / Follow good housekeeping procedures / Minimize distance to vehicle 3. Wear proper PPE (safety vest)
51. All activities	65. Slips/ Trips/ Falls 66. Hand injuries, cuts or lacerations during manual handling of materials 67. Foot injuries 68. Back injuries 69. Traffic 70. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 71. High Noise levels 72. Overhead hazards 73. Heat Stress/ Cold Stress 74. Eye Injuries	72. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 73. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 74. Wear Langan approved safety shoes 75. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 76. Wear high visibility clothing & vest / Use cones or signs to designate work area 77. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 78. Wear hearing protection 79. Wear hard hat / Avoid areas were overhead hazards exist. 80. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 81. Wear safety glasses
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date
Prepared by:		
Reviewed by:		

LANGAN

Job Safety Analysis (JSA)
Health and Safety

JSA Title: **Hammer Drill**
JSA Number: **JSA049**

A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions. Prior to the start of any work "TAKE 5" and conduct a Last Minute Risk Assessment.

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T – ***Think*** *about the task*
E – ***Evaluate*** *potential hazards*
P – ***Plan*** *safe approach*
S - ***Start*** *task /* ***Stop*** *& regroup*

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):				
☒ Safety Shoes	☒ Long Sleeves	☒ Safety Vest (Class 2)	☒ Hard Hat	☒ Hearing Protection
☒ Safety Glasses	☐ Safety Goggles	☒ Face Shield	☒ Nitrile Gloves	☐ PVC Gloves
☒ Leather Gloves	☐ Cut Resist. Gloves	☐ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☐ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☒ Traffic Cones/Signs	☐ Life Vest/Jacket	
☐ Other:				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
52. Transport equipment to work area	34. Back Strain 35. Slips/ Trips/ Falls 36. Traffic 37. Cuts/abrasions from equipment 38. Contusions from dropped equipment	8. Use proper lifting techniques / Use wheeled transport 9. Minimize distance to work area / Have unobstructed path to work area / Follow good housekeeping procedures 10. Wear proper PPE (high visibility vest or clothing) 11. Wear proper PPE (leather gloves, long sleeves) 12. Wear proper PPE (safety shoes)
53. Electrical Connection	20. Inpsect electrical cord to drill 21. Inspect hammer drill 22. Inspect extension cord 23. Test GFCI	4. Check the plug, insure all connections are in place, check cord for frayed sections. If plug or cord are worn, do not use equipment until repaired 5. Inspect chuck for proper grasping and holding of bit, check that plastic housing is not cracked or missing pieces. Do not use if chuck doesn't work properly or housing is compromised. 6. Inspect extension cord, if worn or stripped pull from service and replace 7. Test GFCI, replace if GFCI fails
54. Drill Bit	1. Inspect drill bit	1. Replace if worn 2. Wear proper PPE (leather gloves) when installing and removing drill bit. 3. Ensure equipment is unplugged from electrical power when removing and installing drill bit.
55. Use of Hammer Drill	1. Hazards associated with using hammer drill, flying objects, heavy equipment, ground level hazards and dust 2. Slips/ Trips/ Falls 3. Hazards associated drilling into concrete slab	1. Maintain a safe distance from other site operations / Wear proper PPE (hard hat, safety glasses, safety shoes, safety vest, ear protection and leather gloves) 2. Be aware of potential trip hazards / Follow good housekeeping procedures / Mark extension chord pathway with safety cones 3. Do not push hammer drill during use.

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
56. All activities 4. All activities (cont'd)	75. Slips/ Trips/ Falls 76. Hand injuries, cuts or lacerations during manual handling of materials 77. Foot injuries 78. Back injuries 79. Traffic 80. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 81. High Noise levels 82. Overhead hazards 83. Heat Stress/ Cold Stress 84. Eye Injuries	82. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 83. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 84. Wear Langan approved safety shoes 85. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 86. Wear high visibility clothing & vest / Use cones or signs to designate work area 87. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 88. Wear hearing protection 89. Wear hard hat / Avoid areas were overhead hazards exist. 90. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 91. Wear safety glasses
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date
Prepared by:		
Reviewed by:		

LANGAN

Job Safety Analysis (JSA)
Health and Safety

JSA Title: Groundwater Sampling
JSA Number: JSA008-01

A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions. Prior to the start of any work "TAKE 5" and conduct a Last Minute Risk Assessment.

S – *Stop,* what has changed?
T – *Think* about the task
E – *Evaluate* potential hazards
P – *Plan* safe approach
S - *Start* task / *Stop* & regroup

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):				
☒ Safety Shoes	☒ Long Sleeves	☒ Safety Vest (Class 2)	☒ Hard Hat	☒ Hearing Protection
☒ Safety Glasses	☐ Safety Goggles	☐ Face Shield	☒ Nitrile Gloves	☐ PVC Gloves
☒ Leather Gloves	☐ Cut Resist. Gloves	☒ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☐ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☐ Traffic Cones/Signs	☐ Life Vest/Jacket	
☒ Other: Tyvek sleeves, Dermal Protection, PID				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
57. Transport equipment to work area	6. Back Strain 7. Slips/ Trips/ Falls 8. Traffic 9. Cuts/abrasions from equipment 10. Contusions from dropped equipment	6. Use proper lifting techniques / Use wheeled transport 7. Minimize distance to work area / Have unobstructed path to work area / Follow good housekeeping procedures 8. Wear proper PPE (high visibility vest or clothing) 9. Wear proper PPE (leather gloves, long sleeves) 10. Wear proper PPE (safety shoes)
58. Remove well cover	24. Scrape knuckles/hand 25. Strain wrist/bruise palm 26. Pinch fingers or hand	8. Wear proper PPE (leather gloves) 9. Using a hammer, tap the end of the wrench to loosen grip of bolts 10. Wear proper PPE (leather gloves)
59. Remove well cap and lock	20. Well can pops from pressure 21. Exposure to hazardous substances through inhalation or dermal exposure 22. Scrape knuckles/hand 23. Strain write/bruise palm	7. Remove cap slowly to relieve pressure / Do not place face over well when opening / Wear proper PPE (safety glasses) 8. Use direct air monitoring/reading instrument (i.e. PID) / Be familiar with and follow actions prescribed in the HASP / Wear proper PPE (nitrile gloves) 9. Wear proper PPE (leather gloves) 10. Using hammer, tap the end of the wrench to loosen grip
60. Measure head-space vapor levels	3. Exposure to hazardous substances through inhalation	3. Do not place face over well when collecting measurement
61. Remove dedicated tubing (if necessary)	4. Exposure to hazardous substances through inhalation or dermal exposure 5. Tubing swings around after removal	4. Wear proper PPE (nitrile gloves, Tyvek sleeves) 5. Wear proper PPE (safety glasses)
62. Set-up plastic sheeting for work site around the well	1. Lacerations when cutting plastic sheeting	1. Use scissors to cut plastic sheeting / Cut motions should always be away from body and body parts

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
63. Measure depth to water	1. Exposure to hazardous substances through inhalation or dermal exposure 2. Pinch fingers or hand in water level instrument	1. Wear proper PPE (nitrile gloves) 2. Wear proper PPE (leather gloves)
64. Calibrate monitoring equipment	1. Skin or eye contact with calibration chemicals 2. Pinch fingers or hand in monitoring equipment	1. Wear proper PPE (safety glasses, nitrile gloves) 2. Wear proper PPE (leather gloves) / Avoid pinch points
65. Install sampling pump in well	1. Hand injuries during installation of pump 2. Lacerations when cutting tubing 3. Back strain during installation of pump 4. Physical hazards associated with manual lifting of heavy equipment 5. Back strain from starting generator 6. Burns from hot exhaust from generator 7. Electrical shock from improper use of generator and pump 8. Contaminated water spray from loose connections	1. Wear proper PPE (leather gloves, nitrile gloves) 2. Use safety tubing cutter 3. Use proper lifting techniques 4. Use proper lifting techniques / Use wheeled transport for heavy equipment 5. Use arm when starting generator / Do not over-strain if generator does not start 6. Do not touch generator near exhaust / Use proper handle to carry / Allow generator to cool down before moving 7. Properly plug in pump to generator / Do not allow the pump or generator to contact water / Check for breaks in the cord 8. Check all tubing connections to ensure they are tight and secure

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
10. Purge water	1. Contact with potentially contaminated groundwater 2. Back strain from lifting buckets of water 3. Tripping potential on sample discharge lines and pump electric line	1. Wear proper PPE (safety glasses, nitrile gloves) 2. Use proper lifting techniques / Use wheeled transport 3. Organize discharge of electric line to keep out of way as much as possible / Mark potential tripping hazards with caution tape or safety cones
11. Sample water collection	1. Contact with potentially contaminated groundwater through dermal exposure 2. Contact with and burns from acid used for sample preservation 3. Tripping potential on sample discharge lines and pump electric line 4. Lacerations from broken sample bottles 5. Back strain when transporting coolers full of collected samples 6. Slips/ Trips/ Falls	1. Wear proper PPE (safety glasses, nitrile gloves) 2. Wear proper PPE (safety glasses, nitrile gloves) / Ensure sample bottle lids are secure before use and after sample collection 3. Organize line to keep out of the way as much as possible / Mark potential tripping hazards with caution tape or safety cones 4. Do not over-tighten bottle caps / Handle bottles safely to prevent breakage / Wrap glass bottles in bubble wrap, if possible 5. Use proper lifting techniques / Use wheeled transport / Seek assistance if coolers weight exceeds 50lbs. / Minimize distance to vehicle 6. Have unobstructed path to vehicle or collection point / Follow good housekeeping procedures / Do not lift/walk with coolers that are too heavy/difficult to lift
12. Remove pump and pack up equipment	1. Back strain when removing pump or lifting heavy equipment	1. Use proper lifting technique / Use wheeled transport for heavy equipment
13. Replace well cap and lock	1. Scrape fingers/hand 2. Strain wrist/bruise palm	1. Wear proper PPE (leather gloves) 2. Using hammer, tap the end of the well cap to tighten grip
14. Replace well cover	1. Scrape knuckles/hand 2. Strain write/bruise palm 3. Pinch fingers or hand	1. Wear proper PPE (leather gloves) 2. Using hammer, tap the end of the wrench to tighten the grip of the bolts 3. Wear proper PPE (leather gloves)
15. Transport drums to disposal staging location	1. Back, arm or shoulder strain from moving drums 2. Pinch hazard 3. Contact with potentially contaminated groundwater when moving improperly sealed drums 4. Slips/ Trips/ Falls when moving drum 5. Drop drum on feet/toes	1. Use drum cart for moving drums / Use proper lifting techniques / Obtain assistance, if needed 2. Wear proper PPE (leather gloves) 3. Wear proper PPE (nitrile gloves under leather gloves) / Properly seal drum to prevent leak 4. Ensure route to move drum to storage space is dry and free from obstructions 5. Wear proper PPE (safety shoes)
16. Place used PPE in designated disposal drum	1. Pressure build-up inside drum 2. Pinch hazard	1. Remove cap from bung hole in drum to relieve pressure 2. Wear proper PPE (leather gloves)
17. Decontaminate equipment	1. Splashing water/soap from decontamination 2. Contact with potentially contaminated groundwater through dermal exposure 3. Electrical shock from broken electric cords	1. Wear proper PPE (safety glasses) 2. Wear proper PPE (safety glasses, dermal protection) 3. Properly plug in pump to generator / Do not allow the pump or generator to contact water / Check for breaks in the cord
18. All activities	85. Slips/ Trips/ Falls 86. Hand injuries, cuts or lacerations during manual handling of materials 87. Foot injuries 88. Back injuries 89. Traffic 90. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.)	92. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 93. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 94. Wear Langan approved safety shoes

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
	91. High Noise levels 92. Overhead hazards 93. Heat Stress/ Cold Stress 94. Eye Injuries	95. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 96. Wear high visibility clothing & vest / Use cones or signs to designate work area 97. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 98. Wear hearing protection 99. Wear hard hat / Avoid areas were overhead hazards exist. 100. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 101. Wear safety glasses
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date
Prepared by:		
Reviewed by:		

LANGAN	Job Safety Analysis (JSA) Health and Safety
JSA Title: Well Installation **JSA Number: JSA019-01**	 **S – *Stop,* what has changed?** **T – *Think* about the task** **E – *Evaluate* potential hazards** **P – *Plan* safe approach** **S - *Start* task / *Stop* & regroup**
A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions. Prior to the start of any work "TAKE 5" and conduct a Last Minute Risk Assessment.	

PERSONAL PROTECTIVE EQUIPMENT REQUIRED:				
☒ Safety Shoes	☒ Long Sleeves	☒ Safety Vest (Class 2)	☒ Hard Hat	☒ Hearing Protection
☒ Safety Glasses	☐ Safety Goggles	☐ Face Shield	☒ Nitrile Gloves	☐ PVC Gloves
☒ Leather Gloves	☐ Cut Resist. Gloves	☐ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☐ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☐ Traffic Cones/Signs	☐ Life Vest/Jacket	
☒ Other: PID, Tyvek sleeves				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
66. Move equipment to work site	39. Back strain when lifting equipment 40. Slips/ Trips/ Falls while moving equipment 41. Traffic (if applicable) 42. Pinched fingers or running over toes during geoprobe set-up 43. Overturn drilling rig while transporting to loading dock on flat-bed tow truck	26. Use proper lifting technique (use legs for bending and lifting and not the back)/ Use wheeled transport for heavy equipment / Get assistance when handling loads greater than 50 lbs. / Minimize distance to vehicle 27. Use proper lifting technique (use legs for bending and lifting and not the back) / Use wheeled transport for heavy equipment / Get assistance when handling loads greater than 50 lbs. / Minimize distance to vehicle / Have unobstructed path to vehicle or collection point / Do not lift/walk with boxes that are heavy/difficult to lift 28. Wear high visibility safety vests or clothing / Exercise caution 29. Wear proper PPE (cut-resistant gloves) / Stay alert, be aware of geoprobe rig at all times 30. Drill rig should be parked in center of flat-bed tow truck / Emergency brake shall be used at all times during transport on the flat-bed truck/ All unnecessary personnel should stay away from the flat-bed truck during moving activities
67. Calibration of monitoring equipment	27. Skin or eye contact with calibration chemicals 28. Pinch fingers in monitoring equipment	17. Wear proper PPE (safety glasses/ goggles) 18. Wear proper PPE (leather gloves)
19. Set-up geoprobe rig	24. Geoprobe rig movement	16. All field personnel should stay clear of the geoprobe rig while moving / Use a spotter when backing up the geoprobe
20. Advance geoprobe rods below ground surface to desired depth	6. Underground utilities 7. High noise levels	9. Clean all subsurface soil borings to a minimum of 5 feet below grade 10. Wear proper PPE (hearing protection)

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
21. Remove and open acetate liner 5. Remove and open acetate liner (cont'd)	95. Pinched fingers while removing macrocore 96. Cuts/lacerations when cutting acetate liner open 97. Exposure to hazardous vapors 98. Skin contact with contaminated soil	5. Wear proper PPE (nitrile gloves, cut-resistant or leather gloves 6. Wear proper PPE (cut-resistant or leather gloves) 7. Do not place face over acetate liner when opening / Monitor hazardous vapors in air with PID / Upgrade PPE as necessary based on levels contained in the Health and Safety Plan 8. Wear proper PPE (nitrile gloves)
6. Remove excess soil from acetate liner and place in 55-gallon drum (IF NOT PERFORMED BY LANGAN, REMOVE!)	5. Cuts/lacerations from acetate liner 6. Pinched fingers/hand while opening/closing drum 7. Skin contact with contaminated soil 8. Soil debris in eyes	5. Wear proper PPE (cut-resistant or leather gloves) 6. Wear proper PPE (cut-resistant or leather gloves) 7. Wear proper PPE (nitrile gloves) 8. Wear proper PPE (safety glasses)
7. Attach hollow-stem augers to the geoprobe rig; Advance augers and attach additional augers until desired depth is reached	1. Strain wrist/bruise palm 2. Pinched fingers 3. Back Strain 4. Clothing entanglement 5. Carbon monoxide poisoning 6. Bruise toes/foot 7. High noise levels 8. Skin contact with contaminated soil	1. Wear proper PPE (cut-resistant or leather gloves) 2. Wear proper PPE (cut-resistant or leather gloves) 3. Use proper lifting techniques 4. Wear proper work attire(no loose clothing/strings) 5. Properly ventilate work area 6. Wear proper PPE (safety shoes) 7. Wear proper PPE (hearing protection) 8. Wear proper PPE (Tyvek sleeves, nitrile gloves)
8. Install monitoring well	1. Pinched fingers 2. Lacerations/abrasions 3. Back Strain	1. Wear proper PPE (cut-resistant or leather gloves) 2. Wear proper PPE (cut-resistant or leather gloves) 3. Use proper lifting techniques
9. Tremie-grout annulus space above bentonite seal	1. Back strain 2. Pinched fingers	1. Use proper lifting techniques 2. Wear proper PPE (cut-resistant or leather gloves)
10. Install flush-mount monitoring well pad	1. Splashed concrete 2. Pinched fingers 3. Cuts/lacerations	1. Wear proper PPE (safety glasses) 2. Wear proper PPE (cut-resistant or leather gloves) 3. Wear proper PPE (cut-resistant or leather gloves)
11. Decontaminate equipment	1. Splashing water/soap 2. Contact with potentially contaminated groundwater/soil through dermal exposure 3. Electrical shock from broken electric cords	1. Wear proper PPE (safety glasses) 2. Wear proper PPE (safety glasses, dermal protection) 3. Properly plug in pump to generator / Do not allow the pump or generator to contact water / Check for breaks in the cord
12. Transport drums to central staging location (IF NOT PERFORMED BY LANGAN, REMOVE!)	7. Back, arm or shoulder strain from moving drums 8. Pinch fingers/hand in drum cart when moving drums 9. Pinch fingers/hand when operating lift-gate on vehicle 10. Contact with potentially contaminated groundwater when moving improperly sealed drums 11. Slips when moving drums 12. Drop drum on feet/toes	102. Use drum cart for moving drums / Use proper lifting techniques / Do not lift heavy loads without assistance 103. Wear proper PPE (cut-resistant or leather gloves) 104. Wear proper PPE (cut-resistant or leather gloves) 105. Wear proper PPE (nitrile gloves underneath work gloves) 106. Follow good housekeeping procedures / Ensure route to move drum and storage space is free from obstructions 107. Wear proper PPE (safety shoes) / Work in a safe manner to prevent dropped drum

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
13. All activities 13. All activities (cont'd)	11. Slips/ Trips/ Falls 12. Hand injuries, cuts or lacerations during manual handling of materials 13. Foot injuries 14. Back injuries 15. Traffic 16. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 17. High Noise levels 18. Overhead hazards 19. Heat Stress/ Cold Stress 20. Eye Injuries	11. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 12. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 13. Wear Langan approved safety shoes 14. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 15. Wear high visibility clothing & vest / Use cones or signs to designate work area 16. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 17. Wear hearing protection 18. Wear hard hat / Avoid areas were overhead hazards exist. 19. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 20. Wear safety glasses
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date
Prepared by:		
Reviewed by:		

LANGAN

Job Safety Analysis (JSA)
Health and Safety

JSA Title: **Monitoring Well Development**
JSA Number: **JSA026-01**

A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions. Prior to the start of any work "TAKE 5" and conduct a Last Minute Risk Assessment.

S – *Stop*, what has changed?
T – *Think* about the task
E – *Evaluate* potential hazards
P – *Plan* safe approach
S - *Start* task / *Stop* & regroup

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):				
☒ Safety Shoes	☒ Long Sleeves	☒ Safety Vest (Class 2)	☒ Hard Hat	☐ Hearing Protection
☒ Safety Glasses	☐ Safety Goggles	☒ Face Shield	☒ Nitrile Gloves	☐ PVC Gloves
☒ Leather Gloves	☒ Cut Resist. Gloves	☐ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☐ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☐ Traffic Cones/Signs	☐ Life Vest/Jacket	
☒ Other: Tyvek Sleeves				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
68. Transport equipment to work area	44. Back Strains 45. Slips/Trips/Falls 46. Traffic 47. Cuts/Abrasions/Contusions from equipment	31. Use proper lifting techniques/ Use wheeled transport/ use buddy system when lifting equipment. 32. Minimize distance from work area/ unobstructed path to collection points and vehicle/ Follow good housekeeping procedures. 33. Wear high-visibility vest or clothing/Exercise caution/ Use traffic cones or signage if needed. 34. Wear proper PPE (leather gloves, long sleeves, Langan approved safety shoes).
69. Measure depth of water	29. Exposure to hazardous substances 30. Pinched fingers	22. Wear proper PPE (Nitrile gloves, Safety glasses/Face shield). 23. Wear proper PPE (cut-resistant gloves).
70. Install Tremie pipe in the monitoring well and connect to water source.	25. Hand injuries during installation (pinched fingers/hands). 26. Back strain from holding Tremie pipe. 27. High pressure water spray.	17. Wear proper PPE (Nitrile gloves/cut-resistant gloves). 18. Use proper lifting techniques/ Use two personnel when lowering pump greater than 80 feet. 19. Ensure all hose connections are tight and secure/ Use proper PPE (face shield and safety glasses).
71. Install pump in to well a. Connect pump to sample tubing. b. Lower pump to desired depth in well. c. Connect sample tubing to flow cell d. Connect pump to power source	8. Hand injuries during pump installation and sample tubing cutting. 9. Back strain 10. Electric shock 11. Exhaust gases from generator 12. Burns from hot equipment	11. Wear proper PPE when installing pump and cutting sample tubing (Nitrile and cut-resistant gloves)/ Use tubing cutter. 12. Proper lifting techniques/ Two personnel when installing pump at depths greater than 80 feet/ Use buddy when lifting heavy loads (pump, generator)/Use wheeled transport. 13. Ensure equipment is (LO/TO: locked out/tagged out) prior to preforming any electrical connections/ Inspect wires for frays or cuts/Ensure generator is properly grounded prior to starting.

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
(generator) e. Turn on power source (generator)		14. Position generator so that exhaust is flowing away from work area. 15. Do not touch exhaust or any hot part of generator/ Allow equipment time to cool down prior to carrying/ Use proper PPE (long sleeves, leather gloves)
72. Develop monitoring well a. Jet water into well using Tremie pipe b. Turn pump on and adjust to desired flow rate. c. Surge pump up and down well to remove sediment from screen d. Containerize all purge water from well.	99. Hand injuries 100. Face injuries 101. Contaminated spray from water	108. Wear proper PPE (cut-resistant gloves and nitrile gloves). 109. Wear proper PPE (face shield and safety glasses)/do not stand over well opening. 110. Wear proper PPE (Face shield and safety goggles)/Tyvek over garments/ Ensure all connections are secure and tight/ Tubing outlet is contained in an overflow container.
73. Drum staging area.	1. Back, Arm, and shoulder strain. 2. Pinch points 3. Cross contamination 4. Slip/Trips/Falls	1. Use proper lifting techniques/ Use drum carts when moving drums/ use buddy system for moving of drums if needed/Move drums shortest distance needed. 2. Keep fingers and feet away from pinch points/ Use proper PPE (cut-resistant gloves, Langan approved safety shoes) 3. Use proper PPE (Nitrile gloves, Tyvek sleeves) 4. Ensure pathway is clear prior to moving equipment/ Mark all hazards/ Use additional person as a spotter if needed.
74. Equipment pack-up	1. Back Strains 2. Slips/Trips/Falls 3. Traffic 4. Cuts/Abrasions/Contusions from equipment.	1. Use proper lifting techniques/ Use wheeled transport/ use buddy system when lifting equipment. 2. Minimize distance from work area/ Unobstructed path to collection points and vehicle/ Follow good housekeeping procedures. 3. Wear high-visibility vest or clothing/Exercise caution/ Use traffic cones or signage if needed. 111. Wear proper PPE (leather gloves, long sleeves, Langan approved safety shoes).
75. All activities	1. Slips/ Trips/ Falls 2. Hand injuries, cuts or lacerations during manual handling of materials 3. Foot injuries 102. Back injuries 103. Traffic 104. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 105. High Noise levels 106. Overhead hazards 107. Heat Stress/ Cold Stress 108. Eye Injuries	1. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 2. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 3. Wear Langan approved safety shoes 4. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 5. Wear high visibility clothing & vest / Use cones or signs to designate work area 6. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 7. Wear hearing protection 8. Wear hard hat / Avoid areas were overhead hazards exist. 9. Wear proper attire for weather conditions (sunscreen or protective clothing

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
		in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 10. Wear safety glasses.
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date
Prepared by:		
Reviewed by:		

LANGAN

Job Safety Analysis (JSA)
Health and Safety

JSA Title: **Groundwater/Product Purging/Sampling with Bailer**
JSA Number: **JSA053**

A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions. Prior to the start of any work "TAKE 5" and conduct a Last Minute Risk Assessment.

S – ***Stop,*** *what has changed?*
T – ***Think*** *about the task*
E – ***Evaluate*** *potential hazards*
P – ***Plan*** *safe approach*
S - ***Start*** *task /* ***Stop*** *& regroup*

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):				
☒ Safety Shoes	☒ Long Sleeves	☒ Safety Vest (Class 2)	☒ Hard Hat	☒ Hearing Protection
☒ Safety Glasses	☒ Safety Goggles	☒ Face Shield	☒ Nitrile Gloves	☒ PVC Gloves
☒ Leather Gloves	☐ Cut Resist. Gloves	☐ Fall Protection	☒ Fire Resistant Clothing	☐ Rubber Boots
☐ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☒ Traffic Cones/Signs	☐ Life Vest/Jacket	
☒ Other: Tyvek sleeves, Dermal Protection, PID, absorbent pads				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
76. Transport equipment to work area	11. Back Strain 12. Slips/ Trips/ Falls 13. Traffic 14. Cuts/abrasions from equipment 15. Contusions from dropped equipment	11. Use proper lifting techniques / Use wheeled transport 12. Minimize distance to work area / Have unobstructed path to work area / Follow good housekeeping procedures 13. Wear proper PPE (high visibility vest or clothing) 14. Wear proper PPE (leather gloves, long sleeves) 15. Wear proper PPE (safety shoes)
77. Remove well cover	31. Scrape knuckles/hand 32. Strain wrist/bruise plan 33. Pinch fingers or hand	11. Wear proper PPE (leather gloves) 12. Using a hammer, tap the end of the wrench to loosen grip of bolts 13. Wear proper PPE (leather gloves)
78. Remove well cap and lock	28. Well can pops from pressure 29. Exposure to hazardous substances through inhalation or dermal exposure 30. Scrape knuckles/hand 31. Pinch points 32. Strain write/bruise palm	11. Remove cap slowly to relieve pressure / Do not place face over well when opening / Wear proper PPE (safety glasses, face shield, hand protection) 12. Use direct air monitoring/reading instrument (i.e. PID) / Be familiar with and follow actions prescribed in the HASP / Wear proper PPE (nitrile gloves) 13. Wear proper PPE (leather gloves) 14. Using hammer, tap the end of the wrench to loosen grip
79. Measure head-space vapor levels	4. Exposure to hazardous substances through inhalation	4. Do not place face over well when collecting measurement
80. Set-up plastic sheeting/absorbent pads	2. Lacerations when cutting plastic sheeting/absorbent pads	2. Use scissors to cut plastic sheeting/absorbent pads / Cut motions should always be away from body and body parts

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
for work site around the well		
81. Lower Bailer sleeve into well	7. Repetitive motion injury (pulled arm/back muscles) 8. Dehydration	7. Take breaks while lowering bailer into well/ Use a mechanical device to lower bailer into well/ Rotate employees (take turns conducting the manual labor portion) 8. Take breaks and drink water.

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
7. Purge/Sample water/product collection	1. Contact with potentially contaminated groundwater or product through dermal exposure 2. Contact with and burns from acid used for sample preservation 9. Tripping potential on sampling lanyard 10. Lacerations from broken sample bottles 11. Back strain when transporting coolers full of collected samples 12. Slips/ Trips/ Falls	1. Wear proper PPE (safety glasses, nitrile gloves, safety shield, Tyvek) 2. Ensure sample bottle lids are secure before use and after sample collection 3. Organize lanyard to keep out of the way as much as possible / Mark potential tripping hazards with caution tape or safety cones 9. Do not over-tighten bottle caps / Handle bottles safely to prevent breakage / Wrap glass bottles in bubble wrap, if possible 10. Use proper lifting techniques / Use wheeled transport / Seek assistance if coolers weight exceeds 50lbs. / Minimize distance to vehicle 11. Have unobstructed path to vehicle or collection point / Follow good housekeeping procedures / Do not lift/walk with coolers that are too heavy/difficult to lift
8. Retrieval of bailer	9. Repetitive motion injury (pulled arm/back muscles) 10. Dehydration	9. Take breaks while retrieving bailer out of the well/ Use a mechanical device to raise bailer out of well/ Rotate employees (take turns conducting the manual labor portion) 10. Take breaks and drink water.
9. Pack-up equipment	2. Back strain when removing or lifting heavy equipment	2. Use proper lifting technique / Use wheeled transport for heavy equipment
10. Replace well cap and lock	3. Scrape fingers/hand 4. Strain wrist/bruise palm	3. Wear proper PPE (leather gloves) 4. Using hammer, tap the end of the well cap to tighten grip
11. Replace well cover	4. Scrape knuckles/hand 5. Strain write/bruise palm 6. Pinch fingers or hand	4. Wear proper PPE (leather gloves) 5. Using hammer, tap the end of the wrench to tighten the grip of the bolts 6. Wear proper PPE (leather gloves)
12. Place used PPE in designated disposal drum	3. Pressure build-up inside drum 4. Pinch hazard	3. Remove cap from bung hole in drum to relieve pressure 4. Wear proper PPE (leather gloves) 5. Product drums may require additional spill protection/electrical grounding, check local regulations
13. Decontaminate equipment	4. Splashing water/soap from decontamination 5. Contact with potentially contaminated groundwater through dermal exposure	4. Wear proper PPE (safety glasses) 5. Wear proper PPE (safety glasses, dermal protection)

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
14. All activities	109. Slips/ Trips/ Falls 110. Hand injuries, cuts or lacerations during manual handling of materials 111. Foot injuries 112. Back injuries 113. Traffic 114. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 115. High Noise levels 116. Overhead hazards 117. Heat Stress/ Cold Stress 118. Eye Injuries	112. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 113. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 114. Wear Langan approved safety shoes 115. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 116. Wear high visibility clothing & vest / Use cones or signs to designate work area 117. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 118. Wear hearing protection 119. Wear hard hat / Avoid areas were overhead hazards exist. 120. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 121. Wear safety glasses
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	**Sign Name**	**Date**
Prepared by:		
Reviewed by:		

LANGAN

Job Safety Analysis (JSA)
Health and Safety

JSA Title: Geotechnical Drilling
JSA Number: JSA014-01

A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions. Prior to the start of any work "TAKE 5" and conduct a Last Minute Risk Assessment.

S – ***Stop,*** *what has changed?*
T – ***Think*** *about the task*
E – ***Evaluate*** *potential hazards*
P – ***Plan*** *safe approach*
S - ***Start*** *task / **Stop** & regroup*

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):				
☒ Safety Shoes	☒ Long Sleeves	☒ Safety Vest (Class 2)	☒ Hard Hat	☒ Hearing Protection
☒ Safety Glasses	☐ Safety Goggles	☒ Face Shield	☒ Nitrile Gloves	☐ PVC Gloves
☒ Leather Gloves	☐ Cut Resist. Gloves	☐ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☐ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☐ Traffic Cones/Signs	☐ Life Vest/Jacket	
☒ Other: NomeX (as needed)				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
82. Transport equipment to work area	48. Back Strain 49. Slips/ Trips/ Falls 50. Traffic 51. Cuts/abrasions from equipment 52. Contusions from dropped equipment	13. Use proper lifting techniques / Use wheeled transport 14. Minimize distance to work area / Have unobstructed path to work area / Follow good housekeeping procedures 15. Wear proper PPE (high visibility vest or clothing) 16. Wear proper PPE (leather gloves, long sleeves) 17. Wear proper PPE (safety shoes)
83. Set-up HSA/SPT rig	34. Slips/ Trips/ Falls 35. Pinch Hazards 36. High noise levels 37. Clothing entanglement 38. Electrocution/falling equipment and debris from raising HSA/SPT rig mast 39. Carbon monoxide poisoning 40. HSA/SPT rig roll-over 41. HSA/SPT rig movement	14. Be aware of potential trip hazards / Follow good housekeeping procedures / Mark significant below-grade hazards (i.e. holes, trenches) with safety cones or spray paint 15. Wear proper PPE (leather gloves) 16. Wear proper PPE (hearing protection) 17. Wear proper attire for HSA/SPT rig (no loose clothing, strings, etc.) 18. Wear proper PPE (hard hats) / Be aware of locations at all times / Look up, down and around before raising mast / Check HSA/SPT drill rig mast for loose objects/debris before raising 19. Stand upwind of rig engine 20. Do not move rig with mast raised / Set stabilizers prior to raising mast / Inspect work area / If area appears unstable, the boring locations should be moved. 21. All field personnel should stay clear of rig while moving / Use a spotter when backing up the rig
84. Advance HSA/SPT rods, augers and casing below ground surface	33. Strain wrist/bruise palm 34. Pinched fingers 35. Back strain	15. Wear proper PPE (leather gloves) / Use proper technique for preparing rods / Use second person, if necessary 16. Wear proper PPE (leather gloves)

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
85. Advance HSA/SPT rods, augers and casing below ground surface (cont'd)	36. Clothing entanglement 37. Carbon monoxide poisoning 38. Bruised/Broken toes/feet 39. High noise levels	17. Use proper lifting techniques / Obtain assistance if needed 18. Wear proper attire for HSA/SPT rig (no loose clothing, strings, etc.) 19. Stand upwind of the rig 20. Wear proper PPE (safety shoes) 21. Wear proper PPE (hearing protection)
86. Remove and open split spoon	13. Pinched fingers 14. Cuts/lacerations 15. Skin contact with contaminated soil and groundwater	1. Wear proper PPE (nitrile and leather gloves) 2. Wear proper PPE (leather gloves) 3. Wear proper PPE (nitrile gloves, safety glasses)
87. Repeat steps 3 and 4 until desired depth is reached	1. See steps 3 and 4	1. See steps 3 and 4
88. Remove HSA/SPT rods, augers and casing and place in storage rack	1. Clothing entanglement 2. Back strain 3. Pinched fingers 4. Carbon monoxide poisoning 5. High noise levels	1. Wear proper attire for HSA/SPT rig (no loose clothing, strings, etc.) 2. Use proper lifting techniques / Obtain assistance if needed 3. Wear proper PPE (leather gloves) 4. Stand upwind of rig engine 5. Wear proper PPE (hearing protection)
89. Tremie-grout borehole with a cement-bentonite grout mixture	1. Splash cement/bentonite grout on face/eyes 2. Back strain 3. Pinched fingers	1. Wear proper PPE (safety glasses) 2. Use proper lifting techniques / Obtain assistance if needed 3. Wear proper PPE (nitrile gloves, leather gloves)
90. Decontaminate equipment	1. Contact with potentially impacted material 2. Contact with sharp pieces of equipment	1. Wear proper PPE (safety glasses, nitrile gloves) 2. Wear proper PPE (leather gloves)
91. Patch soil boring location to return to pre-existing conditions (i.e. concrete, asphalt, grass)	1. Cuts/lacerations 2. Splashed concrete on face/eyes 3. Hammer fingers/hands when patching asphalt	1. Wear proper PPE (leather gloves) / Use scissors for cutting 2. Use proper PPE (safety glasses) 3. Be aware of hands/fingers during hammering / Wear proper PPE (leather gloves)
92. All activities	119. Slips/ Trips/ Falls 120. Hand injuries, cuts or lacerations during manual handling of materials 121. Foot injuries 122. Back injuries 123. Traffic 124. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 125. High Noise levels 126. Overhead hazards 127. Heat Stress/ Cold Stress 128. Eye Injuries	122. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 123. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 124. Wear Langan approved safety shoes 125. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 126. Wear high visibility clothing & vest / Use cones or signs to designate work area 127. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 128. Wear hearing protection 129. Wear hard hat / Avoid areas were overhead hazards exist.

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
		130. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 131. Wear safety glasses
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date
Prepared by:		
Reviewed by:		

LANGAN

Job Safety Analysis (JSA)
Health and Safety

JSA Title: **Test Pits**
JSA Number: **JSA016-01**

A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions. Prior to the start of any work "TAKE 5" and conduct a Last Minute Risk Assessment.

S – ***Stop,*** *what has changed?*
T – ***Think*** *about the task*
E – ***Evaluate*** *potential hazards*
P – ***Plan*** *safe approach*
S - ***Start*** *task /* ***Stop*** *& regroup*

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):				
☒ Safety Shoes	☒ Long Sleeves	☒ Safety Vest (Class 2)	☒ Hard Hat	☒ Hearing Protection
☒ Safety Glasses	☐ Safety Goggles	☐ Face Shield	☐ Nitrile Gloves	☐ PVC Gloves
☒ Leather Gloves	☐ Cut Resist. Gloves	☐ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☐ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☐ Traffic Cones/Signs	☐ Life Vest/Jacket	
☐ Other:				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
93. Transport equipment to work area	53. Back Strain 54. Slips/ Trips/ Falls 55. Traffic 56. Cuts/abrasions from equipment 57. Contusions from dropped equipment	18. Use proper lifting techniques / Use wheeled transport 19. Minimize distance to work area / Have unobstructed path to work area / Follow good housekeeping procedures 20. Wear proper PPE (high visibility vest or clothing) 21. Wear proper PPE (leather gloves, long sleeves) 22. Wear proper PPE (safety shoes)
94. Digging Test Pit	42. Back Strain 43. Unstable walls of excavation	22. Observe proper digging technique. Ensure spoil pile and equipment are at least 2 feet from edge of excavation. 23. Excavate test pit in a stepped manor.
95. All activities	129. Slips/ Trips/ Falls 130. Hand injuries, cuts or lacerations during manual handling of materials 131. Foot injuries 132. Back injuries 133. Traffic 134. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.) 135. High Noise levels 136. Overhead hazards 137. Heat Stress/ Cold Stress 138. Eye Injuries	132. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 133. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 134. Wear Langan approved safety shoes 135. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 136. Wear high visibility clothing & vest / Use cones or signs to designate work area 137. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
3. All activities (cont'd)		138. Wear hearing protection 139. Wear hard hat / Avoid areas were overhead hazards exist. 140. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 141. Wear safety glasses
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date
Prepared by:		
Reviewed by:		

LANGAN

Job Safety Analysis (JSA)
Health and Safety

JSA Title: Groundwater Sampling
JSA Number: JSA008-01

A Job Safety Analysis (JSA) must identify all job steps required to complete the task, the potential hazards employees could be exposed to while performing the job step and the preventative/corrective actions required to reduce/mitigate the identified potential hazards. Employees must certify that they have either prepared the JSA or have reviewed the JSA and are aware of the potential hazards associated with this task and will follow the provided preventive/corrective actions. Prior to the start of any work "TAKE 5" and conduct a Last Minute Risk Assessment.

S – *Stop,* what has changed?
T – *Think* about the task
E – *Evaluate* potential hazards
P – *Plan* safe approach
S - *Start* task / *Stop* & regroup

PERSONAL PROTECTIVE EQUIPMENT (Required or to be worn as needed):				
☒ Safety Shoes	☒ Long Sleeves	☒ Safety Vest (Class 2)	☒ Hard Hat	☒ Hearing Protection
☒ Safety Glasses	☐ Safety Goggles	☐ Face Shield	☒ Nitrile Gloves	☐ PVC Gloves
☒ Leather Gloves	☐ Cut Resist. Gloves	☒ Fall Protection	☐ Fire Resistant Clothing	☐ Rubber Boots
☐ Insect/Animal Repellent	☐ Ivy Blocker/Cleaner	☐ Traffic Cones/Signs	☐ Life Vest/Jacket	
☒ Other: Tyvek sleeves, Dermal Protection, PID				

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
96. Transport equipment to work area	16. Back Strain 17. Slips/ Trips/ Falls 18. Traffic 19. Cuts/abrasions from equipment 20. Contusions from dropped equipment	16. Use proper lifting techniques / Use wheeled transport 17. Minimize distance to work area / Have unobstructed path to work area / Follow good housekeeping procedures 18. Wear proper PPE (high visibility vest or clothing) 19. Wear proper PPE (leather gloves, long sleeves) 20. Wear proper PPE (safety shoes)
97. Remove well cover	44. Scrape knuckles/hand 45. Strain wrist/bruise palm 46. Pinch fingers or hand	24. Wear proper PPE (leather gloves) 25. Using a hammer, tap the end of the wrench to loosen grip of bolts 26. Wear proper PPE (leather gloves)
98. Remove well cap and lock	40. Well can pops from pressure 41. Exposure to hazardous substances through inhalation or dermal exposure 42. Scrape knuckles/hand 43. Strain write/bruise palm	22. Remove cap slowly to relieve pressure / Do not place face over well when opening / Wear proper PPE (safety glasses) 23. Use direct air monitoring/reading instrument (i.e. PID) / Be familiar with and follow actions prescribed in the HASP / Wear proper PPE (nitrile gloves) 24. Wear proper PPE (leather gloves) 25. Using hammer, tap the end of the wrench to loosen grip
99. Measure head-space vapor levels	5. Exposure to hazardous substances through inhalation	5. Do not place face over well when collecting measurement
100. Remove dedicated tubing (if necessary)	6. Exposure to hazardous substances through inhalation or dermal exposure 7. Tubing swings around after removal	6. Wear proper PPE (nitrile gloves, Tyvek sleeves) 7. Wear proper PPE (safety glasses)
101. Set-up plastic sheeting for work site around the well	3. Lacerations when cutting plastic sheeting	3. Use scissors to cut plastic sheeting / Cut motions should always be away from body and body parts

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
102. Measure depth to water	3. Exposure to hazardous substances through inhalation or dermal exposure 4. Pinch fingers or hand in water level instrument	3. Wear proper PPE (nitrile gloves) 4. Wear proper PPE (leather gloves)
103. Calibrate monitoring equipment	3. Skin or eye contact with calibration chemicals 4. Pinch fingers or hand in monitoring equipment	3. Wear proper PPE (safety glasses, nitrile gloves) 4. Wear proper PPE (leather gloves) / Avoid pinch points
104. Install sampling pump in well	11. Hand injuries during installation of pump 12. Lacerations when cutting tubing 13. Back strain during installation of pump 14. Physical hazards associated with manual lifting of heavy equipment 15. Back strain from starting generator 16. Burns from hot exhaust from generator 17. Electrical shock from improper use of generator and pump 18. Contaminated water spray from loose connections	11. Wear proper PPE (leather gloves, nitrile gloves) 12. Use safety tubing cutter 13. Use proper lifting techniques 14. Use proper lifting techniques / Use wheeled transport for heavy equipment 15. Use arm when starting generator / Do not over-strain if generator does not start 16. Do not touch generator near exhaust / Use proper handle to carry / Allow generator to cool down before moving 17. Properly plug in pump to generator / Do not allow the pump or generator to contact water / Check for breaks in the cord 18. Check all tubing connections to ensure they are tight and secure

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
10. Purge water	4. Contact with potentially contaminated groundwater 5. Back strain from lifting buckets of water 6. Tripping potential on sample discharge lines and pump electric line	4. Wear proper PPE (safety glasses, nitrile gloves) 5. Use proper lifting techniques / Use wheeled transport 6. Organize discharge of electric line to keep out of way as much as possible / Mark potential tripping hazards with caution tape or safety cones
11. Sample water collection	12. Contact with potentially contaminated groundwater through dermal exposure 13. Contact with and burns from acid used for sample preservation 14. Tripping potential on sample discharge lines and pump electric line 15. Lacerations from broken sample bottles 16. Back strain when transporting coolers full of collected samples 17. Slips/ Trips/ Falls	13. Wear proper PPE (safety glasses, nitrile gloves) 14. Wear proper PPE (safety glasses, nitrile gloves) / Ensure sample bottle lids are secure before use and after sample collection 15. Organize line to keep out of the way as much as possible / Mark potential tripping hazards with caution tape or safety cones 16. Do not over-tighten bottle caps / Handle bottles safely to prevent breakage / Wrap glass bottles in bubble wrap, if possible 17. Use proper lifting techniques / Use wheeled transport / Seek assistance if coolers weight exceeds 50lbs. / Minimize distance to vehicle 18. Have unobstructed path to vehicle or collection point / Follow good housekeeping procedures / Do not lift/walk with coolers that are too heavy/difficult to lift
12. Remove pump and pack up equipment	3. Back strain when removing pump or lifting heavy equipment	3. Use proper lifting technique / Use wheeled transport for heavy equipment
13. Replace well cap and lock	5. Scrape fingers/hand 6. Strain wrist/bruise palm	5. Wear proper PPE (leather gloves) 6. Using hammer, tap the end of the well cap to tighten grip
14. Replace well cover	7. Scrape knuckles/hand 8. Strain write/bruise palm 9. Pinch fingers or hand	7. Wear proper PPE (leather gloves) 8. Using hammer, tap the end of the wrench to tighten the grip of the bolts 9. Wear proper PPE (leather gloves)
15. Transport drums to disposal staging location	6. Back, arm or shoulder strain from moving drums 7. Pinch hazard 8. Contact with potentially contaminated groundwater when moving improperly sealed drums 9. Slips/ Trips/ Falls when moving drum 10. Drop drum on feet/toes	6. Use drum cart for moving drums / Use proper lifting techniques / Obtain assistance, if needed 7. Wear proper PPE (leather gloves) 8. Wear proper PPE (nitrile gloves under leather gloves) / Properly seal drum to prevent leak 9. Ensure route to move drum to storage space is dry and free from obstructions 10. Wear proper PPE (safety shoes)
16. Place used PPE in designated disposal drum	5. Pressure build-up inside drum 6. Pinch hazard	6. Remove cap from bung hole in drum to relieve pressure 7. Wear proper PPE (leather gloves)
17. Decontaminate equipment	6. Splashing water/soap from decontamination 7. Contact with potentially contaminated groundwater through dermal exposure 8. Electrical shock from broken electric cords	6. Wear proper PPE (safety glasses) 7. Wear proper PPE (safety glasses, dermal protection) 8. Properly plug in pump to generator / Do not allow the pump or generator to contact water / Check for breaks in the cord
19. All activities	139. Slips/ Trips/ Falls 140. Hand injuries, cuts or lacerations during manual handling of materials 141. Foot injuries 142. Back injuries 143. Traffic 144. Wildlife: Stray dogs, Mice/rats, Vectors (i.e. mosquitoes, bees, etc.)	142. Be aware of potential trip hazards / Follow good housekeeping procedures/ Mark significant hazards 143. Inspect for jagged/sharp edges, and rough or slippery surfaces / Keep fingers away from pinch points / Wipe off greasy, wet, slippery or dirty objects before handling / Wear leather/ cut-resistant gloves 144. Wear Langan approved safety shoes

JOB STEPS	POTENTIAL HAZARDS	PREVENTATIVE / CORRECTIVE ACTION
	145. High Noise levels 146. Overhead hazards 147. Heat Stress/ Cold Stress 148. Eye Injuries	145. Use proper lifting techniques / Consider load location, task repetition, and load weigh when evaluating what is safe or unsafe to lift / Obtain assistance when possible 146. Wear high visibility clothing & vest / Use cones or signs to designate work area 147. Be aware of surroundings at all times, including the presence of wildlife/ Do not approach stray dogs / Carry/use dog/animal repellant / Use bug spray when needed 148. Wear hearing protection 149. Wear hard hat / Avoid areas were overhead hazards exist. 150. Wear proper attire for weather conditions (sunscreen or protective clothing in sunlight, layers for cold weather) / Drink plenty of fluids to avoid dehydration / Takes breaks as necessary to avoid heat/cold stress 151. Wear safety glasses
Additional items.		
Additional Items identified while in the field. (Delete row if not needed.)		

Print Name	Sign Name	Date
Prepared by:		
Reviewed by:		

ATTACHMENT H

TAILGATE SAFETY BRIEFING FORM

LANGAN TAILGATE SAFETY BRIEFING

Date:_____ Time: _____

Leader:_____ Location:_____

Work Task:

_____

_____

SAFETY TOPICS (*provide some detail of discussion points*)

Chemical Exposure Hazards and Control:_____

_____

Physical Hazards and Control: _____

Air Monitoring: _____

PPE: _____

_____

Communications:_____

Safe Work Practices: _____

_____

Emergency Response: _____

Hospital/Medical Center Location: _____

Phone Nos.: _____

Other: _____

FOR FOLLOW-UP (the issues, responsibilities, due dates, etc.**)**

_____

_____

_____

ATTENDEES

PRINT NAME	COMPANY	SIGNATURE

APPENDIX C

QUALITY ASSURANCE PROJECT PLAN

QUALITY ASSURANCE PROJECT PLAN

for

INGRAHAM STREET LOGISTICS
450 JOHNSON AVENUE
BROOKLYN, NEW YORK
BCP Site No. C224393

Prepared For:

450 Johnson Ave Brooklyn, LLC
1800 Wazee Street, Suite 500
Denver, Colorado

Prepared By:

Langan Engineering, Environmental, Surveying
Landscape Architecture and Geology, D.P.C.
21 Penn Plaza
360 West 31st Street, 8th Floor
New York, New York

June 2024

Langan Project No. 170588003

LANGAN

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1.0 PROJECT DESCRIPTION

1.1 INTRODUCTION

This Quality Assurance Project Plan (QAPP) was prepared on behalf of 450 Johnson Ave Brooklyn, LLC (the Volunteer) for the proposed development located at 450 Johnson Avenue (Block 2992, Lot 17) in the East Williamsburg neighborhood of Brooklyn, New York (the site). This Quality Assurance Project Plan (QAPP) supports the Remedial Investigation Work Plan (RIWP) submitted to the New York State Department of Environmental Conservation (NYSDEC) as part of a New York State Brownfield Cleanup Program (BCP) application. The Volunteer selected Langan Engineering, Environmental, Surveying, Landscape Architecture and Geology, DPC (Langan) to complete the Remedial Investigation (RI). The objective of the RI is to investigate and characterize the nature and extent of environmental impacts at the site and to provide sufficient information to evaluate remedial alternatives, as required for remedial action. Additional site information and data collected previously is provided in the RIWP.

This QAPP specifies analytical methods to be used to ensure that data collected during site management are precise, accurate, representative, comparable, complete, and meet the sensitivity requirements of the project.

1.2 PROJECT OBJECTIVES

The objective of the RI is to investigate and characterize the nature and extent of on-site environmental impacts associated with areas of concern (AOC). This QAPP addresses sampling and analytical methods that may be necessary in support of the RI. These objectives were established to meet standards that will help protect public health and the environment for the site.

1.3 SCOPE OF WORK

The scope of work covered in this QAPP is detailed in the RIWP. In general, the RIWP proposes soil boring installation and sampling, groundwater monitoring well installation and sampling, soil vapor sampling, and indoor air sampling. A dust, odor, and organic vapor control and monitoring plan will be implemented during ground intrusive activities.

The following investigation activities will be performed as part of the RIWP:

Soil Borings and Sampling

- Advance 11 soil borings to the groundwater table, which is anticipated at about 8 to 15 feet bgs.
- Collect up to three samples from each soil borings for a total of 33 soil samples (plus quality assurance/quality control [QA/QC] samples) for laboratory analysis.
- Advancement of 18 hazardous metal delineation soil borings (RIB11, RIB12, and RIB13 and six associated step-out borings from RIB11 and RIB12 and three associated step-out borings from RIB13) to 4 feet bgs; and
- Collection of two soil samples from each delineation soil boring location for a total of 21 soil samples (plus QA/QC samples) for laboratory analysis.

Monitoring Well Installation and Sampling

- Advance eight soil borings to about 5 feet below the water table to install and develop eight permanent monitoring wells, three of which are re-installations of previously drilled temporary monitoring wells.
- Collect one groundwater sample from each monitoring well (plus QA/QC samples) for laboratory analysis.
- Survey and gauge monitoring wells to establish groundwater elevations and evaluate flow direction.

2.0 DATA QUALITY OBJECTIVES AND PROCESS

Data Quality Objectives (DQO) are qualitative and quantitative statements to help ensure that data of known and appropriate quality are obtained during the project. The overall project objective is to investigate subsurface conditions associated with AOCs for the site. The sampling program will provide for collection of soil, groundwater and vapor samples as part of the RIWP. DQOs for sampling activities are determined by evaluating five factors:

- Data needs and uses: The types of data required and how the data will be used after it is obtained.
- Parameters of Interest: The types of chemical or physical parameters required for the intended use.
- Level of Concern: Levels of constituents, which may require remedial actions or further investigations.

- Required Analytical Level: The level of data quality, data precision, and QA/QC documentation required for chemical analysis.
- Required Detection Limits: The detection limits necessary based on the above information.

The quality assurance and quality control objectives for all measurement data include:

- **Precision** – an expression of the reproducibility of measurements of the same parameter under a given set of conditions. Field sampling precision will be determined by analyzing coded duplicate samples and analytical precision will be determined by analyzing internal quality control (QC) duplicates and/or matrix spike duplicates.
- **Accuracy** – a measure of the degree of agreement of a measured value with the true or expected value of the quantity of concern. For soil and groundwater samples, accuracy will be determined through the assessment of the analytical results of field blanks and trip blanks for each sample set. Analytical accuracy will be assessed by examining the percent recoveries of surrogate compounds that are added to each sample (organic analyses only), internal standards, laboratory method blanks, instrument calibration, and the percent recoveries of matrix spike compounds added to selected samples and laboratory blanks. For soil vapor or air samples, analytical accuracy will be assessed by examining the percent recoveries that are added to each sample, internal standards, laboratory method blanks, and instrument calibration.
- **Representativeness** – expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is dependent upon the adequate design of the sampling program and will be satisfied by ensuring that the scope of work is followed and that specified sampling and analysis techniques are used. Representativeness in the laboratory is ensured by compliance to nationally-recognized analytical methods, meeting sample holding times, and maintaining sample integrity while the samples are in the laboratory's possession. This is accomplished by following all applicable methods, laboratory-issued standard operating procedures (SOP), the laboratory's Quality Assurance Manual, and this QAPP. The laboratory is required to be properly certified and accredited.
- **Completeness** – the percentage of measurements made which are judged to be valid. Completeness will be assessed through data validation. The QC objective for completeness is generation of valid data for at least 90 percent of the analyses requested.

- **Comparability** – expresses the degree of confidence with which one data set can be compared to another. The comparability of all data collected for this project will be ensured using several procedures, including standard methods for sampling and analysis as documented in the QAPP, using standard reporting units and reporting formats, and data validation.
- **Sensitivity** – the ability of the instrument or method to detect target analytes at the levels of interest. The project manager will select, with input from the laboratory and quality assurance (QA) personnel, sampling and analytical procedures that achieve the required levels of detection.

3.0 PROJECT ORGANIZATION

All work included with implementing the RIWP will be overseen by Langan, on behalf of the Volunteer. Langan will collect media samples and will subcontract with a qualified driller and a New York State Department of Health (NYSDOH) Environmental Laboratory Approval Program (ELAP)-certified laboratory. Data validation services will be performed by an approved data validator.

For the scope of work described in the RIWP, sampling will be conducted by Langan and the analytical services will be performed by York Analytical Laboratories, Inc. of Stratford, Connecticut (NYSDOH ELAP certification number 10854). Data validation services will be performed by Joe Conboy; résumé attached (Attachment A).

Key contacts for this project are as follows:

450 Johnson Ave Brooklyn LLC	Mr. Jeremiah Kane Telephone: (212) 644-4900
Remediation Engineer:	Mr. Jason Hayes, P.E. Telephone: (212) 479-5427
Langan Project Director:	Mr. Michael Burke, PG, CHMM Telephone: (212) 479-5413
Langan Project Manager:	Mr. Paul McMahon, P.E. Telephone: (212) 479-5451
Langan Field Team Leader:	Ms. Liz McConnell Telephone: (212) 479-5593
Langan Quality Assurance Officer (QAO):	Ms. Mimi Ragorodetsky Telephone: (212) 479-5441
Langan Health and Safety Manager:	Mr. Tony Moffa, CHMM Telephone: (215) 491-6545
Langan Health and Safety Officer (H&SO):	Mr. William Bohrer, CHMM Telephone: (215) 491-6545
Data Validator:	Joe Conboy Telephone: (215) 845-8985

Laboratory Representative:	Ms. Lidya Gulizia (York) Telephone: (203) 325-1371 ext. 833
Field Personnel:	TBD

Langan résumés are provided in Attachment A.

4.0 QUALITY ASSURANCE OBJECTIVES FOR COLLECTION OF DATA

The overall quality assurance objective is to develop and implement procedures for sampling, laboratory analysis, field measurements, and reporting that will provide data of sufficient quality to evaluate the engineering controls on the site. The sample set, chemical analysis results, and interpretations must be based on data that meet or exceed quality assurance objectives established for the site. Quality assurance objectives are usually expressed in terms of accuracy or bias, sensitivity, completeness, representativeness, comparability, and sensitivity of analysis. Variances from the quality assurance objectives at any stage of the investigation will result in the implementation of appropriate corrective measures and an assessment of the impact of corrective measures on the usability of the data.

4.1 PRECISION

Precision is a measure of the degree to which two or more measurements are in agreement. Field precision is assessed through the collection and measurement of field duplicates. Laboratory precision and sample heterogeneity also contribute to the uncertainty of field duplicate measurements. This uncertainty is taken into account during the data assessment process. For field duplicates, results less than 2x the reporting limit (RL) meet the precision criteria if the absolute difference is less than ±2x the RL and acceptable based on professional judgement. For results greater than 2x the RL, the acceptance criteria is a relative percent difference (RPD) of ≤50% (soil and air), <30% (water). RLs and method detection limits (MDL) are provided in Attachment B.

Laboratory precision is assessed through the analysis of matrix spike/matrix spike duplicates (MS/MSD), laboratory control sample/laboratory control sample duplicates (LCS/LCSD) and subsequent calculation of RPD. For outliers, if additional sample volume is present, the MS/MSD should be reanalyzed and the RPD recomputed. If additional volume is not present, an evaluation will be performed to determine the extent of potential matrix interference.

4.2 ACCURACY

Accuracy is the measurement of the reproducibility of the sampling and analytical methodology. It should be noted that precise data may not be accurate data. For the purpose of this QAPP, bias is defined as the constant or systematic distortion of a measurement process, which manifests itself as a persistent positive or negative

deviation from the known or true value. This may be due to (but not limited to) improper sample collection, sample matrix, poorly calibrated analytical or sampling equipment, or limitations or errors in analytical methods and techniques.

Accuracy in the field is assessed through the use of field and trip blanks and through compliance to all sample handling, preservation, and holding time requirements. All field and trip blanks should be non-detect when analyzed by the laboratory. Any contaminant detected in an associated field blank will be evaluated against laboratory blanks (preparation or method) and evaluated against field samples collected on the same day to determine potential for bias.

Laboratory accuracy is assessed by evaluating the percent recoveries of MS/MSD samples, LCS/LCSD, surrogate compound recoveries, internal standard area counts, initial and continuing calibration, and the results of method, initial and continuing calibration blanks. MS/MSD, LCS/LCSD, and surrogate percent recoveries will be compared to either method-specific control limits or laboratory-derived control limits. Sample volume permitting, samples displaying outliers should be reanalyzed. All associated method blanks should be non-detect when analyzed by the laboratory.

4.3 COMPLETENESS

Laboratory completeness is the ratio of total number of samples analyzed and verified as acceptable compared to the number of samples submitted to the fixed-base laboratory for analysis, expressed as a percent. Three measures of completeness are defined:

- Sampling completeness, defined as the number of valid samples collected relative to the number of samples planned for collection;
- Analytical completeness, defined as the number of valid sample measurements relative to the number of valid samples collected; and
- Overall completeness, defined as the number of valid sample measurements relative to the number of samples planned for collection.

Air, soil vapor, soil, and groundwater data will meet a 90% completeness criterion. If the criterion is not met, sample results will be evaluated for trends in rejected and unusable data. The effect of unusable data required for a determination of compliance will also be evaluated.

4.4 REPRESENTATIVENESS

Representativeness expresses the degree to which data accurately and precisely represents a characteristic of a population, parameter variations at a sampling point, a process condition, or an environmental condition within a defined spatial and/or temporal boundary. Representativeness is dependent upon the adequate design of the sampling program and will be satisfied by ensuring that the scope of work is followed and that specified sampling and analysis techniques are used. This is performed by following applicable standard operating procedures (SOPs) and this QAPP. All field technicians will be given copies of appropriate documents prior to sampling events and are required to read, understand, and follow each document as it pertains to the tasks at hand.

Representativeness in the laboratory is ensured by compliance to nationally-recognized analytical methods, meeting sample holding times, and maintaining sample integrity while the samples are in the laboratory's possession. This is performed by following all applicable methods, laboratory-issued SOPs, the laboratory's Quality Assurance Manual, and this QAPP. The laboratory is required to be properly certified and accredited.

4.5 COMPARABILITY

Comparability is an expression of the confidence with which one data set can be compared to another. Comparability is dependent upon the proper design of the sampling program and will be satisfied by ensuring that the sampling plan is followed and that sampling is performed according to the SOPs or other project-specific procedures. Analytical data will be comparable when similar sampling and analytical methods are used as documented in the QAPP. Comparability will be controlled by requiring the use of specific nationally-recognized analytical methods and requiring consistent method performance criteria. Comparability is also dependent on similar quality assurance objectives. Previously collected data will be evaluated to determine whether they may be combined with contemporary data sets.

4.6 SENSITIVITY

Sensitivity is the ability of the instrument or method to detect target analytes at the levels of interest. The project director will select, with input from the laboratory and QA personnel, sampling and analytical procedures that achieve the required levels of detection and QC acceptance limits that meet established performance criteria.

Concurrently, the project manager will select the level of data assessment to ensure that only data meeting the project DQOs are used in decision-making.

Field equipment will be used that can achieve the required levels of detection for analytical measurements in the field. In addition, the field sampling staff will collect and submit full volumes of samples as required by the laboratory for analysis, whenever possible. Full volume aliquots will help ensure achievement of the required limits of detection and allow for reanalysis if necessary. The concentration of the lowest level check standard in a multi-point calibration curve will represent the reporting limit.

Analytical methods and quality assurance parameters associated with the sampling program are presented in Attachment C. The frequency of associated field blanks, trip blanks and duplicate samples will be based on the recommendations listed in DER-10, and as described in Section 5.3.

Site-specific MS and MSD samples will be prepared and analyzed by the analytical laboratory by spiking an aliquot of submitted sample volume with analytes of interest. Additional sample volume is not required by the laboratory for this purpose. An MS/MSD analysis will be analyzed at a rate of 1 out of every 20 samples, or one per analytical batch. MS/MSD samples are only required for soil and groundwater samples.

5.0 SAMPLE COLLECTION AND FIELD DATA ACQUISITION PROCEDURES

Soil and groundwater sampling will be conducted in accordance with the established NYSDEC protocols contained in DER-10/Technical Guidance for Site Investigation and Remediation (May 2010). Soil vapor sampling will be conducted in accordance with the established New York State Department of Health (NYSDOH) protocols contained in the Guidance for Evaluating Soil Vapor Intrusion in the State of New York (October 2006). The following sections describe procedures to be followed for specific tasks.

5.1 FIELD DOCUMENTATION PROCEDURES

Field documentation procedures will include summarizing field data in field books and field data sheets, and proper sample labeling. These procedures are described in the following sections.

5.1.1 Field Data and Notes

Field notebooks contain the documentary evidence regarding procedures conducted by field personnel. Hard cover, bound field notebooks will be used because of their compact size, durability, and secure page binding. The pages of the notebook will not be removed.

Entries will be made in waterproof, permanent blue or black ink. No erasures will be allowed. If an incorrect entry is made, the information will be crossed out with a single strike mark and the change initialed and dated by the team member making the change. Each entry will be dated. Entries will be legible and contain accurate and complete documentation of the individual or sampling team's activities or observations made. The level of detail will be sufficient to explain and reconstruct the activity conducted. Each entry will be signed by the person(s) making the entry.

The following types of information will be provided for each sampling task, as appropriate:

- Project name and number
- Reasons for being on-site or taking the sample
- Date and time of activity
- Sample identification numbers
- Geographical location of sampling points with references to the site, other facilities or a map coordinate system. Sketches will be made in the field logbook when appropriate

- Physical location of sampling locations such as depth below ground surface
- Description of the method of sampling including procedures followed, equipment used and any departure from the specified procedures
- Description of the sample including physical characteristics, odor, etc.
- Readings obtained from health and safety equipment
- Weather conditions at the time of sampling and previous meteorological events that may affect the representative nature of a sample
- Photographic information including a brief description of what was photographed, the date and time, the compass direction of the picture and the number of the picture on the camera
- Other pertinent observations such as the presence of other persons on the site, actions by others that may affect performance of site tasks, etc.
- Names of sampling personnel and signature of persons making entries

Field records will also be collected on field data sheets including boring logs, which will be used for geologic and drilling data during soil boring activities. Field data sheets will include the project-specific number and stored in the field project files when not in use. At the completion of the field activities, the field data sheets will be maintained in the central project file.

5.1.2 Sample Labeling

Each sample collected will be assigned a unique identification number in accordance with the sample nomenclature guidance included in Attachment D, and placed in an appropriate sample container. Each sample container will have a sample label affixed to the outside with the date and time of sample collection and project name. In addition, the label will contain the sample identification number, analysis required and chemical preservatives added, if any. All documentation will be completed in waterproof ink.

5.2 EQUIPMENT CALIBRATION AND PREVENTATIVE MAINTENANCE

A photoionization detector (PID) will be used during the sampling activities to evaluate work zone action levels, collect pre- and post-sample readings for air samples, screen soil samples, and collect monitoring well headspace readings. Field calibration and/or field checking of the PID will be the responsibility of the field team leader and the site H&SO, and will be accomplished by following the procedures outlined in the operating manual

for the instrument. At a minimum, field calibration and/or field equipment checking will be performed once daily, prior to use. Field calibration will be documented in the field notebook. Entries made into the logbook regarding the status of field equipment will include the following information:

- Date and time of calibration
- Type of equipment serviced and identification number (such as serial number)
- Reference standard used for calibration
- Calibration and/or maintenance procedure used
- Other pertinent information

A water quality meter (YSI 6820 or similar) will be used during purging of groundwater to measure pH, specific conductance, temperature, dissolved oxygen, turbidity and oxidation-reduction-potential (ORP), every ten minutes. A portable turbidity meter (LaMotte or similar) may also be used to measure turbidity. Water-quality meters should be calibrated and the results documented before use each day using standardized field calibration procedures and calibration checks.

Equipment that fails calibration or becomes inoperable during use will be removed from service and segregated to prevent inadvertent utilization. The equipment will be properly tagged to indicate that it is out of calibration. Such equipment will be repaired and recalibrated to the manufacturer's specifications by qualified personnel. Equipment that cannot be repaired will be replaced.

Off-site calibration and maintenance of field instruments will be conducted as appropriate throughout the duration of project activities. All field instrumentation, sampling equipment and accessories will be maintained in accordance with the manufacturer's recommendations and specifications and established field equipment practice. Off-site calibration and maintenance will be performed by qualified personnel. A logbook will be kept to document that established calibration and maintenance procedures have been followed. Documentation will include both scheduled and unscheduled maintenance.

5.3 SAMPLE COLLECTION

Soil Samples

Soil samples will be visually classified and field screened using a PID to assess potential impacts from VOCs and for health and safety monitoring. Soil samples collected for analysis of VOCs will be collected using either EnCore® or Terra Core® sampling equipment. For analysis of non-volatile parameters, samples will be homogenized and placed into glass jars.

Soil sampling for per- and polyfluoroalkyl substances (PFAS) will be conducted in accordance with EPA Method 1633 Field Sampling Guidelines. PFAS samples will be collected first in High Density Polyethylene (HDPE)/polypropylene containers using sampling equipment either made with stainless steel, HDPE, or polypropylene. Food and beverages will be prohibited near the sampling equipment. Additionally, no cosmetics, moisturizers, hand cream, sun screen or clothing materials containing Gore-Tex™ or Tyvek® will be worn during sampling.

Soil samples will analyzed for PFAS by USEPA Method 1633 Modified and 1,4-dioxane by USEPA Method 8270. Both methods listed above will be able to meet the reporting limits for PFAS (0.5 microgram per kilogram [µg/kg]) and 1,4-dioxane (0.1 milligram per kilogram [mg/kg]) in soil.

After collection, all sample jars will be capped and securely tightened, and placed in iced coolers and maintained at 4°C ±2°C until they are transferred to the laboratory for analysis, in accordance with the procedures outlined in Section 5.4 and 5.6. Analysis and/or extraction and digestion of collected soil samples will meet the holding times required for each analyte as specified in Attachment C. In addition, analysis of collected soil sample will meet all quality assurance criteria set forth by this QAPP and DER-10.

Groundwater Samples

Groundwater sampling will be conducted using low-flow sampling procedures following USEPA guidance ("Low Stress [low flow] Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells", EQASOP-GW4, dated July 30, 1996, revised September 19, 2017).

During purging, field parameters should be measured, including: water level drawdown, purge rate, pH, specific conductance, temperature, dissolved oxygen, turbidity and

oxidation-reduction-potential (ORP), every ten minutes using a water quality meter (YSI 6820 or similar) and a depth-to-water interface probe that should be decontaminated between wells. Samples should generally not be collected until the field parameters have stabilized. Field parameters will be considered stable once three sets of measurements are within ±0.1 standard units for pH, ±3% for conductivity and temperature, ±10 millivolts for ORP, and ±10% for turbidity and dissolved oxygen. Purge rates should be adjusted to keep the drawdown in the well to less than 0.3 feet, as practical. Additionally, an attempt should be made to achieve a stable turbidity reading of less than 5 Nephelometric Turbidity Units (NTU) prior to sampling. If the turbidity reading does not stabilize at reading of less than 5 NTU for a given well, then both filtered and unfiltered samples should be collected from that well. If necessary, field filtration should be performed using a 0.45 micron disposable in-line filter. Groundwater samples should be collected after parameters have stabilized as noted above or the readings are within the precision of the meter. Deviations from the stabilization and drawdown criteria, if any, should be noted on the sampling logs.

Groundwater sampling for PFAS and 1,4-dioxane will be performed in accordance with the NYSDEC-approved Groundwater Monitoring Plan, dated August 27, 2004, which specifies purging three to five well volumes prior to sample collection. The pump will be decontaminated with Alconox and water. Field personnel will wear nitrile gloves while collecting and handing groundwater samples.

Groundwater sampling for PFAS will be conducted in accordance with EPA Method 1633 Field Sampling Guidelines. PFAS samples will be collected first in High Density Polyethylene (HDPE)/polypropylene containers using sampling equipment either made with stainless steel, HDPE, or polypropylene. Food and beverages will be prohibited near the sampling equipment. Additionally, no cosmetics, moisturizers, hand cream, sun screen or clothing materials containing Gore-Tex™ or Tyvek® will be worn during sampling.

Groundwater samples will analyzed for PFAS by USEPA Method 1633 and 1,4-dioxane by USEPA Method 8270 SIM. Both methods listed above will be able to meet the reporting limits for PFAS (2 nanograms per liter [ng/L]) and 1,4-dioxane (0.35 micrograms per liter [µg/L]) in groundwater.

Samples should be collected directly into laboratory-supplied jars. After collection, all sample jars will be capped and securely tightened, and placed in iced coolers and maintained at 4°C ±2°C until they are transferred to the laboratory for analysis, in

accordance with the procedures outlined in Section 5.4 and 5.6. Analysis and/or extraction and digestion of collected groundwater samples will meet the holding times required for each analyte as specified in Attachment C. In addition, analysis of collected groundwater sample will meet all quality assurance criteria set forth by this QAPP and DER-10.

Groundwater samples collected for analysis of PFAS will be collected in accordance with the specialized protocols outlined in Attachment E.

Sub-slab Soil Vapor Samples

Prior to sample collection, a pre-sampling inspection will be conducted to document chemicals and potential subsurface pathways at the site. Sub-slab soil vapor samples will be collected into laboratory-supplied, batch certified-clean Summa® canisters calibrated for a sampling rate of two hours. The pressure gauges on each calibrated flow controller should be monitored throughout sample collection. Sample collection should be stopped when the pressure reading reaches -4 mmHg.

Sample Field Blanks and Field Duplicates

Field blanks will be collected for quality assurance purposes at a rate of one per 20 investigative samples per matrix (soil and groundwater only). Field blanks will be obtained by pouring laboratory-demonstrated analyte-free water on or through a decontaminated sampling device following use and implementation of decontamination protocols. The water will be collected off of the sampling device into a laboratory-provided sample container for analysis. Field blank samples will be analyzed for the complete list of analytes on the day of sampling. To assess contamination resulting from sample transport, trip blanks will be collected at a rate of one per day if soil samples are analyzed for VOCs during that day. Equipment blanks will be collected at a minimum frequency of one per day per matrix for PFAS.

Field duplicate soil and groundwater samples will be collected and analyzed for quality assurance purposes. Field duplicate samples will be collected at a frequency of 1 per 20 investigative samples per matrix and will be submitted to the laboratory as "blind" samples. If less than 20 samples are collected during a particular sampling event, one field duplicate sample will be collected. Field duplicates will be collected from the same sample volume as the parent sample.

5.4 SAMPLE CONTAINERS AND HANDLING

Certified, commercially clean sample containers will be obtained from the analytical laboratory. If soil or groundwater samples are being collected, the laboratory will also prepare and supply the required trip blanks and field blank sample containers and reagent preservatives. Sample bottle containers, including the field blank containers, will be placed into plastic coolers by the laboratory. These coolers will be received by the field sampling team within 24 hours of their preparation in the laboratory. Prior to the commencement of field work, Langan field personnel will fill the plastic coolers with ice in Ziploc® bags (or equivalent) to maintain a temperature of 4° ±2° C.

Soil and/or groundwater samples collected in the field for laboratory analysis will be placed directly into the laboratory-supplied sample containers. Samples will then be placed and stored on-ice in laboratory provided coolers until shipment to the laboratory. The temperature in the coolers containing samples and associated field blanks will be maintained at a temperature of 4°±2°C while on-site and during sample shipment to the analytical laboratory.

Possession of samples collected in the field will be traceable from the time of collection until they are analyzed by the analytical laboratory or are properly disposed. Chain-of-custody procedures, described in Section 5.9, will be followed to maintain and document sample possession. Samples will be packaged and shipped as described in Section 5.6.

5.5 SPECIAL CONSIDERATIONS FOR PFAS SAMPLE COLLECTION

The following special considerations apply to the collection of groundwater samples for PFAS analysis to prevent cross-contamination:

- Field equipment will not contain Teflon®
- All sampling material will be made from stainless steel, HDPE, acetate, silicon, or polypropylene
- No waterproof field books will be used
- No plastic clipboards, binders, or spiral hard cover notebooks will be used
- No adhesives will be used
- No sharpies or permanent markers will be used; ball point pens are acceptable
- Aluminum foil will not be used

- PFAS samples will be kept in a separate cooler from other sampling containers
- Coolers will be filled only with regular ice

PFAS compound sampling protocol and the laboratories SOP for PFAS analysis are provided in Attachment E.

5.6 SAMPLE PRESERVATION

Sample preservation measures will be used in an attempt to prevent sample decomposition by contamination, degradation, biological transformation, chemical interactions and other factors during the time between sample collection and analysis. Preservation will commence at the time of sample collection and will continue until analyses are performed. Should chemical preservation be required, the analytical laboratory will add the preservatives to the appropriate sample containers before shipment to the office or field. Samples will be preserved according to the requirements of the specific analytical method selected, as shown in Attachment C.

5.7 SAMPLE SHIPMENT

5.7.1 Packaging

Soil vapor samples canisters can be stored and transported without additional packaging. Soil and groundwater sample containers will be placed in plastic coolers. Ice in Ziploc® bags (or equivalent) will be placed around sample containers. Cushioning material will be added around the sample containers if necessary. Chains-of-custody and other paperwork will be placed in a Ziploc® bag (or equivalent) and placed inside the cooler. The cooler will be taped closed and custody seals will be affixed to one side of the cooler at a minimum. If the samples are being shipped by an express delivery company (e.g. FedEx) then laboratory address labels will be placed on top of the cooler.

5.7.2 Shipping

Standard procedures to be followed for shipping environmental samples to the analytical laboratory are outlined below.

- All environmental samples will be transported to the laboratory by a laboratory-provided courier under the chain-of-custody protocols described in Section 5.9.

- Prior notice will be provided to the laboratory regarding when to expect shipped samples. If the number, type or date of shipment changes due to site constraints or program changes, the laboratory will be informed.

5.8 DECONTAMINATION PROCEDURES

Decontamination procedures will be used for non-dedicated sampling equipment. Decontamination of field personnel is discussed in the site-specific HASP appended to the RIWP. Field sampling equipment that is to be reused will be decontaminated in the field in accordance with the following procedures:

1. Laboratory-grade glassware detergent and tap water scrub to remove visual contamination
2. Generous tap water rinse
3. Distilled/de-ionized water rinse

5.9 RESIDUALS MANAGEMENT

Debris (e.g., paper, plastic and disposable personal protective equipment) will be collected in plastic garbage bags and disposed of as non-hazardous industrial waste. Debris is expected to be transported to a local municipal landfill for disposal. If applicable, residual solids (e.g., leftover soil cuttings) will be placed back in the borehole from which it was sampled. If gross contamination is observed, soil will be collected and stored in Department of Transportation (DOT)-approved 55-gallon drums in a designated storage area at the site. All drums will be properly labeled, sealed, and characterized as necessary. The residual materials will be stored in a designated storage area at the site for further characterization, treatment or disposal.

Residual fluids (such as purge water) will be collected and stored in DOT-approved (or equivalent) 55-gallon drums in a designated storage area at the site. The residual fluids will be transported to the on-site wastewater treatment plant or analyzed, characterized and disposed off-site in accordance with applicable federal and state regulations. Residual fluids such as decontamination water may be discharged to the ground surface, however, if gross contamination is observed, the residual fluids will be collected, stored, and transported similar to purge water or other residual fluids.

5.10 CHAIN OF CUSTODY PROCEDURES

A chain-of-custody protocol has been established for collected samples that will be followed during sample handling activities in both field and laboratory operations. The primary purpose of the chain-of-custody procedures is to document the possession of the samples from collection through shipping, storage and analysis to data reporting and disposal. Chain-of-custody refers to actual possession of the samples. Samples are considered to be in custody if they are within sight of the individual responsible for their security or locked in a secure location. Each person who takes possession of the samples, except the shipping courier, is responsible for sample integrity and safe keeping. Chain-of-custody procedures are provided below:

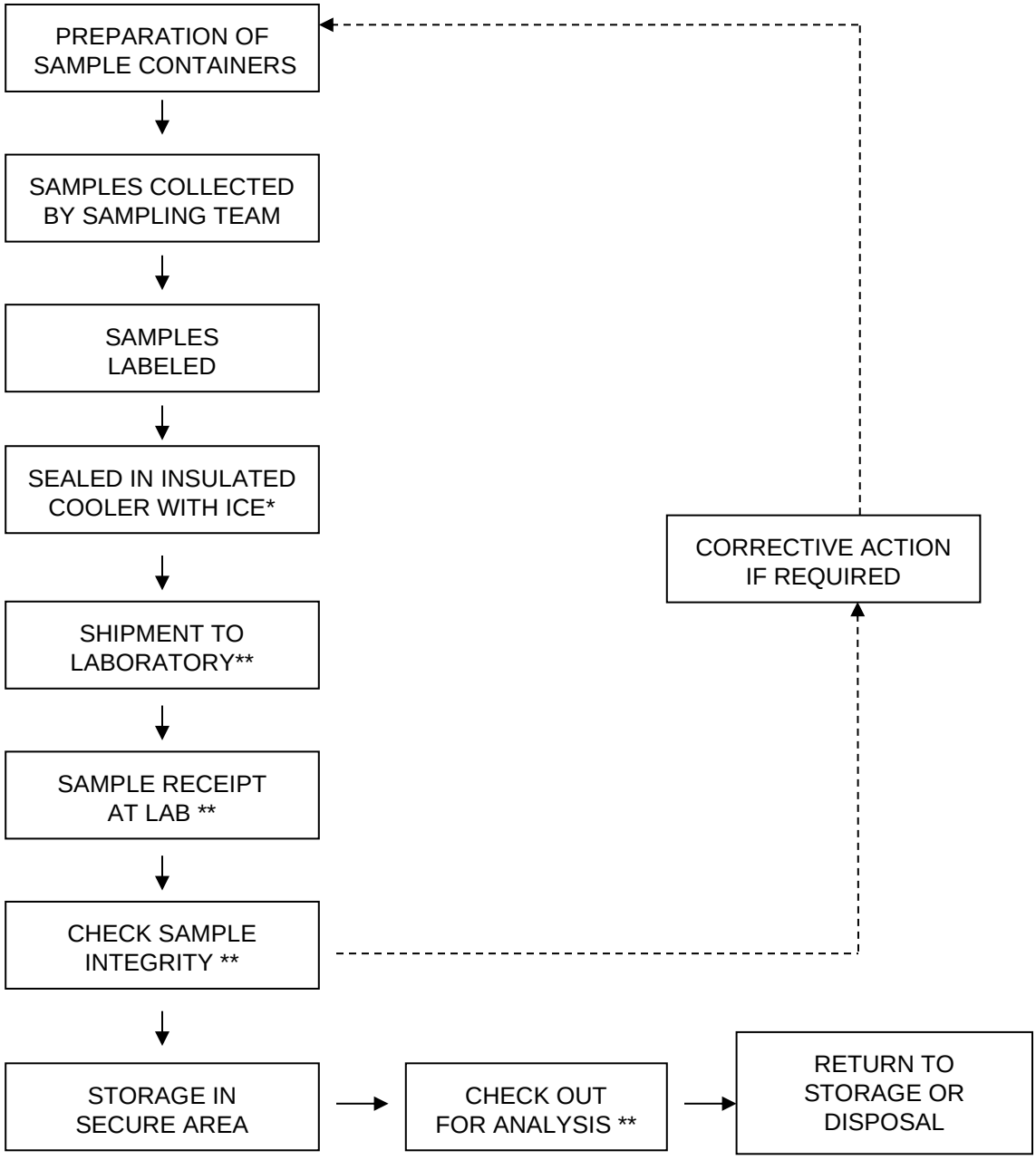
- Chain-of-custody will be initiated by the laboratory supplying the pre-cleaned and prepared sample containers. Chain-of-custody forms will accompany the sample containers.
- Following sample collection, the chain-of-custody form will be completed for the sample collected. The sample identification number, date and time of sample collection, analysis requested and other pertinent information (e.g., preservatives) will be recorded on the form. All entries will be made in waterproof, permanent blue or black ink.
- Langan field personnel will be responsible for the care and custody of the samples collected until the samples are transferred to another party, dispatched to the laboratory, or disposed. The sampling team leader will be responsible for enforcing chain-of-custody procedures during field work.
- When the form is full or when all samples have been collected that will fit in a single cooler, the sampling team leader will check the form for possible errors and sign the chain-of-custody form. Any necessary corrections will be made to the record with a single strike mark, dated, and initialed.

When soil and/or groundwater samples are collected, sample coolers will be accompanied by the chain-of-custody form, sealed in a Ziploc® bag (or equivalent) and placed on top of the samples or taped to the inside of the cooler lid. If applicable, a shipping bill will be completed for each cooler and the shipping bill number recorded on the chain-of-custody form.

Samples will be packaged for shipment to the laboratory with the appropriate chain-of-custody form. A copy of the form will be retained by the sampling team for the project

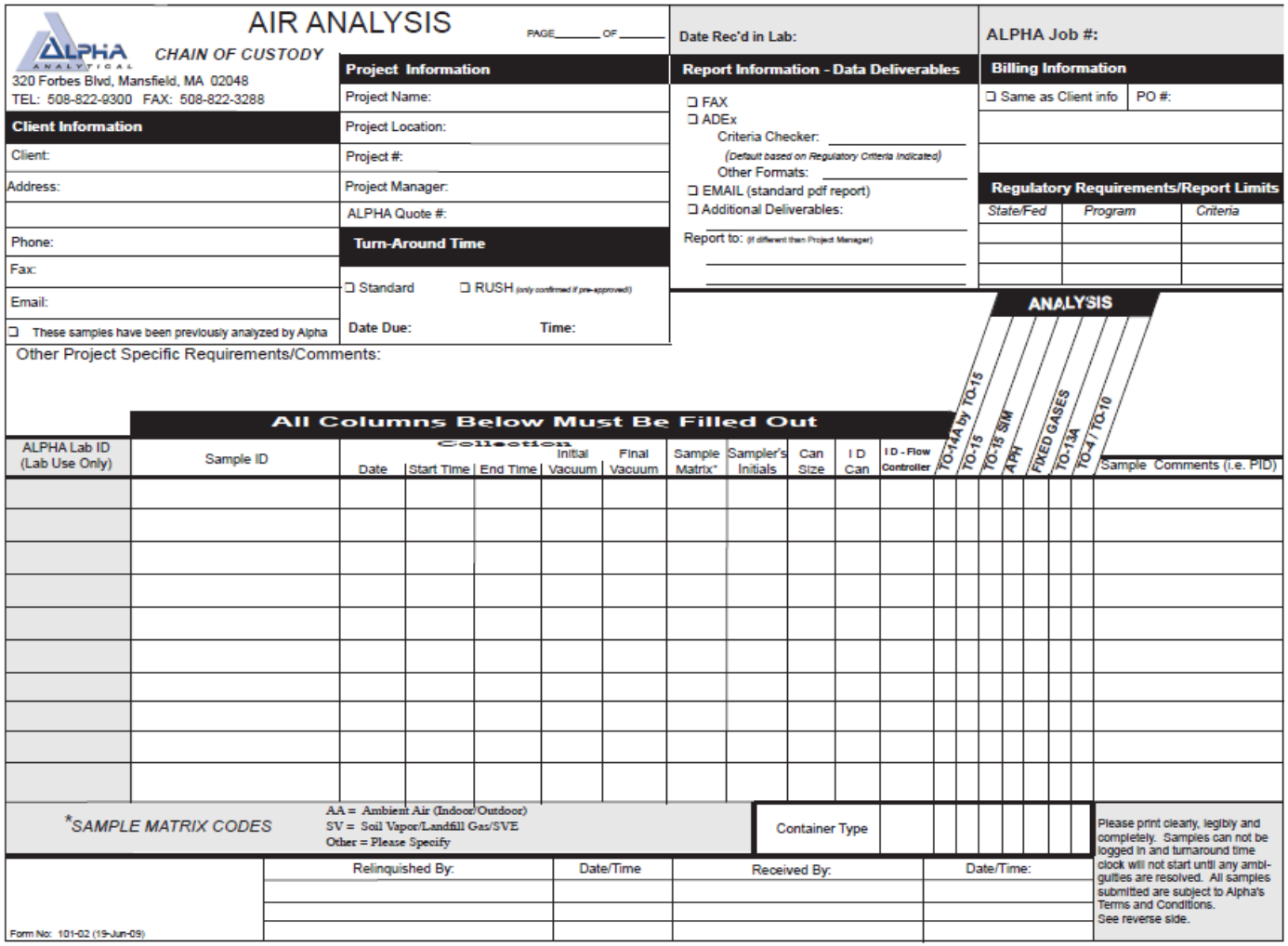
file and the original will be sent to the laboratory with the samples. Bills of lading will also be retained as part of the documentation for the chain-of-custody records, if applicable. When transferring custody of the samples, the individuals relinquishing and receiving custody of the samples will verify sample numbers and condition and will document the sample acquisition and transfer by signing and dating the chain-of-custody form. This process documents sample custody transfer from the sampler to the analytical laboratory. A flow chart showing a sample custody process is included as Figure 5.1, and example chain-of-custody forms are included as Figures 5.2 and 5.3.

Figure 5.1 Sample Custody



*SUMMA CANISTERS SHOULD NOT BE ICED
** REQUIRES SIGN-OFF ON CHAIN-OF-CUSTODY FORM

Figure 5.2 Sample Chain-of-Custody Form – Air Samples



AIR ANALYSIS — CHAIN OF CUSTODY — PAGE ____ OF ____

ALPHA ANALYTICAL
320 Forbes Blvd, Mansfield, MA 02048
TEL: 508-822-9300 FAX: 508-822-3288

Date Rec'd in Lab:

ALPHA Job #:

Client Information
Client:
Address:
Phone:
Fax:
Email:
❑ These samples have been previously analyzed by Alpha

Project Information
Project Name:
Project Location:
Project #:
Project Manager:
ALPHA Quote #:

Turn-Around Time
❑ Standard ❑ RUSH (only confirmed if pre-approved)
Date Due: Time:

Report Information - Data Deliverables
❑ FAX
❑ ADEx
Criteria Checker: _____
(Default based on Regulatory Criteria Indicated)
Other Formats: _____
❑ EMAIL (standard pdf report)
❑ Additional Deliverables:
Report to: (if different than Project Manager)

Billing Information
❑ Same as Client info PO #:

Regulatory Requirements/Report Limits

State/Fed	Program	Criteria

Other Project Specific Requirements/Comments:

All Columns Below Must Be Filled Out

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Start Time	End Time	Initial Vacuum	Final Vacuum	Sample Matrix*	Sampler's Initials	Can Size	I D Can	I D - Flow Controller	ANALYSIS TO-14A by TO-15	TO-15	TO-15 SIM	APH	FIXED GASES	TO-13A	TO-4 / TO-10	Sample Comments (i.e. PID)

*SAMPLE MATRIX CODES
AA = Ambient Air (Indoor/Outdoor)
SV = Soil Vapor/Landfill Gas/SVE
Other = Please Specify

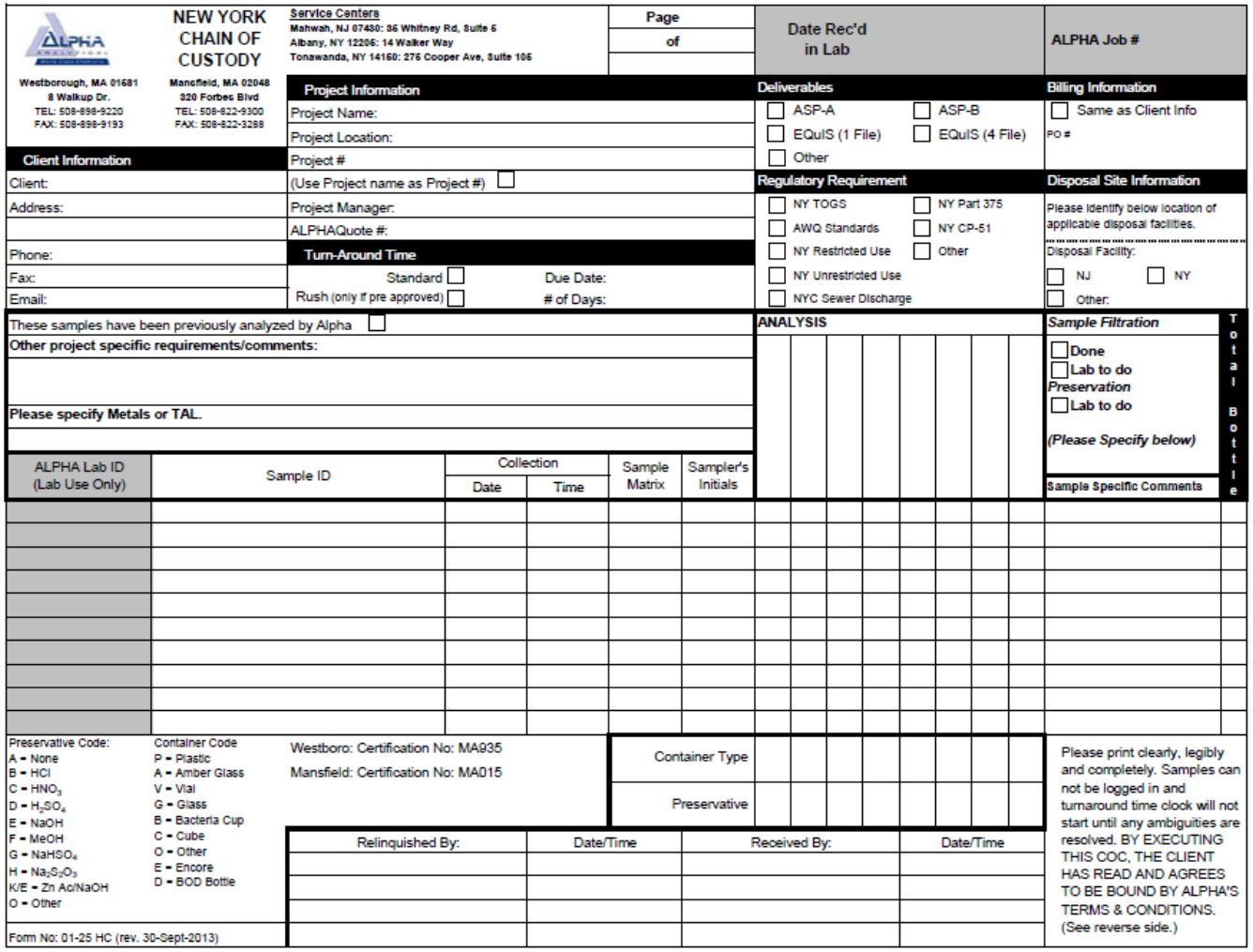
Container Type

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Terms and Conditions.
See reverse side.

Relinquished By:	Date/Time	Received By:	Date/Time:

Form No: 101-02 (19-Jun-09)

Figure 5.3 Sample Chain-of-Custody Form – Soil and Groundwater Samples



ALPHA ANALYTICAL

Westborough, MA 01681
8 Walkup Dr.
TEL: 508-898-9220
FAX: 508-898-9193

Mansfield, MA 02048
320 Forbes Blvd
TEL: 508-822-9300
FAX: 508-822-3288

NEW YORK CHAIN OF CUSTODY

Service Centers
Mahwah, NJ 07430: 35 Whitney Rd, Suite 5
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page
of

Date Rec'd in Lab

ALPHA Job #

Client Information
Client:
Address:
Phone:
Fax:
Email:

Project Information
Project Name:
Project Location:
Project #
(Use Project name as Project #) ☐
Project Manager:
ALPHAQuote #:

Turn-Around Time
Standard ☐ Due Date:
Rush (only if pre approved) ☐ # of Days:

Deliverables
☐ ASP-A ☐ ASP-B
☐ EQuIS (1 File) ☐ EQuIS (4 File)
☐ Other

Regulatory Requirement
☐ NY TOGS ☐ NY Part 375
☐ AWQ Standards ☐ NY CP-51
☐ NY Restricted Use ☐ Other
☐ NY Unrestricted Use
☐ NYC Sewer Discharge

Billing Information
☐ Same as Client Info
PO #

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
☐ NJ ☐ NY
☐ Other:

These samples have been previously analyzed by Alpha ☐
Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

Sample Filtration
☐ Done
☐ Lab to do
Preservation
☐ Lab to do
(Please Specify below)

Total Bottle

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Sample Specific Comments

Preservative Code:
A = None
B = HCl
C = HNO_3
D = H_2SO_4
E = NaOH
F = MeOH
G = $NaHSO_4$
H = $Na_2S_2O_3$
K/E = Zn Ac/NaOH
O = Other

Container Code
P = Plastic
A = Amber Glass
V = Vial
G = Glass
B = Bacteria Cup
C = Cube
O = Other
E = Encore
D = BOD Bottle

Westboro: Certification No: MA935
Mansfield: Certification No: MA015

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. BY EXECUTING THIS COC, THE CLIENT HAS READ AND AGREES TO BE BOUND BY ALPHA'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 30-Sept-2013)

Laboratory chain-of-custody will be maintained throughout the analytical processes as described in the laboratory's Quality Assurance Manual. The analytical laboratory will provide a copy of the chain-of-custody in the analytical data deliverable package. The chain-of-custody becomes the permanent record of sample handling and shipment.

5.11 LABORATORY SAMPLE STORAGE PROCEDURES

The subcontracted laboratory will use a laboratory information management system (LIMS) to track and schedule samples upon receipt by the analytical laboratories. Any sample anomalies identified during sample log-in must be evaluated on individual merit for the impact upon the results and the data quality objectives of the project. When irregularities do exist, the environmental consultant must be notified to discuss recommended courses of action and documentation of the issue must be included in the project file.

For samples requiring thermal preservation, the temperature of each cooler will be immediately recorded. Each sample and container will be assigned a unique laboratory identification number and secured within the custody room walk-in coolers designated for new samples. Samples will be, as soon as practical, disbursed in a manner that is functional for the operational team. The temperature of all coolers and freezers will be monitored and recorded using a certified temperature sensor. Any temperature excursions outside of acceptance criteria (i.e., below 2°C or above 6°C) will initiate an investigation to determine whether any samples may have been affected. Samples for VOCs will be maintained in satellite storage areas within the VOC laboratory. Following analysis, the laboratory's specific procedures for retention and disposal will be followed as specified in the laboratory's SOPs and/or QA manual.

6.0 DATA REDUCTION, VALIDATION, AND REPORTING

6.1 INTRODUCTION

Data collected during the field investigation will be reduced and reviewed by the laboratory QA personnel, and a report on the findings will be tabulated in a standard format. The criteria used to identify and quantify the analytes will be those specified for the applicable methods in the USEPA SW-846 and subsequent updates. The data package provided by the laboratory will contain all items specified in the USEPA SW-846 methodology appropriate for the analyses to be performed, and be reported in standard format.

The completed copies of the chain-of-custody records (both external and internal) accompanying each sample from time of initial bottle preparation to completion of analysis shall be attached to the analytical reports.

6.2 DATA REDUCTION

The Analytical Services Protocol (ASP) Category B data packages and an electronic data deliverable (EDD) will be provided by the laboratory after receipt of a complete sample delivery group. The Project Manager will immediately arrange for archiving the results and preparation of result tables. These tables will form the database for assessment of the site contamination condition.

Each EDD deliverable must be formatted using a Microsoft Windows operating system and the NYSDEC data deliverable format for EQuIS. To avoid transcription errors, data will be loaded directly into the ASCII format from the LIMS. If this cannot be accomplished, the consultant should be notified via letter of transmittal indicating that manual entry of data is required for a particular method of analysis. All EDDs must also undergo a QC check by the laboratory before delivery. The original data, tabulations, and electronic media are stored in a secure and retrievable fashion.

The Project Manager or Task Manager will maintain close contact with the QA reviewer to ensure all non-conformance issues are acted upon prior to data manipulation and assessment routines. Once the QA review has been completed, the Project Manager may direct the Team Leaders or others to initiate and finalize the analytical data assessment.

6.3 DATA VALIDATION

Data validation will be performed in accordance with the USEPA validation guidelines for organic and inorganic data review. Validation will include the following:

- Verification of the QC sample results;
- Verification of the identification of sample results (both positive hits and non-detects);
- Recalculation of 10% of all investigative sample results; and
- Preparation of Data Usability Summary Reports (DUSR).

A DUSR will be prepared and reviewed by the QAO before issuance. The DUSR will present the results of data validation, including a summary assessment of laboratory data packages, sample preservation and chain-of-custody procedures, and a summary assessment of precision, accuracy, representativeness, comparability, and completeness for each analytical method. A detailed assessment of each sample delivery group will follow. For each of the organic analytical methods, the following will be assessed:

- Holding times;
- Instrument tuning;
- Instrument calibrations;
- Blank results;
- System monitoring compounds or surrogate recovery compounds (as applicable);
- Internal standard recovery results (if applicable);
- MS and MSD recoveries and RPDs
- LCS and LCSD recoveries and RPDs
- Target compound identification;
- Chromatogram quality;
- Pesticide cleanup (if applicable);
- Compound quantitation and reported detection limits;
- Overall system performance; and
- Results verification.

For each of the inorganic compounds, the following will be assessed:

- Holding times;
- Calibrations;
- Blank results;
- Interference check sample;
- Laboratory control samples;
- Duplicates;
- Matrix Spike;
- Furnace atomic absorption analysis QC;
- ICP serial dilutions; and
- Results verification and reported detection limits.

Based on the results of data validation, the validated analytical results reported by the laboratory will be assigned one of the following usability flags:

- "U" - Not detected. The associated number indicates the approximate sample concentration necessary to be detected significantly greater than the level of the highest associated blank;
- "UJ" - Not detected. Quantitation limit may be inaccurate or imprecise;
- "J" - Analyte is present. Reported value may be associated with a higher level of uncertainty than is normally expected with the analytical method
- "N" – Tentative identification. Analyte is considered present in the sample;
- "R" – Unreliable result; data is rejected or unusable. Analyte may or may not be present in the sample; and
- No Flag - Result accepted without qualification.

7.0 QUALITY ASSURANCE PERFORMANCE AUDITS AND SYSTEM AUDITS

7.1 INTRODUCTION

Quality assurance audits may be performed by the project quality assurance group under the direction and approval of the QAO. These audits will be implemented to evaluate the capability and performance of project and subcontractor personnel, items, activities, and documentation of the measurement system(s). Functioning as an independent body and reporting directly to corporate quality assurance management, the QAO may plan, schedule, and approve system and performance audits based upon procedures customized to the project requirements. At times, the QAO may request additional personnel with specific expertise from company and/or project groups to assist in conducting performance audits. However, these personnel will not have responsibility for the project work associated with the performance audit.

7.2 SYSTEM AUDITS

System audits may be performed by the QAO or designated auditors, and encompass a qualitative evaluation of measurement system components to ascertain their appropriate selection and application. In addition, field and laboratory quality control procedures and associated documentation may be system audited. These audits may be performed once during the performance of the project. However, if conditions adverse to quality are detected or if the Project Manager requests, additional audits may occur.

7.3 PERFORMANCE AUDITS

The laboratory may be required to conduct an analysis of Performance Evaluation samples or provide proof that Performance Evaluation samples submitted by USEPA or a state agency have been analyzed within the past twelve months.

7.4 FORMAL AUDITS

Formal audits refer to any system or performance audit that is documented and implemented by the QA group. These audits encompass documented activities performed by qualified lead auditors to a written procedure or checklists to objectively verify that quality assurance requirements have been developed, documented, and instituted in accordance with contractual and project criteria. Formal audits may be performed on project and subcontractor work at various locations.

Audit reports will be written by auditors who have performed the site audit after gathering and evaluating all data. Items, activities, and documents determined by lead auditors to be in noncompliance shall be identified at exit interviews conducted with the involved management. Non-compliances will be logged, and documented through audit findings, which are attached to and are a part of the integral audit report. These audit-finding forms are directed to management to satisfactorily resolve the noncompliance in a specified and timely manner.

The Project Manager has overall responsibility to ensure that all corrective actions necessary to resolve audit findings are acted upon promptly and satisfactorily. Audit reports must be submitted to the Project Manager within fifteen days of completion of the audit. Serious deficiencies will be reported to the Project Manager within 24 hours. All audit checklists, audit reports, audit findings, and acceptable resolutions are approved by the QAO prior to issue. Verification of acceptable resolutions may be determined by re-audit or documented surveillance of the item or activity. Upon verification acceptance, the QAO will close out the audit report and findings.

8.0 CORRECTIVE ACTION

8.1 INTRODUCTION

The following procedures have been established to ensure that conditions adverse to quality, such as malfunctions, deficiencies, deviations, and errors, are promptly investigated, documented, evaluated, and corrected.

8.2 PROCEDURE DESCRIPTION

When a significant condition adverse to quality is noted at a site, laboratory, or subcontractor location, the cause of the condition will be determined and corrective action will be taken to preclude repetition. Condition identification, cause, reference documents, and corrective action planned to be taken will be documented and reported to the QAO, Project Manager, Field Team Leader and involved contractor management, at a minimum. Implementation of corrective action is verified by documented follow-up action.

All project personnel have the responsibility, as part of the normal work duties, to promptly identify, solicit approved correction, and report conditions adverse to quality. Corrective actions will be initiated as follows:

- When predetermined acceptance standards are not attained;
- When procedure or data compiled are determined to be deficient;
- When equipment or instrumentation is found to be faulty;
- When samples and analytical test results are not clearly traceable;
- When quality assurance requirements have been violated;
- When designated approvals have been circumvented;
- As a result of system and performance audits;
- As a result of a management assessment;
- As a result of laboratory/field comparison studies; and
- As required by USEPA SW-846, and subsequent updates, or by the NYSDEC ASP.

Project management personnel, field investigation teams, remedial response planning personnel, and laboratory groups monitor on-going work performance in the normal course of daily responsibilities. Work may be audited at project sites, laboratories, or contractor locations. Activities, or documents ascertained to be noncompliant with quality assurance requirements will

be documented. Corrective actions will be mandated through audit finding sheets attached to the audit report. Audit findings are logged, maintained, and controlled by the Task Manager.

Personnel assigned to quality assurance functions will have the responsibility to issue and control Corrective Action Request (CAR) Forms (Figure 8.1 or similar by email). The CAR identifies the out-of-compliance condition, reference document(s), and recommended corrective action(s) to be administered. The CAR is issued to the personnel responsible for the affected item or activity. A copy is also submitted to the Project Manager. The individual to whom the CAR is addressed returns the requested response promptly to the QA personnel, affixing his/her signature and date to the corrective action block, after stating the cause of the conditions and corrective action to be taken. The QA personnel maintain the log for status of CARs, confirms the adequacy of the intended corrective action, and verifies its implementation. CARs will be retained in the project file for the records.

Any project personnel may identify noncompliance issues; however, the designated QA personnel are responsible for documenting, numbering, logging, and verifying the close out action. The Project Manager will be responsible for ensuring that all recommended corrective actions are implemented, documented, and approved.

Figure 8.1 Corrective Action Request

CORRECTIVE ACTION REQUEST
Number: _____ Date: _____
TO: _____ You are hereby requested to take corrective actions indicated below and as otherwise determined by you to (a) resolve the noted condition and (b) to prevent it from recurring. Your written response is to be returned to the project quality assurance manager by _____
CONDITION:
REFERENCE DOCUMENTS:
RECOMMENDED CORRECTIVE ACTIONS:
_____ _____ _____ _____ _____ _____ Originator Date Approval Date Approval Date
RESPONSE
CAUSE OF CONDITION
CORRECTIVE ACTION (A) RESOLUTION (B) PREVENTION (C) AFFECTED DOCUMENTS
C.A. FOLLOWUP:

CORRECTIVE ACTION VERIFIED BY: _____ DATE:_____

9.0 REFERENCES

NYSDEC. Division of Environmental Remediation. DER-10/Technical Guidance for Site Investigation and Remediation, dated May 3, 2010.

NYSDOH. Final Guidance for Evaluating Soil Vapor Intrusion in the State of New York, dated October 2006.

Taylor, J. K., 1987. Quality Assurance of Chemical Measurements. Lewis Publishers, Inc., Chelsea, Michigan

USEPA, 1986. SW-846 "Test Method for Evaluating Solid Waste," dated November 1986. USEPA, Washington, D.C.

USEPA, 1987. Data Quality Objectives for Remedial Response Actions Activities: Development Process, EPA/540/G-87/003, OSWER Directive 9355.0-7- USEPA, Washington, D.C.

USEPA, 1992a. CLP Organics Data Review and Preliminary Review. SOP No. HW-6, Revision #8, dated January 1992. USEPA Region II.

USEPA, 1992b. Evaluation of Metals Data for the Contract Laboratory Program (CLP) based on SOW 3/90. SOP No. HW-2, Revision XI, dated January 1992. USEPA Region II.

USEPA, 2016. Low/Medium Volatile Data Validation. SOP No. HW-33A, Revision 1, dated September 2016. USEPA Region II.

USEPA, 2015. PCB Aroclor Data Validation. SOP No. HW-37A, Revision 0, dated July 2015. USEPA Region II.

USEPA, 2016. ICP-AES Data Validation. SOP No. HW-3a, Revision 1, dated September 2016. USEPA Region II.

USEPA, 2016. Mercury and Cyanide Data Validation. SOP No. HW-3c, Revision 1, dated September 2016. USEPA Region II.

USEPA, 2016. Pesticide Data Validation. SOP No. HW-36A, Revision 1, dated October 2016. USEPA Region II.

USEPA, 2016. Semivolatile Data Validation. SOP No. HW-35A, Revision 1, dated September 2016. USEPA Region II.

USEPA, 2016. Analysis of Volatile Organic Compounds in Air Contained in Canisters by Method TO-15, Revision 6, dated September 2016. USEPA Region II.

USEPA 2017. National Functional Guidelines for Superfund Organic Methods Data Review, Office of Superfund Remediation and Technology Innovation, EPA-540-R-2017-002, January 2017.

USEPA 2017b. National Functional Guidelines for Superfund Inorganic Methods Data Review, Office of Superfund Remediation and Technology Innovation, EPA-540-R-2017-001, January 2017

Attachment A

Resumes

WILLIAM BOHRER, PG

PROJECT GEOLOGIST

GEOLOGIST

Mr. Bohrer is an experienced geologist responsible for managing Langan's environmental standards and Health and Safety compliance for projects throughout New York City. His services include dissemination of environmental protocols, troubleshooting at project sites, in-house/field training, and maintenance of quality standards across the environmental discipline. Mr. Bohrer has a diverse and extensive background in geophysics, hydrogeology, mining and petroleum, and geotechnical engineering. He has developed conceptual site models for public, industrial and commercial facilities nationwide.

SELECTED PROJECTS

- NYU Poly – 122 Johnson Street, Brooklyn, NY
- Con Edison of New York at Governor's Island, NY, NY
- 535 4th Avenue, Brooklyn, NY
- 27 Wooster Street, New York, NY
- 42 West Street, Brooklyn, NY
- 455 West 19th Street, New York, NY
- Kings Plaza Mall, Brooklyn, NY
- Hudson Yards "Terra Firma," New York, NY
- Hudson Yards, Platform Special Inspection, New York, NY
- PSAC II, Bronx, NY
- 595-647 Smith Street, Brooklyn, NY
- New York University, 7-13 Washington Square North Investigation, New York, NY
- NYU 4 Washington Square Village, New York, NY
- 125th Street and Lenox Avenue, New York, NY
- Sullivan Street Development, New York, NY
- Hudson Crossing II, New York, NY
- New York Aquarium, Shark Tank & Animal Care Facility, Brooklyn, NY
- 209-219 Sullivan Street, New York, NY
- 261 Hudson Street, New York, NY
- 460 Washington Street, New York, NY
- 552 West 24th Street, New York, NY
- Brooklyn Bridge Park Pier 1, New York, NY
- International Leadership Bronx Charter School, Bronx, NY
- 203 East 92nd Street, New York, NY
- HighLine 28-29, New York, NY
- 539 Smith Street Bulkhead, Brooklyn, NY
- Willets Point, Corona, NY
- Plume Migration and Fracture Flow Aquifer Investigation, Brunswick, MD
- Plume Migration and Fracture Flow Aquifer Investigation, Fallston, MD
- Emergency Response Site Investigation & Remediation, Wappingers Falls, NY
- Emergency Response Site Investigation & Remediation, Allentown, PA

EDUCATION

Post Graduate Studies in Geophysics
Cornell University

B.S., Geology
Tufts University

PROFESSIONAL REGISTRATION

Professional Geologist (PG) in NY

40 Hour OSHA HazWOPER

OSHA Construction Safety & Health

OSHA Supervisory Certification
Credential (TWIC)

Transportation Worker Identification

NYS DEC- Protecting New York's Natural Resources with Better Construction Site Management

AFFILIATIONS

American Association of Petroleum Geologists

National Groundwater Association

Geological Society of America

LANGAN

MICHAEL D. BURKE, PG, CHMM, LEED AP

PRINCIPAL/VICE PRESIDENT

ENVIRONMENTAL ENGINEERING AND REMEDIATION

Mr. Burke is a geologist/environmental scientist whose practice involves site investigation and remediation, transactional due diligence, environmental site assessments, in-situ remedial technology, and manufactured gas plant (MGP) site characterization and remediation. His additional services include multi-media compliance audits, sub-slab depressurization system design, non-hazardous and hazardous waste management, emergency response, community air monitoring programs, environmental and geotechnical site investigations, and health and safety monitoring. He has experience with projects in the New York State Department of Environmental Conservation (NYSDEC) and New York State Brownfield Cleanup (NYS BCP) Programs; Inactive Hazardous Waste, and Spill Programs, and New York City Office of Environmental Remediation (OER) e-designated and New York City Voluntary Cleanup Program (NYC VCP) sites.

SELECTED PROJECTS

- 227-14 North Conduit Avenue, Industrial Wastewater Compliance, Jamaica, NY
- 420 Kent Avenue, NYS Brownfield Cleanup Program, Brooklyn, NY
- 572 Eleventh Avenue, NYC VCP, New York, NY
- Monian Site A, OER E-Designated Site, New York, NY
- 537 Sackett Street, Gowanus Canal Due Diligence/MGP Site, Brooklyn, NY
- ABC Blocks 25, 26 and 27, NYS Brownfield Cleanup Program Sites, Long Island City, NY
- 432 Rodney Street, NYS Brownfield Cleanup Program, Petroleum and Chlorinated Volatile Organic Compound Investigation and Remediation, Brooklyn, NY
- 787 Eleventh Avenue, NYS Brownfield Cleanup Program Site, New York, NY
- President Street at Gowanus Canal, NYS Brownfield Cleanup Program Site, Brooklyn, NY
- 22-36 Second Avenue at Gowanus Canal, NYS Brownfield Cleanup Program Site, Brooklyn, NY
- 563 Sacket Street, NYS Brownfield Cleanup Program Site, MGP Investigation, and Remediation, Brooklyn, NY
- 156-162 Perry Street, NYS Brownfield Cleanup Program Site, New York, NY
- Christopher and Weehawken Streets, NYS Brownfield Cleanup Program, New York, NY
- Phelps Dodge Block 2529 (Lots 40, 50, and 45), Inactive Hazardous Waste Disposal Site, Maspeth NY
- 42-50 24th Street, NYS Brownfield Cleanup Program Site, Long Island City, NY
- Storage Deluxe (163 6th Street), OER E-Designation Site, New York, NY

EDUCATION

M.S., Environmental Geology
Rutgers University

B.S., Geological Sciences
Rutgers University

B.S., Environmental Science
Rutgers University

PROFESSIONAL REGISTRATION

Professional Geologist (PG) in NY

Certified Hazardous Materials Manager – CHMM No. 15998

LEED Accredited Professional (LEED AP)

OSHA Certification for Hazardous Waste Site Supervisor

OSHA 29 CFR 1910.120 Certification for Hazardous Waste Operations and Emergency Response

NJDEP Certification for Community Noise Enforcement

AFFILIATIONS

New York State Council of Professional Geologists – Board of Directors

JOSEPH CONBOY

STAFF CHEMIST

ENVIRONMNETAL

Mr. Conboy has seven years of environmental chemistry, quality assurance, and environmental database management experience, with a current emphasis on validation of laboratory data for submittal to NJDEP via the New Jersey Data of Known Quality Protocols and to NYSDEC. Previous work experience includes performing validation of data for projects in USEPA Regions 2 and 3 while employing appropriate validation guidelines for each region, managing large data sets, updating appropriate regulatory limits, performing statistical evaluations, and preparing electronic data deliverables and report deliverables using the Earthsoft EQuIS database program, and acted as an intermediary between project managers, field staff, and laboratories. Mr. Conboy also has experience in field sampling techniques and maintains current OSHA HAZWOPER certification.

SELECTED PROJECTS

- 1400 Ferris, Bronx, NY – Completed validation of soil and groundwater data and prepared the Data Usability Summary Report for submittal to NYSDEC. USEPA Region II guidelines, with aide from National Functional Guidelines, were employed to perform validation of VOCs and SVOCs including 1,4-dioxane, and tangentially used based on professional judgment to perform validation of PFAS data.
- Broome Street Parking Lot, NY - Completed validation of waste characterization data and prepared the Data Usability Summary Report for submittal to NYSDEC. USEPA Region II guidelines, with aide from National Functional Guidelines, were employed to perform validation of VOCs, SVOCs, herbicides, PCBs, pesticides, metals including mercury, ignitability temperature, pH, reactive cyanide, reactive sulfide, cyanide, and hexavalent chromium. Toxicity characteristic leachate procedure extraction data for VOCs, SVOCs, herbicides, pesticides, metals, and mercury were also validated.
- 215 North 10th Street, Brooklyn, NY - Completed validation of soil and groundwater data and prepared the Data Usability Summary Report for submittal to NYSDEC. USEPA Region II guidelines, with aide from National Functional Guidelines, were employed to perform validation of VOC, SVOC, SVOC SIM, herbicide, PCB, pesticide, metals, mercury, cyanide, hexavalent chromium, trivalent chromium data.
- 35 Commercial Street, Brooklyn, NY - Completed validation of soil data and prepared the Data Usability Summary Report for submittal to NYSDEC. USEPA Region II guidelines, with aide from National Functional Guidelines, were employed to perform validation of VOC, SVOC, SVOC SIM, herbicide, PCB, pesticide, metals, mercury, cyanide, hexavalent chromium, trivalent chromium data, and tangentially used based on professional judgment to perform validation of PFAS data.

EDUCATION

B.Sc., Chemistry with a minor in Mathematics
Rowan University

CERTIFICATIONS & TRAINING

OSHA 40-Hour HAZWOPER 29 CFR 1910.120(e)(4) Certification

NJ Analytical Guidance and Data Usability Training

USEPA Data Validation Training

Earthsoft EQuIS Environmental Database Training

JASON J. HAYES, PE, LEED AP

PRINCIPAL/VICE PRESIDENT

ENVIRONMENTAL ENGINEERING

Mr. Hayes has experience in New York, New Jersey, Washington D.C., California, Washington, Oregon, Alaska, and Internationally. His experience includes Environmental Protection Agency (EPA), New York State (NYS) Brownfields applications, investigation, and remediation; New York City Department of Environmental Protection (NYCDEP) and New York City Office of Environmental Remediation (OER) E-designated site applications, investigations, and remediation. His expertise also includes Phase I and II Environmental Site Investigations and Assessments; contaminated building cleanup and demolition; Underground Storage Tank (UST) permitting, removal specifications, and closure reporting; soil vapor intrusion investigation and mitigation system design (depressurization systems, etc.); development of groundwater contaminant plume migration models; environmental analysis; and oversight, design and specification generation for remediation operations with contaminants of concern to include polychlorinated biphenyls (PCBs), solvents, mercury, arsenic, petroleum products, asbestos, mold and lead.

SELECTED PROJECTS

- NYCDPR Bushwick Inlet Park (Phase I ESA, Approvals for NYC E-Designation), Brooklyn, NY
- WCS New York Aquarium, Shark Tank and Animal Care Facility (Environmental Remediation), Coney Island, NY
- NYC School Construction Authority (PCB Remediation), Various Locations, New York, NY
- 28-29 High Line (Phase I ESA, Phase II ESI, and Environmental Remediation), New York, NY
- Georgetown Heating Plant (Phase II ESI and Remedial Design for Mercury Impacted Site), Washington D.C.
- 268 West Street (BCP Application, RI and RIWP), New York, NY
- Confidential Multiple Mixed-Use Tower Location (BCP Application, RI, Phase I ESA, and Phase II ESI), New York, NY
- Dock 72 at Brooklyn Navy Yard, (NYS Voluntary Cleanup Program), Brooklyn, NY
- 27-21 44th Drive (BCP Application, Remedial Investigation Phase I ESA, and Phase II ESI), Long Island City, NY
- Purves Street Development, BCP Application, RAWP, and Phase II ESI, Long Island City, NY
- 267-273 West 87th Street (BCP Application, Remedial Investigation, RIWP, RAWP), New York, NY
- International Leadership Charter School (Environmental Remediation), Bronx, NY
- West & Watts (BCP Application), New York, NY
- Hudson Yards Redevelopment (Phase I ESA and Phase II ESI), New York, NY
- 627 Smith Street (RI and Report), Brooklyn, NY

EDUCATION

M.S., Environmental Engineering
Columbia University

B.S., Chemistry, Environmental Toxicology (Business Administration minor)
Humboldt State University

PROFESSIONAL REGISTRATION

Professional Engineer (PE) in NY

LEED Accredited Professional (LEED AP)

Troxler Certification for Nuclear Densometer Training

OSHA 40-Hour HAZWOPER

OSHA HAZWOPER Site Supervisor

AFFILIATIONS

US Green Building Council, NYC Chapter, Communications Committee

Urban Land Institute (ULI), member

Commercial Real Estate Development Associations (NAIOP), member

LANGAN

- Gateway Center II Retail (Phase I ESA and Phase II ESI), Brooklyn, NY
- 261 Hudson Street (Phase I ESA, Phase II ESI, BCP, and RAWP), New York, NY
- Riverside Center, Building 2 (BCP, Phase I ESA and Phase II ESI), New York, NY
- New York Police Academy, (Sub-Slab Depressurization and Vapor Barrier System), College Point, NY
- Bronx Terminal Market (BCP, RIWP, RAWP, Phase I ESA and Phase II ESI), Bronx, NY
- Jacob Javits Convention Center (Phase I ESA and Phase II ESI), New York, NY
- Yankee Stadium Development Waterfront Park (NYSDEC Spill Sites), Bronx, NY
- Silvercup West (BCP, RIWP, RIR, RAWP, and RAA), Long Island City, NY
- 29 Flatbush, Tall Residential Building (Groundwater Studies, RIR and RAWP), Brooklyn, NY
- Gowanus Village I (BCP, RIWP and RIR), Brooklyn, NY
- Sullivan Street Hotel (Site Characterization Study and Owner Representation), New York, NY
- Riker's Island Co-Generation Plant (Soil and Soil Vapor Quality Investigations), Bronx, NY
- The Shops at Atlas Park (Sub-Slab Depressurization and Vapor Barrier Design), Glendale, NY
- Memorial Sloan-Kettering Cancer Center (Subsurface and Soil Vapor Intrusion Investigations), New York, NY
- Element West 59th Street (Oversight and Monitoring of Sub-Slab Depressurization and Vapor Barrier Systems), New York, NY
- Teterboro Airport (Delineation and Remedial Oversight of Petroleum-Contaminated Soils), Teterboro, NJ
- Proposed New York JETS Stadium (Phase I ESA), New York, NY
- Former Con Edison Manufactured Gas Plant Sites (Research Reports), New York, NY
- 7 World Trade Center (Endpoint Sampling and Final Closure Report), New York, NY
- Peter Cooper Village, Environmental Subsurface Investigations, New York, NY
- Greenpoint Terminal Market (BCP), Brooklyn, NY
- Confidential Location (Remediation for Mercury-Contaminated Site), New York, NY
- Confidential Location (Phase II ESI and Remedial Design for Mercury Impacted Site), Brooklyn, NY

NYC Brownfield Partnership, member

SELECTED PUBLICATIONS, REPORTS, AND PRESENTATIONS

NYC Mayor's Office of Environmental Remediation – Big Apple Brownfield Workshop – Presented on Soil Vapor Intrusion Remedies (e.g., SSD Systems, Vapor Barriers, Modified HVAC)

New York City Brownfield Partnership – Presented on environmental considerations and complications of the Hudson Yards Development

Waterfront Development Technical Course – Presented on Impacted Waterfront Planning Considerations

ELIZABETH MCCONNELL

SENIOR STAFF ENGINEER

ENVIRONMENTAL ENGINEERING

Ms. McConnell is an engineer with over five years of experience in the environmental industry. She has managed Voluntary Cleanup and Superfund sites as a regulator at the Texas Commission on Environmental Quality. In addition to her regulatory expertise, data analysis applied to site remediation was a focus of her graduate program, culminating in her thesis about forecasting behavior of groundwater plumes based on historical data. Her background combining geology, engineering, and data science enables her to take a comprehensive view of projects and communicate effectively with professionals from many disciplines.

SELECTED PROJECTS

- 4650 Broadway, New York, NY
- NYCEDC Manhattan Greenway – Harlem River, New York, NY
- 1257 57th Street, Brooklyn, NY
- 2447 Third Avenue, Bronx, NY
- 48-02 48th Avenue & 48-15 50th Avenue, Woodside, NY
- 19-41 42nd Street, Astoria, NY
- 432 Rodney Street, Brooklyn, NY
- 111 Willow Avenue, Bronx, NY
- 145 Wolcott Street, Brooklyn, NY
- 475 Bay Street, Staten Island, NY
- NYPD 116th Precinct, Rosedale, NY
- Former Plastic Factory Investigation, El Campo, TX*
- Former Gas Station Tank Removal, Hamlin, TX*
- Former Hospital Due Diligence, Kingsville, TX*
- Former Hotel Due Diligence, Texarkana, TX*

SELECTED PUBLICATIONS, REPORTS, AND PRESENTATIONS

McConnell, L.; Karimi Askarani, K.; Cognac, K.E.; Mack, E.E.; Bartlett, C.; Ronayne, M.J.; Blotevogel, J. (2022, manuscript in review) "*Forecasting Groundwater Contaminant Plume Development Using Statistical and Machine Learning Methods*." Groundwater Monitoring & Remediation

McConnell, E., Cognac, K., Ronayne, M., Askarani, K., Blotevogel, J., (2021), *"Applicability of Advanced Forecasting in Subsurface Remediation,*" American Geophysical Union Annual Conference (AGU), New Orleans, LA (hybrid) December 13-17

McConnell, E., Askarani, K., Blotevogel, J., (2021), "*Legacy Site Data Analysis,*" AGU Hydrology Days, Fort Collins, CO (virtual) March 30-31

McConnell, E., Askarani, K., Blotevogel, J., (2021), "*Advanced Analysis of Complex Historical Data Sets,*" The University Consortium for Field-

**Projects represent experience with a previous firm*

EDUCATION

M.S., Civil Engineering
Colorado State University

B.S., Environmental Science
The University of Texas

PROFESSIONAL REGISTRATION

40-Hour HAZWOPER

10-Hour OSHA

ASBOG Fundamentals of Geology and Practice of Geoscience

AFFILIATIONS

Society of Hispanic Professional Engineers (SHPE)

National Groundwater Association (NGWA)

Focused Groundwater Research Hydrology, Guelph, Ontario (virtual)
June 1-3

McConnell, E., Askarani, K., Blotevogel, J., (2020), "*Machine Learning Approaches for Complex Environmental Data Analysis,*" The University Consortium for Field-Focused Groundwater Research Hydrology, Guelph, Ontario (virtual) June 16-18

PAUL MCMAHON, PE

SENIOR PROJECT MANAGER

ENVIRONMENTAL ENGINEERING

Mr. McMahon is an environmental engineer working in the NY Metro area. He has experience with projects in the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP), Voluntary Cleanup Program (VCP) and Spill Programs, and New York City Office of Environmental Remediation (NYCOER) "E" Designated and VCP sites. His field experience includes conducting Phase II Environmental Site Investigations (ESI), remedial investigations, and indoor air quality analysis Investigations, and performing remediation oversight. Mr. McMahon's most recent experience includes the preparation of investigation reports and investigation work plans, management of NYSDEC BCP remediation projects and NYSDEC spill remediation projects, design of submembrane depressurization systems, and development of remediation work plans.

EDUCATION

M.E., Environmental Engineering
Manhattan College

B.S., Civil Engineering
Washington University in St. Louis

PROFESSIONAL REGISTRATION

Professional Engineer (PE) in NY

10-Hour OSHA

40-Hour OSHA HAZWOPER

SELECTED PROJECTS

- 55 Bank Street, NYSDEC BCP Site Remediation Project Management,
  White Plains, NY
- 23-01 42nd Road, NYSDEC BCP Site Remediation Oversight and Project Management, Long Island City, NY
- 23-10 Queens Plaza South, NYSDEC BCP Remedial Investigation Report, Interim Remedial Measures Work Plan, and Remediation Project Management, Long Island City, NY
- Brooklyn Navy Yard Dock 72, Management of Environmental Oversight in Accordance with NYSDEC VCP Site Management Plan, Brooklyn, NY
- Purves Street Development, Tall Residential Building, Phase II ESI/NYSDEC BCP Remedial Investigation, Remedial Action Work Plan, and Site Remediation Project Management, Long Island City, NY
- 27-21 44th Drive, NYSDEC BCP Site Remediation Project Management, Long Island City, NY
- NYU Tandon School of Engineering, NYSDEC Spill Investigation and Remediation Project Management, Brooklyn, NY
- Parcel B West, East Harlem, Affordable Housing Development, NYSDEC BCP Remedial Investigation, Remedial Action Work Plan, and Site Remediation Project Management, New York, NY
- 267-273 West 87th Street, NYSDEC BCP Remedial Investigation and Remedial Action Work Plan, and Site Remediation Project Management, New York, NY
- DuPont-Stauffer Landfill, NYSDEC Superfund Site, Site Management Plan Compliance, Newburgh, NY
- 190 Riverside Drive, Fuel Oil Spill Emergency Response, Site Investigation, and Remediation, New York, NY
- 473 President Street, NYSDEC BCP Remedial Investigation, Interim Remedial Measures, Project Management, Brooklyn, NY

- 175-225 3rd Street, NYSDEC BCP Remedial Investigation, Project Management, Brooklyn, NY
- 322 West 57th Street, Sheffield Building Oversight of Emergency Spill Response, New York, NY
- Hudson Yards Terra Firma and Hudson Yards Platform, Construction Oversight and Community Air Monitoring Program, New York, NY
- Columbia University Manhattanville Redevelopment, Remediation Oversight and Community Air Monitoring Program, New York, NY

MARLA MILLER, PE, BCEE

SENIOR PROJECT ENGINEER

ENVIRONMENTAL ENGINEERING

Ms. Miller has over 19 years of experience managing site characterization and remediation projects. She is a senior environmental engineer experienced in environmental permitting, industrial pretreatment, compliance monitoring, and water quality evaluation. She has a strong background in data validation, laboratory analyses, and sampling procedures for soil, water, and air matrices. Her expertise in data interpretation includes natural attenuation monitoring, petroleum hydrocarbon chromatography, and aqueous geochemistry.

SELECTED PROJECTS

Data Validation

- St. Joseph's Parish Redevelopment Data Quality Assessment (DQA) and Data Usability (DUE) preparation, New York, NY
- 175 – 225 3rd Street Data Usability Summary Report (DUSR), Brooklyn, NY
- 805 – 825 Atlantic Ave DUSR, Brooklyn, NY
- John Evans Superfund Site DUSR, Lansdale, PA
- 50 North Road (Nokia Chester), DQA and DUE preparation, Chester, NJ
- Data Validation/Data Management for Brownfields Site Assessment, Port St. Joe, FL*

Industrial Wastewater Pretreatment

- Industrial Wastewater Discharge Limit Development, Inland Empire Utilities Agency (IEUA), CA*
- Local Limits Study, Hopewell, VA*
- Local Limits Study, Mesa, AZ*
- Local Limits Development and Sewer Use Ordinance Development, Prescott, AZ*
- Implementation of Industrial Pretreatment Program, Prescott, AZ*
- Industrial Pretreatment Development, Queen Creek, AZ*
- Selenium Wastewater Treatment Options for Meat Packing Facility, Tolleson, AZ*
- Arizona Pollutant Discharge Elimination System (AZPDES) Permit Application Preparation, Phoenix, AZ
- Preparation of Sampling and Analysis Plan for Sub-Regional Operating Group (SROG) Local Limits Development, Phoenix and Surrounding Cities, AZ

EDUCATION

M.S., Environmental Engineering
University of California, Berkeley

B.S., Biology
Loyola Marymount University

PROFESSIONAL REGISTRATION

Professional Engineer (PE) in AZ

Board Certified Environmental Engineer (BCEE) – Hazardous Waste Management (09-10019)

CERTIFICATIONS

The Wastewater Treatment, Wastewater Collection, and Water Distribution Operator Certification

Grade 2
Water Treatment Operator Certification Grade 1

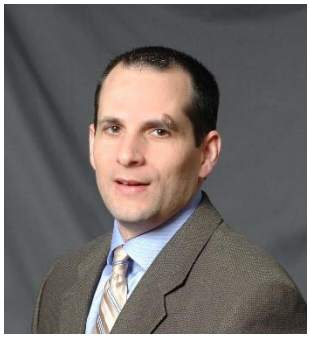
Backflow Tester Certification (AABP)

**Project completed prior to employment at LANGAN.*

ANTHONY MOFFA, JR., ASP, CHMM, COSS, CSP

ASSOCIATE
CORPORATE HEALTH AND SAFETY MANAGER

Anthony is Langan's Corporate Health & Safety Manager and is responsible for managing health and safety compliance in all Langan office locations. He has 28 years of experience in the health and safety field. He is responsible for ensuring compliance with all federal and state occupational health and safety laws and development and implementation of corporate health and safety policies. His responsibilities include reviewing and updating Langan's Corporate Health and Safety Program and assisting employees in the development of site specific Health & Safety Plans. He maintains and manages health and safety records for employees in all Langan office locations including medical evaluations, respirator fit testing, and Hazardous Waste Operations and Emergency Response training. He is also responsible for documentation and investigation of work-related injuries and incidents and sharing this information with employees to assist in the prevention of future incidents. He is also the chairman of the Corporate Health & Safety Committee and Health & Safety Leadership Team that meet periodically throughout the year. He is responsible for coordinating and providing health and safe training to Langan employees. He was formerly the Environmental, Health and Safety Coordinator at a chemical manufacturer. His experience included employee hazard communications, development of material safety data sheets for developed products, respirator fit testing and conducting required Occupational Health & Safety Association and Department of Transportation training.



EDUCATION

B.S., Physics
West Chester University

PROFESSIONAL REGISTRATION

Associate Safety Professional (ASP)

Certified Hazardous Material Manager (CHMM)

Certified Occupational Safety Specialist (COSS)

Certified Safety Professional (CSP)

AFFILIATIONS

Pennsylvania Chamber of Business & Industry

Chemical Council of New Jersey

New Jersey Business & Industry Association

American Society of Safety Professionals

MIMI RAYGORODETSKY

PRINCIPAL/VICE PRESIDENT

ENVIRONMENTAL ENGINEERING

Ms. Raygorodetsky sources and directs large, complex environmental remediation and redevelopment projects from the earliest stages of pre-development diligence, through the remediation/construction phase, to long-term operation and monitoring of remedial systems and engineering controls. She has a comprehensive understanding of federal, state and local regulatory programs and she uses this expertise to guide her clients through a preliminary cost benefit analysis to select the right program(s) given the clients' legal obligations, development desires and risk tolerance. She is particularly strong at integrating the requirements of selected programs and client development needs to develop and design targeted and streamlined diligence programs and remediation strategies. Ms. Raygorodetsky is also highly skilled in integrating remediation with construction on large urban waterfront projects, which tend to more complex than landside projects.

In 2022, Bisnow honored Ms. Raygorodetsky with the Women Leading Real Estate Award.

SELECTED PROJECTS

- 25 Kent Avenue, Due Diligence for Purchase of a Brownfields Location, Brooklyn, NY
- Ferry Point Waterfront Park, Redevelopment of a Former Landfill into a Park, Bronx, NY
- Battery Maritime Building (10 South Street), Phase I ESA, New York, NY
- Residential Development at 351-357 Broadway, Phase 1 ESA, New York, NY
- 450 Union Street, Phase I and Phase II Remediation (NYS DEC Brownfield Cleanup Program), New York, NY
- Echo Bay Center, NYS DEC Brownfield Cleanup Program, New York, NY
- 420 Kent Avenue, NYS DEC Brownfield Cleanup Program, Brooklyn, NY
- 416 Kent Avenue, NYS DEC Brownfield Cleanup Program, Brooklyn, NY
- 264 Fifth Avenue, Phase I ESA, New York, NY
- 262 Fifth Avenue, Phase I ESA, New York, NY
- ABC Blocks 25-27 (Mixed-Use Properties), Brownfield Cleanup Program, Long Island City, NY
- Residences at 100 Barrow Street, Phase I ESA, New York, NY
- Residences at 22-12 Jackson Avenue, Due Diligence for Building Sale, Long Island City, NY
- Residences at 2253-2255 Broadway, Phase I and Phase II Services, New York, NY
- Prince Point, Phase I ESA, Staten Island, NY
- 787 Eleventh Avenue (Office Building Renovation), Phase I UST Closure, New York, NY
- 218 Front Street/98 Gold Street, Planning and Brownfield Consulting, Brooklyn, NY

EDUCATION

B.A., Biology and Spanish Literature
Colby College

AFFILIATIONS

New York Women Executives in Real Estate (WX) - Board Member; Networking and Special Events Committee Co-Chair

New York Building Congress, Council of Industry Women - Committee Member

New York City Brownfield Partnership - Founding Member and President

NYC Office of Environmental Remediation Technical Task Force - Committee Member

New York League of Conservation Voters (NYLCV), Education Fund – State Board Member

- Mark JCH of Bensonhurst, Phase I and HazMat Renovation, Brooklyn, NY
- 39 West 23rd Street, E-Designation Brownfield, New York, NY
- 250 Water Street, Phase I and Phase II Property Transaction, New York, NY
- 27-19 44th Drive, Residential Redevelopment, Long Island City, NY
- 515 West 42nd Street, E-Designation, New York, NY
- 310 Meserole Street, Due Diligence Property Purchase, Brooklyn, NY
- Former Georgetown Heating Plant, HazMat and Phase I ESA, Washington D.C.
- 80-110 Flatbush Avenue, Brooklyn, NY
- 132 East 23rd Street, New York, NY
- 846 Sixth Avenue, New York, NY
- Greenpoint Landing, Remediation/Redevelopment, Brooklyn, NY
- 711 Eleventh Avenue, Due Diligence/Owner's Representative, New York, NY
- Brooklyn Bridge Park, Pier 1, Waste Characterization and Remediation, Brooklyn, NY
- Post-Hurricane Sandy Mold Remediation, Various Private Homes, Far Rockaway, NY
- Brooklyn Bridge Park, One John Street Development, Pre-Construction Due Diligence and Construction Administration, Brooklyn, NY
- 7 West 21st Street, Brownfields Remediation, New York, NY
- 546 West 44th Street, Brownfields Remediation, New York, NY
- Post-Hurricane Sandy Mold Remediation, Various Private Homes, Nassau and Suffolk Counties, Long Island, NY
- 55 West 17th Street, Brownfield Site Support, New York, NY
- Pratt Institute, 550 Myrtle Avenue Renovations, Environmental Remediation, Brooklyn, NY
- 42-02 Crescent Street Redevelopment, Phase I and II Environmental, Long Island City, NY
- IAC Building (555 West 18th Street), New York, NY
- Retirement Communities on100-acre Parcels in ME, NJ, MA, CT, and NJ
- 363-365 Bond Street/400 Carroll Street, Brooklyn, NY
- 160 East 22nd Street, New York, NY
- 110 Third Avenue, New York, NY
- Lycee Francais (East 76th Street & York Avenue), New York, NY
- Winchester Arms Munitions Factory, New Haven, CT

SELECTED PUBLICATIONS, REPORTS, AND PRESENTATIONS

Raygorodetsky, M., "The Perils and Pleasures of Urban Waterfront Development", Environmental Law In New York, February 3, 2020.

Attachment B

Laboratory Reporting Limits and Method Detection Limits

LANGAN

Analytical Method Information

Printed: 11/11/2022 3:32 pm

Polychlorinated Biphenyls (PCB) in Water (EPA 8082A)

Preservation: Cool 4°C

Container: 07_1000mL Amber Glass Cool to 4° C **Amount Required:** 1000 mL **Hold Time:** 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aroclor 1016	0.0500	0.0500 ug/L		50	40-140	50	40-120	30
Aroclor 1016 (1)								
Aroclor 1016 (2)								
Aroclor 1016 (3)								
Aroclor 1016 (4)								
Aroclor 1016 (5)								
Aroclor 1016 [2C]	0.0500	0.0500 ug/L		50	40-140	50	40-120	30
Aroclor 1016 (1) [2C]								
Aroclor 1016 (2) [2C]								
Aroclor 1016 (3) [2C]								
Aroclor 1016 (4) [2C]								
Aroclor 1016 (5) [2C]								
Aroclor 1221	0.0500	0.0500 ug/L						
Aroclor 1221 (1)								
Aroclor 1221 (2)								
Aroclor 1221 (3)								
Aroclor 1221 [2C]	0.0500	0.0500 ug/L						
Aroclor 1221 (1) [2C]								
Aroclor 1221 (2) [2C]								
Aroclor 1221 (3) [2C]								
Aroclor 1232	0.0500	0.0500 ug/L						
Aroclor 1232 (1)								
Aroclor 1232 (2)								
Aroclor 1232 (3)								
Aroclor 1232 (4)								
Aroclor 1232 (5)								
Aroclor 1232 [2C]	0.0500	0.0500 ug/L						
Aroclor 1232 (1) [2C]								
Aroclor 1232 (2) [2C]								
Aroclor 1232 (3) [2C]								
Aroclor 1232 (4) [2C]								
Aroclor 1232 (5) [2C]								
Aroclor 1242	0.0500	0.0500 ug/L						
Aroclor 1242 (1)								
Aroclor 1242 (2)								
Aroclor 1242 (3)								
Aroclor 1242 (4)								
Aroclor 1242 (5)								
Aroclor 1242 [2C]	0.0500	0.0500 ug/L						
Aroclor 1242 (1) [2C]								
Aroclor 1242 (2) [2C]								
Aroclor 1242 (3) [2C]								
Aroclor 1242 (4) [2C]								
Aroclor 1242 (5) [2C]								
Aroclor 1248	0.0500	0.0500 ug/L						
Aroclor 1248 (1)								
Aroclor 1248 (2)								
Aroclor 1248 (3)								
Aroclor 1248 (4)								
Aroclor 1248 (5)								
Aroclor 1248 [2C]	0.0500	0.0500 ug/L						
Aroclor 1248 (1) [2C]								
Aroclor 1248 (2) [2C]								
Aroclor 1248 (3) [2C]								

Analytical Method Information

(Continued)

Printed: 11/11/2022 3:32 pm

Polychlorinated Biphenyls (PCB) in Water (EPA 8082A) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	----Matrix Spike---- RPD	--Blank Spike / LCS-- %Rec	--Blank Spike / LCS-- RPD
Aroclor 1248 (4) [2C]								
Aroclor 1248 (5) [2C]								
Aroclor 1254	0.0500	0.0500 ug/L		50		50		30
Aroclor 1254 (1)								
Aroclor 1254 (2)								
Aroclor 1254 (3)								
Aroclor 1254 (4)								
Aroclor 1254 (5)								
Aroclor 1254 [2C]	0.0500	0.0500 ug/L						
Aroclor 1254 (1) [2C]								
Aroclor 1254 (2) [2C]								
Aroclor 1254 (3) [2C]								
Aroclor 1254 (4) [2C]								
Aroclor 1254 (5) [2C]								
Aroclor 1260	0.0500	0.0500 ug/L		50	40-140	50	40-120	30
Aroclor 1260 (1)								
Aroclor 1260 (2)								
Aroclor 1260 (3)								
Aroclor 1260 (4)								
Aroclor 1260 (5)								
Aroclor 1260 [2C]	0.0500	0.0500 ug/L		50	40-140	50	40-120	30
Aroclor 1260 (1) [2C]								
Aroclor 1260 (2) [2C]								
Aroclor 1260 (3) [2C]								
Aroclor 1260 (4) [2C]								
Aroclor 1260 (5) [2C]								
Aroclor 1262	0.0500	0.0500 ug/L						
Aroclor 1262 (1)								
Aroclor 1262 (2)								
Aroclor 1262 (3)								
Aroclor 1262 (4)								
Aroclor 1262 (5)								
Aroclor 1262 [2C]	0.0500	0.0500 ug/L						
Aroclor 1262 (1) [2C]								
Aroclor 1262 (2) [2C]								
Aroclor 1262 (3) [2C]								
Aroclor 1262 (4) [2C]								
Aroclor 1262 (5) [2C]								
Aroclor 1268	0.0500	0.0500 ug/L						
Aroclor 1268 (1)								
Aroclor 1268 (2)								
Aroclor 1268 (3)								
Aroclor 1268 (4)								
Aroclor 1268 (5)								
Aroclor 1268 [2C]	0.0500	0.0500 ug/L						
Aroclor 1268 (1) [2C]								
Aroclor 1268 (2) [2C]								
Aroclor 1268 (3) [2C]								
Aroclor 1268 (4) [2C]								
Aroclor 1268 (5) [2C]								
Total PCBs	0.0500	0.0500 ug/L						
Total PCBs [2C]	0.0500	0.0500 ug/L						
Surr: Tetrachloro-m-xylene			30-120					
Surr: Tetrachloro-m-xylene [2C]			30-120					
Surr: Decachlorobiphenyl			30-120					
Surr: Decachlorobiphenyl [2C]			30-120					

Analytical Method Information

Printed: 11/11/2022 3:30 pm

Pesticides, 8081 target list in Water (EPA 8081B)

Preservation: Cool 4°C

Container: 07_1000mL Amber Glass Cool to 4° C **Amount Required:** 1000 mL **Hold Time:** 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
4,4'-DDD	0.00400	0.00400 ug/L			30-150	20	40-140	20
4,4'-DDD [2C]	0.00400	0.00400 ug/L			30-150	20	40-140	20
4,4'-DDE	0.00400	0.00400 ug/L			30-150	20	40-140	20
4,4'-DDE [2C]	0.00400	0.00400 ug/L			30-150	20	40-140	20
4,4'-DDT	0.00400	0.00400 ug/L			30-150	20	40-140	20
4,4'-DDT [2C]	0.00400	0.00400 ug/L			30-150	20	40-140	20
Aldrin	0.00400	0.00400 ug/L			30-150	20	40-140	20
Aldrin [2C]	0.00400	0.00400 ug/L			30-150	20	40-140	20
alpha-BHC	0.00400	0.00400 ug/L			30-150	20	40-140	20
alpha-BHC [2C]	0.00400	0.00400 ug/L			30-150	20	40-140	20
alpha-Chlordane	0.00400	0.00400 ug/L			30-150	20	40-140	20
alpha-Chlordane [2C]	0.00400	0.00400 ug/L			30-150	20	40-140	20
beta-BHC	0.00400	0.00400 ug/L			30-150	20	40-140	20
beta-BHC [2C]	0.00400	0.00400 ug/L			30-150	20	40-140	20
Chlordane, total	0.0200	0.0200 ug/L				20		20
Chlordane, total [2C]	0.0200	0.0200 ug/L				20		20
delta-BHC	0.00400	0.00400 ug/L			30-150	20	40-140	20
delta-BHC [2C]	0.00400	0.00400 ug/L			30-150	20	40-140	20
Dieldrin	0.00200	0.00200 ug/L			30-150	20	40-140	20
Dieldrin [2C]	0.00200	0.00200 ug/L			30-150	20	40-140	20
Endosulfan I	0.00400	0.00400 ug/L			30-150	20	40-140	20
Endosulfan I [2C]	0.00400	0.00400 ug/L			30-150	20	40-140	20
Endosulfan II	0.00400	0.00400 ug/L			30-150	20	40-140	20
Endosulfan II [2C]	0.00400	0.00400 ug/L			30-150	20	40-140	20
Endosulfan sulfate	0.00400	0.00400 ug/L			30-150	20	40-140	20
Endosulfan sulfate [2C]	0.00400	0.00400 ug/L			30-150	20	40-140	20
Endrin	0.00400	0.00400 ug/L			30-150	20	40-140	20
Endrin aldehyde	0.0100	0.0100 ug/L			30-150	20	40-140	20
Endrin [2C]	0.00400	0.00400 ug/L			30-150	20	40-140	20
Endrin aldehyde [2C]	0.0100	0.0100 ug/L			30-150	20	40-140	20
Endrin ketone	0.0100	0.0100 ug/L			30-150	20	40-140	20
Endrin ketone [2C]	0.0100	0.0100 ug/L			30-150	20	40-140	20
gamma-BHC (Lindane)	0.00400	0.00400 ug/L			30-150	20	40-140	20
gamma-BHC (Lindane) [2C]	0.00400	0.00400 ug/L			30-150	20	40-140	20
gamma-Chlordane	0.0100	0.0100 ug/L			30-150	20	40-140	20
gamma-Chlordane [2C]	0.0100	0.0100 ug/L			30-150	20	40-140	20
Heptachlor	0.00400	0.00400 ug/L			30-150	20	40-140	20
Heptachlor [2C]	0.00400	0.00400 ug/L			30-150	20	40-140	20
Heptachlor epoxide	0.00400	0.00400 ug/L			30-150	20	40-140	20
Heptachlor epoxide [2C]	0.00400	0.00400 ug/L			30-150	20	40-140	20
Methoxychlor	0.00400	0.00400 ug/L			30-150	20	40-140	20
Methoxychlor [2C]	0.00400	0.00400 ug/L			30-150	20	40-140	20
Toxaphene	0.100	0.100 ug/L				20		20
Toxaphene [2C]	0.100	0.100 ug/L				20		20
Mirex	0.00400	0.00400 ug/L			30-150	20	40-140	20
Surr: Decachlorobiphenyl			30-150					
Surr: Decachlorobiphenyl [2C]			30-150					
Surr: Tetrachloro-m-xylene			30-150					
Surr: Tetrachloro-m-xylene [2C]			30-150					

Analytical Method Information

Printed: 11/11/2022 3:29 pm

Semi-Volatiles, 8270 - Comprehensive in Water (EPA 8270D)

Preservation: Cool 4°C

Container: 07_1000mL Amber Glass Cool to 4° C **Amount Required:** 1000 mL **Hold Time:** 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
1,1-Biphenyl	2.50	5.00 ug/L			40-140	20	21-102	20
1,2,4,5-Tetrachlorobenzene	2.50	5.00 ug/L			40-140	20	28-105	20
1,2,4-Trichlorobenzene	2.50	5.00 ug/L			31-92	20	35-91	20
1,2-Dichlorobenzene	2.50	5.00 ug/L			31-91	20	42-85	20
1,2-Diphenylhydrazine (as Azobenzene)	2.50	5.00 ug/L			40-140	20	16-137	20
1,3-Dichlorobenzene	2.50	5.00 ug/L			24-93	20	45-80	20
1,4-Dichlorobenzene	2.50	5.00 ug/L			26-95	20	42-82	20
2,3,4,6-Tetrachlorophenol	2.50	5.00 ug/L			30-130	20	30-130	20
2,4,5-Trichlorophenol	2.50	5.00 ug/L			44-96	20	36-112	20
2,4,6-Trichlorophenol	2.50	5.00 ug/L			39-107	20	41-107	20
2,4-Dichlorophenol	2.50	5.00 ug/L			38-99	20	43-92	20
2,4-Dimethylphenol	2.50	5.00 ug/L			10-116	20	25-92	20
2,4-Dinitrophenol	2.50	5.00 ug/L			10-168	20	10-149	20
2,4-Dinitrotoluene	2.50	5.00 ug/L			26-120	20	41-114	20
2,6-Dinitrotoluene	2.50	5.00 ug/L			28-118	20	49-106	20
2-Chloronaphthalene	2.50	5.00 ug/L			33-99	20	40-96	20
2-Chlorophenol	2.50	5.00 ug/L			25-106	20	35-84	20
2-Methylnaphthalene	2.50	5.00 ug/L			29-102	20	33-101	20
2-Methylphenol	2.50	5.00 ug/L			10-118	20	10-90	20
2-Nitroaniline	2.50	5.00 ug/L			48-99	20	31-122	20
2-Nitrophenol	2.50	5.00 ug/L			36-103	20	37-97	20
3- & 4-Methylphenols	2.50	5.00 ug/L			10-102	20	10-101	20
3,3-Dichlorobenzidine	2.50	5.00 ug/L			10-140	20	25-155	20
3-Nitroaniline	2.50	5.00 ug/L			10-169	20	29-128	20
4,6-Dinitro-2-methylphenol	2.50	5.00 ug/L			10-142	20	10-135	20
4-Bromophenyl phenyl ether	2.50	5.00 ug/L			35-109	20	38-116	20
4-Chloro-3-methylphenol	2.50	5.00 ug/L			20-117	20	28-101	20
4-Chloroaniline	2.50	5.00 ug/L			24-116	20	10-154	20
4-Chlorophenyl phenyl ether	2.50	5.00 ug/L			31-112	20	34-112	20
4-Nitroaniline	2.50	5.00 ug/L			24-143	20	15-143	20
4-Nitrophenol	2.50	5.00 ug/L			10-119	20	10-112	20
Acenaphthene	0.0500	0.0500 ug/L			17-132	20	24-114	20
Acenaphthylene	0.0500	0.0500 ug/L			13-124	20	26-112	20
Acetophenone	2.50	5.00 ug/L			40-140	20	47-92	20
Aniline	2.50	5.00 ug/L			10-133	20	10-107	20
Anthracene	0.0500	0.0500 ug/L			40-105	20	35-114	20
Atrazine	0.500	0.500 ug/L			40-140	20	43-101	20
Benzaldehyde	2.50	5.00 ug/L			40-140	20	17-117	20
Benzidine	10.0	20.0 ug/L				20		20
Benzo(a)anthracene	0.0500	0.0500 ug/L			23-141	20	38-127	20
Benzo(a)pyrene	0.0500	0.0500 ug/L			46-118	20	30-146	20
Benzo(b)fluoranthene	0.0500	0.0500 ug/L			22-133	20	36-145	20
Benzo(g,h,i)perylene	0.0500	0.0500 ug/L			10-126	20	10-163	20
Benzo(k)fluoranthene	0.0500	0.0500 ug/L			18-152	20	16-149	20
Benzoic acid	25.0	50.0 ug/L			10-162	20	30-130	20
Benzyl alcohol	2.50	5.00 ug/L			10-114	20	18-75	20
Benzyl butyl phthalate	2.50	5.00 ug/L			31-121	20	28-129	20
Bis(2-chloroethoxy)methane	2.50	5.00 ug/L			23-110	20	27-112	20
Bis(2-chloroethyl)ether	2.50	5.00 ug/L			10-132	20	24-114	20
Bis(2-chloroisopropyl)ether	2.50	5.00 ug/L			12-132	20	21-124	20
Bis(2-ethylhexyl)phthalate	0.500	0.500 ug/L			14-131	20	10-171	20
Caprolactam	2.50	5.00 ug/L			40-140	20	10-29	20
Carbazole	2.50	5.00 ug/L			10-169	20	49-116	20

Analytical Method Information

(Continued)

Printed: 11/11/2022 3:29 pm

Semi-Volatiles, 8270 - Comprehensive in Water (EPA 8270D) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	----Matrix Spike---- RPD	--Blank Spike / LCS-- %Rec	--Blank Spike / LCS-- RPD
Chrysene	0.0500	0.0500 ug/L			30-127	20	33-120	20
Dibenzo(a,h)anthracene	0.0500	0.0500 ug/L			10-131	20	10-149	20
Dibenzofuran	2.50	5.00 ug/L			37-103	20	42-105	20
Diethyl phthalate	2.50	5.00 ug/L			41-106	20	38-112	20
Dimethyl phthalate	2.50	5.00 ug/L			38-105	20	49-106	20
Di-n-butyl phthalate	2.50	5.00 ug/L			24-121	20	36-110	20
Di-n-octyl phthalate	2.50	5.00 ug/L			25-141	20	12-149	20
Diphenylamine	2.50	5.00 ug/L			40-140	25	40-140	20
Fluoranthene	0.0500	0.0500 ug/L			29-123	20	33-126	20
Fluorene	0.0500	0.0500 ug/L			20-133	20	28-117	20
Hexachlorobenzene	0.0200	0.0200 ug/L			24-120	20	27-120	20
Hexachlorobutadiene	0.500	0.500 ug/L			26-98	20	25-106	20
Hexachlorocyclopentadiene	2.50	5.00 ug/L			10-103	20	10-99	20
Hexachloroethane	0.500	0.500 ug/L			11-102	20	33-84	20
Indeno(1,2,3-cd)pyrene	0.0500	0.0500 ug/L			10-130	20	10-150	20
Isophorone	2.50	5.00 ug/L			19-113	20	29-115	20
Naphthalene	0.0500	0.0500 ug/L			26-104	20	30-99	20
Nitrobenzene	0.250	0.250 ug/L			25-107	20	32-113	20
N-Nitrosodimethylamine	0.500	0.500 ug/L			10-110	20	10-63	20
N-nitroso-di-n-propylamine	2.50	5.00 ug/L			16-127	20	36-118	20
N-Nitrosodiphenylamine	2.50	5.00 ug/L			46-116	20	27-145	20
Pentachlorophenol	0.250	0.250 ug/L			10-181	20	19-127	20
Phenanthrene	0.0500	0.0500 ug/L			29-121	20	31-112	20
Phenol	2.50	5.00 ug/L			10-107	20	10-37	20
Pyrene	0.0500	0.0500 ug/L			34-129	20	42-125	20
Pyridine	2.50	5.00 ug/L			10-73	20	10-46	20
Surr: SURR: 2-Fluorophenol			19.7-63.1					
Surr: SURR: Phenol-d5			10.1-41.7					
Surr: SURR: Nitrobenzene-d5			50.2-113					
Surr: SURR: 2-Fluorobiphenyl			39.9-105					
Surr: SURR: 2,4,6-Tribromophenol			39.3-151					
Surr: SURR: Terphenyl-d14			30.7-106					
ISTD: 1,4-Dichlorobenzene-d4								
ISTD: Naphthalene-d8								
ISTD: Acenaphthene-d10								
ISTD: Phenanthrene-d10								
ISTD: Chrysene-d12								
ISTD: Perylene-d12								

Analytical Method Information

Printed: 11/11/2022 3:28 pm

Volatile Organics, 8260 - Comprehensive in Water (EPA 8260C)

Preservation: Add HCl to pH<2; Store cool at 4°C

Container: 00_40mL Clear Vial (pre-pres.) HCl; Cool t **Amount Required:** 80 mL **Hold Time:** 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
1,1,1,2-Tetrachloroethane	0.20	0.50 ug/L			45-161	30	82-126	30
1,1,1-Trichloroethane	0.20	0.50 ug/L			70-146	30	78-136	30
1,1,2,2-Tetrachloroethane	0.20	0.50 ug/L			74-121	30	76-129	30
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.20	0.50 ug/L			21-217	30	54-165	30
1,1,2-Trichloroethane	0.20	0.50 ug/L			59-146	30	82-123	30
1,1-Dichloroethane	0.20	0.50 ug/L			54-146	30	82-129	30
1,1-Dichloroethylene	0.20	0.50 ug/L			44-165	30	68-138	30
1,1-Dichloropropylene	0.20	0.50 ug/L			82-134	30	83-133	30
1,2,3-Trichlorobenzene	0.20	0.50 ug/L			40-161	30	40-130	30
1,2,3-Trichloropropane	0.20	0.50 ug/L			74-127	30	77-128	30
1,2,4,5-Tetramethylbenzene	0.20	0.50 ug/L			27-190	30	85-140	30
1,2,4-Trichlorobenzene	0.20	0.50 ug/L			41-161	30	65-137	30
1,2,4-Trimethylbenzene	0.20	0.50 ug/L			72-129	30	82-132	30
1,2-Dibromo-3-chloropropane	0.20	0.50 ug/L			31-151	30	45-147	30
1,2-Dibromoethane	0.20	0.50 ug/L			75-125	30	83-124	30
1,2-Dichlorobenzene	0.20	0.50 ug/L			63-122	30	79-123	30
1,2-Dichloroethane	0.20	0.50 ug/L			68-131	30	73-132	30
1,2-Dichloropropane	0.20	0.50 ug/L			77-121	30	78-126	30
1,3,5-Trimethylbenzene	0.20	0.50 ug/L			69-126	30	80-131	30
1,3-Dichlorobenzene	0.20	0.50 ug/L			74-119	30	86-130	30
1,3-Dichloropropane	0.20	0.50 ug/L			77-119	30	81-125	30
1,4-Dichlorobenzene	0.20	0.50 ug/L			70-124	30	85-130	30
1,4-Dioxane	40	40 ug/L			10-310	30	10-349	30
2,2-Dichloropropane	0.20	0.50 ug/L			10-160	30	56-152	30
2-Butanone	0.20	0.50 ug/L			10-193	30	49-152	30
2-Chlorotoluene	0.20	0.50 ug/L			70-126	30	79-130	30
2-Hexanone	0.20	0.50 ug/L			53-133	30	51-146	30
4-Chlorotoluene	0.20	0.50 ug/L			69-124	30	79-128	30
4-Methyl-2-pentanone	0.20	0.50 ug/L			38-150	30	57-145	30
Acetone	1.0	2.0 ug/L			13-149	30	14-150	30
Acrolein	0.20	0.50 ug/L			10-195	30	10-153	30
Acrylonitrile	0.20	0.50 ug/L			37-165	30	51-150	30
Benzene	0.20	0.50 ug/L			38-155	30	85-126	30
Bromobenzene	0.20	0.50 ug/L			72-122	30	78-129	30
Bromochloromethane	0.20	0.50 ug/L			75-121	30	77-128	30
Bromodichloromethane	0.20	0.50 ug/L			70-129	30	79-128	30
Bromoform	0.20	0.50 ug/L			66-136	30	78-133	30
Bromomethane	0.20	0.50 ug/L			30-158	30	43-168	30
Carbon disulfide	0.20	0.50 ug/L			10-138	30	68-146	30
Carbon tetrachloride	0.20	0.50 ug/L			71-146	30	77-141	30
Chlorobenzene	0.20	0.50 ug/L			81-117	30	88-120	30
Chloroethane	0.20	0.50 ug/L			51-145	30	65-136	30
Chloroform	0.20	0.50 ug/L			80-124	30	82-128	30
Chloromethane	0.20	0.50 ug/L			16-163	30	43-155	30
cis-1,2-Dichloroethylene	0.20	0.50 ug/L			76-125	30	83-129	30
cis-1,3-Dichloropropylene	0.20	0.50 ug/L			58-131	30	80-131	30
Cyclohexane	0.20	0.50 ug/L			70-130	30	63-149	30
Dibromochloromethane	0.20	0.50 ug/L			71-129	30	80-130	30
Dibromomethane	0.20	0.50 ug/L			76-120	30	72-134	30
Dichlorodifluoromethane	0.20	0.50 ug/L			30-147	30	44-144	30
Ethyl Benzene	0.20	0.50 ug/L			72-128	30	80-131	30
Hexachlorobutadiene	0.20	0.50 ug/L			34-166	30	67-146	30
Isopropylbenzene	0.20	0.50 ug/L			66-139	30	76-140	30

Analytical Method Information

(Continued)

Printed: 11/11/2022 3:28 pm

Volatile Organics, 8260 - Comprehensive in Water (EPA 8260C) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	----Matrix Spike---- RPD	--Blank Spike / LCS-- %Rec	--Blank Spike / LCS-- RPD
Methyl acetate	0.20	0.50 ug/L			10-200	30	51-139	30
Methyl tert-butyl ether (MTBE)	0.20	0.50 ug/L			75-128	30	76-135	30
Methylcyclohexane	0.20	0.50 ug/L			70-130	30	72-143	30
Methylene chloride	1.0	2.0 ug/L			57-128	30	55-137	30
Naphthalene	1.0	2.0 ug/L			39-158	30	50-147	30
n-Butylbenzene	0.20	0.50 ug/L			61-138	30	79-132	30
n-Propylbenzene	0.20	0.50 ug/L			66-134	30	78-133	30
o-Xylene	0.20	0.50 ug/L			69-126	30	78-130	30
p- & m- Xylenes	0.50	1.0 ug/L			67-130	30	77-133	30
p-Diethylbenzene	0.20	0.50 ug/L			52-150	30	84-134	30
p-Ethyltoluene	0.20	0.50 ug/L			76-127	30	88-129	30
p-Isopropyltoluene	0.20	0.50 ug/L			64-137	30	81-136	30
sec-Butylbenzene	0.20	0.50 ug/L			53-155	30	79-137	30
Styrene	0.20	0.50 ug/L			69-125	30	67-132	30
tert-Butyl alcohol (TBA)	0.50	1.0 ug/L			10-130	30	25-162	30
tert-Butylbenzene	0.20	0.50 ug/L			65-139	30	77-138	30
Tetrachloroethylene	0.20	0.50 ug/L			64-139	30	82-131	30
Toluene	0.20	0.50 ug/L			76-123	30	80-127	30
trans-1,2-Dichloroethylene	0.20	0.50 ug/L			79-131	30	80-132	30
trans-1,3-Dichloropropylene	0.20	0.50 ug/L			55-130	30	78-131	30
trans-1,4-dichloro-2-butene	0.20	0.50 ug/L			25-155	30	63-141	30
Trichloroethylene	0.20	0.50 ug/L			53-145	30	82-128	30
Trichlorofluoromethane	0.20	0.50 ug/L			61-142	30	67-139	30
Vinyl acetate	0.20	0.50 ug/L			10-87	30	60-130	30
Vinyl Chloride	0.20	0.50 ug/L			31-165	30	58-145	30
Xylenes, Total	0.60	1.5 ug/L						
Chlorodifluoromethane (Freon 22)	0.20	0.50 ug/L				30		30
Surr: SURR: 1,2-Dichloroethane-d4			69-130					
Surr: SURR: Toluene-d8			81-117					
Surr: SURR: p-Bromofluorobenzene			79-122					
ISTD: Fluorobenzene								
ISTD: Chlorobenzene-d5								
ISTD: 1,2-Dichlorobenzene-d4								

Analytical Method Information

Printed: 11/12/2021 4:33 pm

Volatile Organics, NYSDEC Part 375 List in Soil (EPA 8260C)

Preservation: Cool 4°C

Container: 03_5035 Vial Set **Amount Required:** 20 g. **Hold Time:** 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
1,1,1-Trichloroethane	2.5	5.0 ug/kg			42-145	30	71-137	30
1,1,2,2-Tetrachloroethane	2.5	5.0 ug/kg			16-167	56	79-129	30
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	2.5	5.0 ug/kg			11-160	31	58-146	30
1,1-Dichloroethane	2.5	5.0 ug/kg			46-142	36	75-130	30
1,1-Dichloroethylene	2.5	5.0 ug/kg			30-153	31	64-137	30
1,2,3-Trichloropropane	2.5	5.0 ug/kg			38-155	48	81-126	30
1,2,4-Trichlorobenzene	2.5	5.0 ug/kg			10-151	52	80-141	30
1,2,4-Trimethylbenzene	2.5	5.0 ug/kg			10-170	242	84-125	30
1,2-Dichlorobenzene	2.5	5.0 ug/kg			10-147	52	85-122	30
1,2-Dichloroethane	2.5	5.0 ug/kg			48-133	32	71-133	30
1,3,5-Trimethylbenzene	2.5	5.0 ug/kg			10-150	62	82-126	30
1,3-Dichlorobenzene	2.5	5.0 ug/kg			10-144	51	84-124	30
1,3-Dichloropropane	2.5	5.0 ug/kg			43-142	36	83-123	30
1,4-Dichlorobenzene	2.5	5.0 ug/kg			10-160	52	84-124	30
1,4-Dioxane	50	100 ug/kg			10-191	196	10-228	30
2-Butanone	2.5	5.0 ug/kg			10-189	67	58-147	30
4-Methyl-2-pentanone	2.5	5.0 ug/kg			10-166	47	72-132	30
Acetone	5.0	10 ug/kg			10-196	150	36-155	30
Benzene	2.5	5.0 ug/kg			43-139	64	77-127	30
Carbon disulfide	2.5	5.0 ug/kg			10-131	36	10-136	30
Carbon tetrachloride	2.5	5.0 ug/kg			35-145	31	66-143	30
Chlorobenzene	2.5	5.0 ug/kg			21-154	32	86-120	30
Chloroethane	2.5	5.0 ug/kg			15-160	40	51-142	30
Chloroform	2.5	5.0 ug/kg			47-142	29	76-131	30
cis-1,2-Dichloroethylene	2.5	5.0 ug/kg			42-144	30	74-132	30
Ethyl Benzene	2.5	5.0 ug/kg			11-158	42	84-125	30
Isopropylbenzene	2.5	5.0 ug/kg			10-162	57	81-127	30
Methyl tert-butyl ether (MTBE)	2.5	5.0 ug/kg			42-152	47	74-131	30
Methylene chloride	5.0	10 ug/kg			28-151	49	57-141	30
Naphthalene	2.5	10 ug/kg			10-158	95	86-141	30
n-Butylbenzene	2.5	5.0 ug/kg			10-162	96	80-130	30
n-Propylbenzene	2.5	5.0 ug/kg			10-155	56	74-136	30
o-Xylene	2.5	5.0 ug/kg			10-158	51	83-123	30
p- & m- Xylenes	5.0	10 ug/kg			10-156	47	82-128	30
p-Isopropyltoluene	2.5	5.0 ug/kg			10-147	60	85-125	30
sec-Butylbenzene	2.5	5.0 ug/kg			10-157	56	83-125	30
tert-Butylbenzene	2.5	5.0 ug/kg			10-160	79	80-127	30
Tetrachloroethylene	2.5	5.0 ug/kg			30-167	33	80-129	30
Toluene	2.5	5.0 ug/kg			21-160	50	85-121	30
trans-1,2-Dichloroethylene	2.5	5.0 ug/kg			29-153	30	72-132	30
Trichloroethylene	2.5	5.0 ug/kg			24-169	30	84-123	30
Vinyl Chloride	2.5	5.0 ug/kg			12-160	35	52-130	30
Xylenes, Total	7.5	15 ug/kg						
Surr: SURR: 1,2-Dichloroethane-d4			77-125					
Surr: SURR: Toluene-d8			85-120					
Surr: SURR: p-Bromofluorobenzene			76-130			30		
ISTD: Fluorobenzene						30		30
ISTD: Chlorobenzene-d5								
ISTD: 1,2-Dichlorobenzene-d4								

Analytical Method Information

Printed: 11/12/2021 4:35 pm

Semi-Volatiles, NYSDEC Part 375 List in Soil (EPA 8270D)

Preservation: Cool 4°C

Container: 06_4 oz. WM Clear Glass Cool to 4° C **Amount Required:** 100 g **Hold Time:** 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
2,4,5-Trichlorophenol	20.9	41.7 ug/kg			10-127	30	27-118	30
2,4,6-Trichlorophenol	20.9	41.7 ug/kg			12-138	30	27-122	30
2,4-Dichlorophenol	20.9	41.7 ug/kg			16-144	30	23-133	30
2,4-Dinitrophenol	41.7	83.3 ug/kg			10-132	30	10-149	30
2,6-Dinitrotoluene	20.9	41.7 ug/kg			36-124	30	30-125	30
2-Chlorophenol	20.9	41.7 ug/kg			28-114	30	25-121	30
2-Methylnaphthalene	20.9	41.7 ug/kg			10-143	30	16-127	30
2-Methylphenol	20.9	41.7 ug/kg			10-160	30	10-146	30
2-Nitroaniline	41.7	83.3 ug/kg			33-122	30	24-126	30
2-Nitrophenol	20.9	41.7 ug/kg			12-127	30	17-129	30
3- & 4-Methylphenols	20.9	41.7 ug/kg			16-115	30	20-109	30
3-Nitroaniline	41.7	83.3 ug/kg			24-128	30	23-123	30
4-Chloroaniline	20.9	41.7 ug/kg			10-124	30	10-117	30
4-Nitrophenol	41.7	83.3 ug/kg			10-141	30	10-136	30
Acenaphthene	20.9	41.7 ug/kg			13-133	30	17-124	30
Acenaphthylene	20.9	41.7 ug/kg			25-125	30	16-124	30
Aniline	83.5	167 ug/kg			10-112	30	10-111	30
Anthracene	20.9	41.7 ug/kg			27-128	30	24-124	30
Benzo(a)anthracene	20.9	41.7 ug/kg			20-147	30	25-134	30
Benzo(a)pyrene	20.9	41.7 ug/kg			18-153	30	29-144	30
Benzo(b)fluoranthene	20.9	41.7 ug/kg			10-163	30	20-151	30
Benzo(g,h,i)perylene	20.9	41.7 ug/kg			10-157	30	10-153	30
Benzo(k)fluoranthene	20.9	41.7 ug/kg			10-157	30	10-148	30
Benzoic acid	20.9	41.7 ug/kg			10-130	30	10-116	30
Benzyl butyl phthalate	20.9	41.7 ug/kg			10-129	30	10-132	30
Bis(2-ethylhexyl)phthalate	20.9	41.7 ug/kg			10-138	30	10-141	30
Chrysene	20.9	41.7 ug/kg			18-133	30	24-116	30
Dibenzo(a,h)anthracene	20.9	41.7 ug/kg			10-146	30	17-147	30
Dibenzofuran	20.9	41.7 ug/kg			26-134	30	23-123	30
Diethyl phthalate	20.9	41.7 ug/kg			30-119	30	23-122	30
Dimethyl phthalate	20.9	41.7 ug/kg			34-120	30	28-127	30
Di-n-butyl phthalate	20.9	41.7 ug/kg			20-128	30	19-123	30
Di-n-octyl phthalate	20.9	41.7 ug/kg			10-133	30	10-132	30
Fluoranthene	20.9	41.7 ug/kg			10-155	30	36-125	30
Fluorene	20.9	41.7 ug/kg			12-150	30	16-130	30
Hexachlorobenzene	20.9	41.7 ug/kg			16-142	30	10-129	30
Indeno(1,2,3-cd)pyrene	20.9	41.7 ug/kg			10-155	30	10-155	30
Isophorone	20.9	41.7 ug/kg			14-127	30	14-131	30
Naphthalene	20.9	41.7 ug/kg			15-132	30	20-121	30
Nitrobenzene	20.9	41.7 ug/kg			18-125	30	20-121	30
Pentachlorophenol	20.9	41.7 ug/kg			10-160	30	10-143	30
Phenanthrene	20.9	41.7 ug/kg			10-151	30	24-123	30
Phenol	20.9	41.7 ug/kg			11-124	30	15-123	30
Pyrene	20.9	41.7 ug/kg			13-148	30	24-132	30
Benzo(a)pyrene (BAP) Equivalent-BAPE								
Surr: SURR: 2-Fluorophenol			20-108					
Surr: SURR: Phenol-d5			23-114					
Surr: SURR: Nitrobenzene-d5			22-108					
Surr: SURR: 2-Fluorobiphenyl			21-113					
Surr: SURR: 2,4,6-Tribromophenol			19-110					
Surr: SURR: Terphenyl-d14			24-116					
ISTD: 1,4-Dichlorobenzene-d4								
ISTD: Naphthalene-d8								

Analytical Method Information

Printed: 11/12/2021 4:35 pm

(Continued)

Semi-Volatiles, NYSDEC Part 375 List in Soil (EPA 8270D) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
ISTD: Acenaphthene-d10								
ISTD: Phenanthrene-d10								
ISTD: Chrysene-d12								
ISTD: Perylene-d12								

Semi-Volatiles, NYSDEC Part 375 List in Water (EPA 8270D)

Preservation: Cool 4°C

Container: 07_1000mL Amber Glass Cool to 4° C **Amount Required:** 1000 mL **Hold Time:** 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
2-Methylphenol	2.50	5.00 ug/L			10-118	20	10-90	20
3- & 4-Methylphenols	2.50	5.00 ug/L			10-102	20	10-101	20
Acenaphthene	0.0500	0.0500 ug/L			17-132	20	24-114	20
Acenaphthylene	0.0500	0.0500 ug/L			13-124	20	26-112	20
Anthracene	0.0500	0.0500 ug/L			40-105	20	35-114	20
Benzo(a)anthracene	0.0500	0.0500 ug/L			23-141	20	38-127	20
Benzo(a)pyrene	0.0500	0.0500 ug/L			46-118	20	30-146	20
Benzo(b)fluoranthene	0.0500	0.0500 ug/L			22-133	20	36-145	20
Benzo(g,h,i)perylene	0.0500	0.0500 ug/L			10-126	20	10-163	20
Benzo(k)fluoranthene	0.0500	0.0500 ug/L			18-152	20	16-149	20
Chrysene	0.0500	0.0500 ug/L			30-127	20	33-120	20
Dibenzo(a,h)anthracene	0.0500	0.0500 ug/L			10-131	20	10-149	20
Dibenzofuran	2.50	5.00 ug/L			37-103	20	42-105	20
Fluoranthene	0.0500	0.0500 ug/L			29-123	20	33-126	20
Fluorene	0.0500	0.0500 ug/L			20-133	20	28-117	20
Hexachlorobenzene	0.0200	0.0200 ug/L			24-120	20	27-120	20
Indeno(1,2,3-cd)pyrene	0.0500	0.0500 ug/L			10-130	20	10-150	20
Naphthalene	0.0500	0.0500 ug/L			26-104	20	30-99	20
Pentachlorophenol	0.250	0.250 ug/L			10-181	20	19-127	20
Phenanthrene	0.0500	0.0500 ug/L			29-121	20	31-112	20
Phenol	2.50	5.00 ug/L			10-107	20	10-37	20
Pyrene	0.0500	0.0500 ug/L			34-129	20	42-125	20
Surr: SURR: 2-Fluorophenol			19.7-63.1					
Surr: SURR: Phenol-d5			10.1-41.7					
Surr: SURR: Nitrobenzene-d5			50.2-113					
Surr: SURR: 2-Fluorobiphenyl			39.9-105					
Surr: SURR: 2,4,6-Tribromophenol			39.3-151					
Surr: SURR: Terphenyl-d14			30.7-106					
ISTD: 1,4-Dichlorobenzene-d4								
ISTD: Naphthalene-d8								
ISTD: Acenaphthene-d10								
ISTD: Phenanthrene-d10								
ISTD: Chrysene-d12								
ISTD: Perylene-d12								

Analytical Method Information

Printed: 11/11/2022 3:57 pm

Semi-Volatiles, 1,4-Dioxane 8270 SIM-Aqueous in Water (EPA 8270D SIM)

Preservation: Cool 4°C

Container: 09_500 mL Glass Amber **Amount Required:** 500 mL **Hold Time:** 7 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
1,4-Dioxane	0.200	0.300 ug/L		30	50-130	30	50-130	30
Surr: 1,4-Dioxane-d8	0.200		36.6-118					
1,2-Dichlorobenzene-d4								

Analytical Method Information

Printed: 11/12/2021 4:36 pm

Pesticides, NYSDEC Part 375 Target List in Soil (EPA 8081B)

Preservation: Cool 4°C

Container: 06_4 oz. WM Clear Glass Cool to 4° C **Amount Required:** 100 g **Hold Time:** 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
4,4'-DDD	0.330	0.330 ug/kg			30-150	30	40-140	30
4,4'-DDD [2C]	0.330	0.330 ug/kg			30-150	30	40-140	30
4,4'-DDE	0.330	0.330 ug/kg			30-150	30	40-140	30
4,4'-DDE [2C]	0.330	0.330 ug/kg			30-150	30	40-140	30
4,4'-DDT	0.330	0.330 ug/kg			30-150	30	40-140	30
4,4'-DDT [2C]	0.330	0.330 ug/kg			30-150	30	40-140	30
Aldrin	0.330	0.330 ug/kg			30-150	30	40-140	30
Aldrin [2C]	0.330	0.330 ug/kg			30-150	30	40-140	30
alpha-BHC	0.330	0.330 ug/kg			30-150	30	40-140	30
alpha-BHC [2C]	0.330	0.330 ug/kg			30-150	30	40-140	30
alpha-Chlordane	0.330	0.330 ug/kg			30-150	30	40-140	30
alpha-Chlordane [2C]	0.330	0.330 ug/kg			30-150	30	40-140	30
beta-BHC	0.330	0.330 ug/kg			30-150	30	40-140	30
beta-BHC [2C]	0.330	0.330 ug/kg			30-150	30	40-140	30
delta-BHC	0.330	0.330 ug/kg			30-150	30	40-140	30
delta-BHC [2C]	0.330	0.330 ug/kg			30-150	30	40-140	30
Dieldrin	0.330	0.330 ug/kg			30-150	30	40-140	30
Dieldrin [2C]	0.330	0.330 ug/kg			30-150	30	40-140	30
Endosulfan I	0.330	0.330 ug/kg			30-150	30	40-140	30
Endosulfan I [2C]	0.330	0.330 ug/kg			30-150	30	40-140	30
Endosulfan II	0.330	0.330 ug/kg			30-150	30	40-140	30
Endosulfan II [2C]	0.330	0.330 ug/kg			30-150	30	40-140	30
Endosulfan sulfate	0.330	0.330 ug/kg			30-150	30	40-140	30
Endosulfan sulfate [2C]	0.330	0.330 ug/kg			30-150	30	40-140	30
Endrin	0.330	0.330 ug/kg			30-150	30	40-140	30
Endrin [2C]	0.330	0.330 ug/kg			30-150	30	40-140	30
Endrin aldehyde	0.330	0.330 ug/kg			30-150	30	40-140	30
Endrin aldehyde [2C]	0.330	0.330 ug/kg			30-150	30	40-140	30
Endrin ketone	0.330	0.330 ug/kg			30-150	30	40-140	30
Endrin ketone [2C]	0.330	0.330 ug/kg			30-150	30	40-140	30
gamma-BHC (Lindane)	0.330	0.330 ug/kg			30-150	30	40-140	30
gamma-BHC (Lindane) [2C]	0.330	0.330 ug/kg			30-150	30	40-140	30
gamma-Chlordane	0.330	0.330 ug/kg			30-150	30	40-140	30
gamma-Chlordane [2C]	0.330	0.330 ug/kg			30-150	30	40-140	30
Heptachlor	0.330	0.330 ug/kg			30-150	30	40-140	30
Heptachlor [2C]	0.330	0.330 ug/kg			30-150	30	40-140	30
Heptachlor epoxide	0.330	0.330 ug/kg			30-150	30	40-140	30
Heptachlor epoxide [2C]	0.330	0.330 ug/kg			30-150	30	40-140	30
Methoxychlor	0.330	0.330 ug/kg			30-150	30	40-140	30
Methoxychlor [2C]	0.330	0.330 ug/kg			30-150	30	40-140	30
Parathion	1.32	1.32 ug/kg						
Surr: Decachlorobiphenyl			30-150					
Surr: Decachlorobiphenyl [2C]			30-150					
Surr: Tetrachloro-m-xylene			30-150					
Surr: Tetrachloro-m-xylene [2C]			30-150					

Analytical Method Information

Printed: 11/12/2021 4:38 pm

PCB, 8082 MASTER in Soil (EPA 8082A)

Preservation: Cool 4°C

Container: 06_8 oz. WM Clear Glass Cool to 4° C **Amount Required:** 100g **Hold Time:** 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Aroclor 1016	0.0167	0.0167 mg/kg		50	40-140	50	40-130	25
Aroclor 1016 (1)								
Aroclor 1016 (2)								
Aroclor 1016 (3)								
Aroclor 1016 (4)								
Aroclor 1016 (5)								
Aroclor 1016 [2C]	0.0167	0.0167 mg/kg						
Aroclor 1016 (1) [2C]								
Aroclor 1016 (2) [2C]								
Aroclor 1016 (3) [2C]								
Aroclor 1016 (4) [2C]								
Aroclor 1016 (5) [2C]								
Aroclor 1221	0.0167	0.0167 mg/kg						
Aroclor 1221 (1)								
Aroclor 1221 (2)								
Aroclor 1221 (3)								
Aroclor 1221 [2C]	0.0167	0.0167 mg/kg						
Aroclor 1221 (1) [2C]								
Aroclor 1221 (2) [2C]								
Aroclor 1221 (3) [2C]								
Aroclor 1232	0.0167	0.0167 mg/kg						
Aroclor 1232 (1)								
Aroclor 1232 (2)								
Aroclor 1232 (3)								
Aroclor 1232 (4)								
Aroclor 1232 (5)								
Aroclor 1232 [2C]	0.0167	0.0167 mg/kg						
Aroclor 1232 (1) [2C]								
Aroclor 1232 (2) [2C]								
Aroclor 1232 (3) [2C]								
Aroclor 1232 (4) [2C]								
Aroclor 1232 (5) [2C]								
Aroclor 1242	0.0167	0.0167 mg/kg						
Aroclor 1242 (1)								
Aroclor 1242 (2)								
Aroclor 1242 (3)								
Aroclor 1242 (4)								
Aroclor 1242 (5)								
Aroclor 1242 [2C]	0.0167	0.0167 mg/kg						
Aroclor 1242 (1) [2C]								
Aroclor 1242 (2) [2C]								
Aroclor 1242 (3) [2C]								
Aroclor 1242 (4) [2C]								
Aroclor 1242 (5) [2C]								
Aroclor 1248	0.0167	0.0167 mg/kg						
Aroclor 1248 (1)								
Aroclor 1248 (2)								
Aroclor 1248 (3)								
Aroclor 1248 (4)								
Aroclor 1248 (5)								
Aroclor 1248 [2C]	0.0167	0.0167 mg/kg						
Aroclor 1248 (1) [2C]								
Aroclor 1248 (2) [2C]								
Aroclor 1248 (3) [2C]								

Analytical Method Information

(Continued)

Printed: 11/12/2021 4:38 pm

PCB, 8082 MASTER in Soil (EPA 8082A) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	----Matrix Spike---- RPD	--Blank Spike / LCS-- %Rec	--Blank Spike / LCS-- RPD
Aroclor 1248 (4) [2C]								
Aroclor 1248 (5) [2C]								
Aroclor 1254	0.0167	0.0167 mg/kg		50		50		25
Aroclor 1254 (1)								
Aroclor 1254 (2)								
Aroclor 1254 (3)								
Aroclor 1254 (4)								
Aroclor 1254 (5)								
Aroclor 1254 [2C]	0.0167	0.0167 mg/kg						
Aroclor 1254 (1) [2C]								
Aroclor 1254 (2) [2C]								
Aroclor 1254 (3) [2C]								
Aroclor 1254 (4) [2C]								
Aroclor 1254 (5) [2C]								
Aroclor 1260	0.0167	0.0167 mg/kg		50	40-140	50	40-130	30
Aroclor 1260 (1)								
Aroclor 1260 (2)								
Aroclor 1260 (3)								
Aroclor 1260 (4)								
Aroclor 1260 (5)								
Aroclor 1260 [2C]	0.0167	0.0167 mg/kg						
Aroclor 1260 (1) [2C]								
Aroclor 1260 (2) [2C]								
Aroclor 1260 (3) [2C]								
Aroclor 1260 (4) [2C]								
Aroclor 1260 (5) [2C]								
Aroclor 1262	0.0167	0.0167 mg/kg						
Aroclor 1262 (1)								
Aroclor 1262 (2)								
Aroclor 1262 (3)								
Aroclor 1262 (4)								
Aroclor 1262 (5)								
Aroclor 1262 [2C]	0.0167	0.0167 mg/kg						
Aroclor 1262 (1) [2C]								
Aroclor 1262 (2) [2C]								
Aroclor 1262 (3) [2C]								
Aroclor 1262 (4) [2C]								
Aroclor 1262 (5) [2C]								
Aroclor 1268	0.0167	0.0167 mg/kg						
Aroclor 1268 (1)								
Aroclor 1268 (2)								
Aroclor 1268 (3)								
Aroclor 1268 (4)								
Aroclor 1268 (5)								
Aroclor 1268 [2C]	0.0167	0.0167 mg/kg						
Aroclor 1268 (1) [2C]								
Aroclor 1268 (2) [2C]								
Aroclor 1268 (3) [2C]								
Aroclor 1268 (4) [2C]								
Aroclor 1268 (5) [2C]								
Total PCBs	0.0167	0.0167 mg/kg						
Total PCBs [2C]	0.0167	0.0167 mg/kg						
Surr: Tetrachloro-m-xylene			30-120					
Surr: Tetrachloro-m-xylene [2C]			30-120					
Surr: Decachlorobiphenyl			30-120					
Surr: Decachlorobiphenyl [2C]			30-120					

Analytical Method Information

Printed: 11/12/2021 4:42 pm

Metals, NYSDEC Part 375 in Soil (EPA 6010D)

Preservation: Cool 4°C

Container: 06_4 oz. WM Clear Glass Cool to 4° C **Amount Required:** 50 **Hold Time:** 180 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Arsenic	1.50	1.50 mg/kg		35	75-125	35	80-120	
Barium	2.50	2.50 mg/kg		35	75-125	35	80-120	
Beryllium	0.0500	0.0500 mg/kg		35	75-125	35	80-120	
Cadmium	0.300	0.300 mg/kg		35	75-125	35	80-120	
Chromium	0.500	0.500 mg/kg		35	75-125	35	80-120	
Cobalt	0.400	0.400 mg/kg		35	75-125	35	80-120	
Copper	2.00	2.00 mg/kg		35	75-125	35	80-120	
Iron	25.0	25.0 mg/kg		35	75-125	35	80-120	
Lead	0.500	0.500 mg/kg		35	75-125	35	80-120	
Manganese	0.500	0.500 mg/kg		35	75-125	35	80-120	
Nickel	1.00	1.00 mg/kg		35	75-125	35	80-120	
Selenium	2.50	2.50 mg/kg		35	75-125	35	80-120	
Silver	0.500	0.500 mg/kg		35	75-125	35	80-120	
Vanadium	1.00	1.00 mg/kg		35	75-125	35	80-120	
Zinc	2.50	2.50 mg/kg		35	75-125	35	80-120	
Yttrium 371.029						35		

Metals, NYSDEC Part 375 in Water (EPA 6010D)

Preservation: Add HNO3 to pH<2, Cool 4°C

Container: 10_250mL Plastic pH <2 w/ HNO3 **Amount Required:** 200 **Hold Time:** 180 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Arsenic	0.0150	0.0150 mg/L		20	75-125	20	80-120	
Barium	0.0250	0.0250 mg/L		20	75-125	20	80-120	
Beryllium	0.000500	0.000500 mg/L		20	75-125	20	80-120	
Cadmium	0.00300	0.00300 mg/L		20	75-125	20	80-120	
Chromium	0.00500	0.00500 mg/L		20	75-125	20	80-120	
Cobalt	0.00400	0.00400 mg/L		20	75-125	20	80-120	
Copper	0.0200	0.0200 mg/L		20	75-125	20	80-120	
Iron	0.250	0.250 mg/L		20	75-125	20	80-120	
Lead	0.00500	0.00500 mg/L		20	75-125	20	80-120	
Manganese	0.00500	0.00500 mg/L		20	75-125	20	80-120	
Nickel	0.0100	0.0100 mg/L		20	75-125	20	80-120	
Selenium	0.0250	0.0250 mg/L		20	75-125	20	80-120	
Silver	0.00500	0.00500 mg/L		20	75-125	20	80-120	
Vanadium	0.0100	0.0100 mg/L		20	75-125	20	80-120	
Zinc	0.0250	0.0250 mg/L		20	75-125	20	80-120	
Yttrium 371.029								

Analytical Method Information

Printed: 11/12/2021 4:42 pm

Metals, NYSDEC Part 375 - ICP/MS in Soil (EPA 6020B)

Preservation: Cool 4°C

Container: 06_4 oz. WM Clear Glass Cool to 4° C **Amount Required:** 50 **Hold Time:** 180 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Arsenic	0.100	0.100 mg/kg		35	75-125		80-120	
Barium	0.100	0.100 mg/kg		35	75-125		80-120	
Beryllium	0.100	0.100 mg/kg		35	75-125		80-120	
Cadmium	0.0500	0.0500 mg/kg		35	75-125		80-120	
Chromium	0.100	0.100 mg/kg		35	75-125		80-120	
Cobalt	0.100	0.100 mg/kg		35	75-125		80-120	
Copper	0.100	0.100 mg/kg		35	75-125		80-120	
Iron	1.00	1.00 mg/kg		35	75-125	35	80-120	
Lead	0.100	0.100 mg/kg		35	75-125		80-120	
Manganese	0.100	0.100 mg/kg		35	75-125		80-120	
Nickel	0.100	0.100 mg/kg		35	75-125		80-120	
Selenium	0.100	0.100 mg/kg		20	75-125		80-120	
Silver	0.100	0.100 mg/kg		35	75-125		80-120	
Vanadium	0.100	0.100 mg/kg		35	75-125		80-120	
Zinc	0.100	0.100 mg/kg		35	75-125		80-120	

Metals, NYSDEC Part 375 - ICP/MS in Water (EPA 6020B)

Preservation: Add HNO3 to pH<2, Cool 4°C

Container: 10_250mL Plastic pH <2 w/ HNO3 **Amount Required:** 200 **Hold Time:** 180 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Arsenic	1.00	1.00 ug/L		20	75-125	20	80-120	
Barium	1.00	1.00 ug/L		20	75-125	20	80-120	
Beryllium	0.300	0.300 ug/L		20	75-125	20	80-120	
Cadmium	0.500	0.500 ug/L		20	75-125	20	80-120	
Chromium	1.00	1.00 ug/L		20	75-125	20	80-120	
Cobalt	1.00	1.00 ug/L		20	75-125	20	80-120	
Copper	1.00	1.00 ug/L		20	75-125	20	80-120	
Iron	10.0	10.0 ug/L		20	75-125	20	80-120	
Lead	1.00	1.00 ug/L		20	75-125	20	80-120	
Manganese	1.00	1.00 ug/L		20	75-125	20	80-120	
Nickel	1.00	1.00 ug/L		20	75-125	20	80-120	
Selenium	1.00	1.00 ug/L		20	75-125	20	80-120	
Silver	1.00	1.00 ug/L		20	75-125	20	80-120	
Vanadium	1.00	1.00 ug/L		20	75-125	20	80-120	
Zinc	1.00	1.00 ug/L		20	75-125	20	80-120	

Analytical Method Information

Printed: 11/12/2021 4:39 pm

Cyanide, Total in Soil (EPA 9014/9010C)

Preservation: Cool 4°C

Container: 06_4 oz. WM Clear Glass Cool to 4° C **Amount Required:** 10 g. **Hold Time:** 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Cyanide, total	0.500	0.500 mg/kg		15	79.6-107		72.9-112	

Cyanide, Total in Water (SM 4500 CN C/E)

Preservation: Dechlorinate; NaOH to pH>10

Container: 10_250 mL Plastic NAOH pH>10 Cool 4° C **Amount Required:** 100 **Hold Time:** 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Cyanide, total	0.0100	0.0100 mg/L		15	79-105		76.2-107	

Analytical Method Information

Printed: 11/12/2021 4:44 pm

Chromium, Hexavalent in Soil (EPA 7196A)

Preservation: Cool 4°C

Container: 06_4 oz. WM Clear Glass Cool to 4° C **Amount Required:** 25 g, **Hold Time:** 30 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Chromium, Hexavalent	0.350	0.500 mg/kg		35	75-125		18.8-206	

Chromium, Hexavalent in Water (EPA 7196A)

Preservation: Cool 4°C

Container: 10_250mL Plastic Cool to 4° C **Amount Required:** 100 mL **Hold Time:** 1 day

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Chromium, Hexavalent	0.0100	0.0100 mg/L		20	75-125		80-120	20

Analytical Method Information

Printed: 11/12/2021 4:47 pm

Chromium, Trivalent in Soil (Calculation)

Preservation: Cool 4°C

Container: 06_4 oz. WM Clear Glass Cool to 4° C **Amount Required:** 25 g, **Hold Time:** 30 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Chromium, Trivalent	0.250	0.500 mg/kg						

Chromium, Trivalent in Water (Calculation)

Preservation: Cool 4°C

Container: 10_250mL Plastic Cool to 4° C **Amount Required:** 100 mL **Hold Time:** 30 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
Chromium, Trivalent	0.00800	0.0100 mg/L						

Analytical Method Information

Printed: 11/12/2021 4:49 pm

Semi-Volatiles, 1,4-Dioxane 8270 SIM-Soil in Soil (EPA 8270D SIM)

Preservation: Cool 4°C

Container: 06_4 oz. WM Clear Glass Cool to 4° C **Amount Required:** 250 mL **Hold Time:** 14 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
1,4-Dioxane	3.70	20.0 ug/kg		30	40-130	30	40-130	30
Surr: 1,4-Dioxane-d8	4.60		39-127.5					
1,2-Dichlorobenzene-d4								

Analytical Method Information

Printed: 10/13/2022 12:17 pm

Volatile Organics, EPA TO15 Full List in Air (EPA TO-15)

Preservation: None Required

Container: 12_Summa Canister, 6 Liter **Amount Required:** 6 L **Hold Time:** 30 days

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
1,1,1,2-Tetrachloroethane	0.059	0.10 ppbv		25			70-130	
1,1,1-Trichloroethane	0.084	0.10 ppbv		25			70-130	
1,1,2,2-Tetrachloroethane	0.048	0.10 ppbv		25			70-130	
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	0.096	0.10 ppbv		25			70-130	
1,1,2-Trichloroethane	0.043	0.10 ppbv		25			70-130	
1,1-Dichloroethane	0.083	0.10 ppbv		25			70-130	
1,1-Dichloroethylene	0.025	0.025 ppbv		25			70-130	
1,2,4-Trichlorobenzene	0.079	0.10 ppbv		25			70-130	
1,2,4-Trimethylbenzene	0.060	0.10 ppbv		25			70-130	
1,2-Dibromoethane	0.040	0.10 ppbv		25			70-130	
1,2-Dichlorobenzene	0.065	0.10 ppbv		25			70-130	
1,2-Dichloroethane	0.062	0.10 ppbv		25			70-130	
1,2-Dichloropropane	0.051	0.10 ppbv		25			70-130	
1,2-Dichlorotetrafluoroethane	0.098	0.10 ppbv		25			70-130	
1,3,5-Trimethylbenzene	0.054	0.10 ppbv		25			70-130	
1,3-Butadiene	0.038	0.30 ppbv		25			70-130	
1,3-Dichlorobenzene	0.067	0.10 ppbv		25			70-130	
1,3-Dichloropropane	0.031	0.10 ppbv		25			70-130	
1,4-Dichlorobenzene	0.060	0.10 ppbv		25			70-130	
1,4-Dioxane	0.083	0.20 ppbv		25			70-130	
2-Butanone	0.059	0.10 ppbv		25			70-130	
2-Hexanone	0.041	0.20 ppbv		25			70-130	
3-Chloropropene	0.076	0.50 ppbv		25			70-130	
4-Methyl-2-pentanone	0.085	0.10 ppbv		25			70-130	
Acetone	0.098	0.20 ppbv		25			70-130	
Acrolein	0.097	0.10 ppbv		25			70-130	
Acrylonitrile	0.079	0.10 ppbv		25			70-130	
Benzene	0.099	0.10 ppbv		25			70-130	
Benzyl chloride	0.054	0.10 ppbv		25			70-130	
Bromodichloromethane	0.034	0.10 ppbv		25			70-130	
Bromoform	0.049	0.10 ppbv		25			70-130	
Bromomethane	0.098	0.10 ppbv		25			70-130	
Carbon disulfide	0.094	0.10 ppbv		25			70-130	
Carbon tetrachloride	0.025	0.025 ppbv		25			70-130	
Chlorobenzene	0.056	0.10 ppbv		25			70-130	
Chloroethane	0.064	0.10 ppbv		25			70-130	
Chloroform	0.092	0.10 ppbv		25			70-130	
Chloromethane	0.049	0.10 ppbv		25			70-130	
cis-1,2-Dichloroethylene	0.025	0.025 ppbv		25			70-130	
cis-1,3-Dichloropropylene	0.041	0.10 ppbv		25			70-130	
Cyclohexane	0.086	0.10 ppbv		25			70-130	
Dibromochloromethane	0.049	0.10 ppbv		25			70-130	
Dichlorodifluoromethane	0.090	0.10 ppbv		25			70-130	
Ethanol	0.10	0.10 ppbv		25			70-130	
Ethyl acetate	0.068	0.20 ppbv		25			70-130	
Ethyl Benzene	0.069	0.10 ppbv		25			70-130	
Hexachlorobutadiene	0.085	0.10 ppbv		25			70-130	
Isopropanol	0.18	0.20 ppbv		25			70-130	
Isopropylbenzene	0.059	0.10 ppbv		25			70-130	
Methyl Methacrylate	0.031	0.10 ppbv		25			70-130	
Methyl tert-butyl ether (MTBE)	0.097	0.10 ppbv		25			70-130	
Methylene chloride	0.070	0.20 ppbv		25			70-130	
Naphthalene	0.097	0.20 ppbv		25			70-130	

Analytical Method Information

Printed: 10/13/2022 12:17 pm

(Continued)

Volatile Organics, EPA TO15 Full List in Air (EPA TO-15) (Continued)

Analyte	MDL	Reporting Limit	Surrogate %Rec	Duplicate RPD	----Matrix Spike---- %Rec	RPD	--Blank Spike / LCS-- %Rec	RPD
n-Butylbenzene	0.054	0.10 ppbv		25			70-130	
n-Heptane	0.043	0.10 ppbv		25			70-130	
n-Hexane	0.080	0.10 ppbv		25			70-130	
n-Propylbenzene	0.093	0.10 ppbv		25			70-130	
o-Xylene	0.024	0.10 ppbv		25			70-130	
p- & m- Xylenes	0.14	0.20 ppbv		25			70-130	
p-Ethyltoluene	0.076	0.10 ppbv		25			70-130	
p-Isopropyltoluene	0.030	0.10 ppbv		25			70-130	
Propylene	0.042	0.10 ppbv		25			70-130	
sec-Butylbenzene	0.056	0.10 ppbv		25			70-130	
Styrene	0.059	0.10 ppbv		25			70-130	
tert-Butylbenzene	0.051	0.10 ppbv		25			70-130	
Tetrachloroethylene	0.049	0.10 ppbv		25			70-130	
Tetrahydrofuran	0.053	0.20 ppbv		25			70-130	
Toluene	0.059	0.10 ppbv		25			70-130	
trans-1,2-Dichloroethylene	0.079	0.10 ppbv		25			70-130	
trans-1,3-Dichloropropylene	0.092	0.10 ppbv		25			70-130	
Trichloroethylene	0.025	0.025 ppbv		25			70-130	
Trichlorofluoromethane (Freon 11)	0.076	0.10 ppbv		25			70-130	
Vinyl acetate	0.062	0.10 ppbv		25			70-130	
Vinyl bromide	0.096	0.10 ppbv		25			70-130	
Vinyl Chloride	0.044	0.050 ppbv		25			70-130	
Xylenes, Total	0.17	0.30 ppbv						
Tentatively Identified Compounds								
Bromochloromethane								
ISTD: 1,4-Difluorobenzene								
ISTD: d5-Chlorobenzene								

Attachment C

Analytical Methods/Quality Assurance Summary Table

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ATTACHMENT C

ANALYTICAL METHODS/QUALITY ASSURANCE SUMMARY TABLE

Matrix Type	Field Parameters	Laboratory Parameters	Analytical Methods	Sample Preservation	Sample Container Volume and Type	Sample Hold Time	Field Duplicate Samples	Equipment Blank Samples	Trip Blank Samples	Ambient Air Samples	MS/MSD Samples
Groundwater	Temperature, Turbidity, pH, ORP, Conductivity	Part 375 + TCL VOCs	EPA 8260C	Cool to 4°C; HCl to pH <2;no headspace	Three 40-mL VOC vials with Teflon®-lined cap	Analyze within 14 days of collection	1 per 20 samples (minimum 1)	1 per 20 samples (minimum 1)	1 per shipment of VOC samples	NA	1 per 20 samples
		1,4-dioxane	8270D SIM isotope dilution	Cool to 4°C	One 1-Liter Amber Glass	7 days to extract, 40 days after extraction to analysis					
		Part 375 + TCL SVOCs	EPA 8270D	Cool to 4°C	Two 1-Liter Amber Glass	7 days to extract, 40 days after extraction to analysis					
		Part 375 + TAL Metals	EPA 6020B, EPA 7470A	Cool to 4°C; HNO_3	250 ml plastic	6 months, except Mercury 28 days					
		Hexavalent Chromium	EPA 7196A	Cool to 4°C	250 ml plastic	24 hours					
		Cyanide	EPA 9010C/9012B	Cool to 4°C; NaOH plus 0.6g ascorbic acid	250 ml plastic	14 days					
		Part 375 + TCL Herbicides	EPA 8151A	Cool to 4°C	Two 1-Liter Amber Glass	7 days to extract, 40 days after extraction to analysis					
		Part 375 + TCL Pesticides	EPA 8081B	Cool to 4°C	Two 1-Liter Amber Glass for Pesticides/PCB	7 days to extract, 40 days after extraction to analysis					
		Part 375 + TCL PCBs	EPA 8082A	Cool to 4°C		7 days to extract, 40 days after extraction to analysis					
		Per- and polyfluoroalykl substances (PFAS)	Per- and polyfluoroalykl substances (PFAS)	EPA 1633	Cool to 0-6°C	One 250 mL high density polyethylene (HDPE) bottle	1 per 20 samples (minimum 1)	1 per 20 samples (minimum 1)	NA	NA	1 per 20 samples (minimum 1)

ATTACHMENT C

ANALYTICAL METHODS/QUALITY ASSURANCE SUMMARY TABLE

Matrix Type	Field Parameters	Laboratory Parameters	Analytical Methods	Sample Preservation	Sample Container Volume and Type	Sample Hold Time	Field Duplicate Samples	Equipment Blank Samples	Trip Blank Samples	Ambient Air Samples	MS/MSD Samples
Soil	Total VOCs via PID	Part 375 + TCL VOCs	EPA 8260C	Cool to 4°C	Two 40-ml VOC vials with 5ml H_2O, one with MeOH or 3 En Core Samplers (separate container for % solids)	48 hours after sampling if samples are not frozen to -7° C, 14 days after extraction to analysis	1 per 20 samples (minimum 1)	1 per 20 samples (minimum 1)	1 per shipment of VOC samples	NA	1 per 20 samples
		Part 375 + TCL SVOCs	EPA 8270D	Cool to 4°C	4 oz. amber glass jar	14 days extract, 40 days after extraction to analysis			NA		
		Part 375 + TAL Metals	EPA 6010D, EPA 7471B, EPA 7196A, EPA 9010C/9012B	Cool to 4°C	2 oz. amber glass jar	6 months, except mercury 28 days					
		Hexavalent Chromium	EPA 7196A	Cool to 4°C	4 oz. amber glass jar	30 days					
		Cyanide	EPA 9010C/9012B	Cool to 4°C	8 oz. amber glass jar	14 days					
		Part 375 + TCL Pesticides	EPA 8081B	Cool to 4°C	4 oz. amber glass jar	14 days extract, 40 days after extraction to analysis					
		Part 375 + TCL Herbicides	EPA 8151A	Cool to 4°C	8 oz. amber glass jar	14 days					
		Part 375 + TCL PCBs	EPA 8082A	Cool to 4°C	4 oz. amber glass jar	14 days extract, 40 days after extraction to analysis					
		Per- and polyfluoroalykl substances (PFAS)	EPA 1633	Cool to 0-6°C	Three 250 mL high density polyethylene (HDPE) bottles	90 days if frozen at the lab - 20°C; Otherwise 28 days					
Soil Vapor	Total VOCs and Methane with MultiGas Meter	TO-15 Listed VOCs	TO-15	Ambient Temperature	6-Liter Summa Canister	Analyze within 30 days of collection	1 per 20 samples (minimum 1)	NA	NA	1 per 10 samples (minimum 1)	NA
Ambient Air	Total VOCs via PID	TO-15 Listed VOCs	TO-15	Ambient Temperature	6-Liter Summa Canister	Analyze within 30 days of collection	1 per 20 samples (minimum 1)	NA	NA	1 per 10 samples (minimum 1)	NA

Notes:
1. PID - Photoionization Detector
2. VOC - Volatile organic compound
3. EPA - Environmental Protection Agency
4. TCL - Target compound list
5. TAL - Target analyte list
6. ORP - Oxidation-reduction-potential
7. NA - Not applicable

Attachment D

Sample Nomenclature

SOP #01 – Sample Nomenclature

INTRODUCTION

The Langan Environmental Group conducts an assortment of site investigations where samples (Vapor, Solids, and Aqueous) are collected and submitted to analytical laboratories for analysis. The results of which are then evaluated and entered into a data base allowing quick submittal to the state regulatory authority (New York State Division of Environmental Conservation [NYSDEC]). In addition, Langan is linking their data management system to graphic and analytical software to enable efficient evaluation of the data as well as creating client-ready presentational material.

SCOPE AND APPLICATION

This Standard Operating Procedure (SOP) is applicable to the general framework for labeling vapor, solid (soil) and aqueous (groundwater) samples that will be submitted for laboratory analysis. The nomenclature being introduced is designed to meet the NYSDEC EQuIS standard and has been incorporated into Langan software scripts to assist project personnel in processing the data. While this SOP is applicable to all site investigation; unanticipated conditions may arise which may require considerable flexibility in complying with this SOP. Therefore, guidance provided in this SOP is presented in terms of general steps and strategies that should be applied; but deviation from this SOP must be reported to the Project Manager (PM) immediately.

GENERAL SAMPLE IDENTIFICATION CONSIDERATIONS

Sample Labels

All sample ware must have a label. Recall that when you are using the Encore™ samples (see below); they are delivered in plastic lined foil bags. You are to label the bags[1]:

All other samples containers including Terra Cores™ must be labeled with laboratory provided self-adhesive labels.

Quick Breakdown of Sample Format

The general format for sample nomenclature is:

[1]Both Alpha and York laboratories permit the combining of the three Encore™ into a single bag. This may not be appropriate for all laboratories so please confirm with the labs themselves

LLNN_ID

Where

LL is a grouping of two (2) to four (4) letters signifying the sample media source. In older nomenclature SOPs this portion of the sample identification is commonly referred to as the *Sample Investigation Code*

NN represents a two digit number identifying the specific sample location or sample sequence number

_ ***(underscore)*** is required between the sample lettering and numeric identification and additional modifying data that determines the date of sampling or the depth of the sample interval

ID is a modifier specific to the sample type media (depth of soil sample or date of groundwater sample)

LL – Sample Investigation Code

Langan has devised a list of two to four letters to insure a quick ability to identify the sample investigation.

Code	Investigation
AA	Ambient Air
DS	Drum
EPB	Endpoint Location - Bottom (Excavation)
EPSW	Endpoint Location - Sidewall (Excavation)
FP	Free Product
IA	Indoor Air
IDW	Investigation Derived Waste (Soil Pile)
MW	Monitoring Well (Permanent)
SB	Soil Boring
SG	Staff Gauge (Stream Gauging)
SL	Sludge
SV	Soil Vapor Point
SVE	Soil Vapor Extraction Well
SW	Surface Water
TMW	Temporary Monitoring Well
TP	Test Pit (Excavated Material from Test Pit Not Associated With Sidewall or Bottom Samples)
WC	Waste Characterization Boring
COMP	Composite Sample
TB	Trip Blank (QA/QC Sampling – All Investigations)
FB	Field Blank (QA/QC Sampling – All Investigations)
DUP	Duplicate (QA/QC Sampling – All Investigations)

NN – Numeric Identifier

The two digit number that follows the sample investigation code (LL) identifies the specific sample based on the soil boring, monitoring well, endpoint or other location identification. For a subset of samples

where there is no specific location identifier, the two digit number is the sequence number for the sample submitted. For example, an aqueous sample from a monitoring well identified as MW-1 would have the sample investigation code of MW and the numeric identifier as 01. Note there is no hyphen. The same can be done for soil borings, a soil sample collected from soil boring 9 (SB-9) would be have the LLNN identification of SB09 (again, no hyphen).

Note however that there is a subset of samples related to laboratory analytical quality assurance, among these includes TB, FB, and DUP. On many investigations, the Scope will require multiple collections of these types of samples, therefore the numerical number represents the sequence sample count where the first sample is 01, the second sample is 02, and the third sample is 03 and so on.

_ Underscore
The underscore is required. It separates the investigation code and numeric identifier from the modifier specific to the sample itself. Note that every effort should be made to insure that the underscore is clear on the sample label and chain of custody (COC).

ID – Modifier Specific to Type Media
Each sample investigation code and numeric identifier is further modified by an ID specific to the sample type media. In general, soil samples (soil borings or endpoint samples) use an ID that indicates the depth at which the sample was taken. Aqueous samples (groundwater or surface water samples) are identified by the date the sample was collected. Other types of samples including quality control (TB, FB, and DUP), Vapor samples (AA, IA, SV or SVE), other soil type samples (IDW, sludge, free product, drum, and others) are also identified by a date. The following rules apply to the ID when using sample depth or sample date.

Sample Depth
The sample depth must be whole numbers (no fractions) separated by a hyphen. Thus for a soil sample collected from the soil boring SB-1 from a depth of 6 feet to 8 feet, the sample would be identified as:

SB01_6-8

Unfortunately, the NYSDEC EQuIS system does not accept fractions. Therefore, if your sample interval is a fraction of a foot (6.5-7.5), round up to the larger interval (6-8).

Sample Date
The sample date is always in the format of MMDDYY. Note that the year is two digits. Thus for a groundwater sample collected on July 1, 2015 from the monitoring well MW-1, the sample would be identified as:

MW01_070115

Special Cases
There are a couple of specific sample types that require further explanation.

Endpoint Sampling
End point sidewall samples are sometimes modified by magnetic direction (N, S, E, and W). For example, the first sidewall endpoint sample from the north wall of an excavation at a depth of 5 feet would be written as:

EPSW01_N_5

Again, note that the N in the identification refers to north and is separated from the prefix investigation code/numeric identifier and ID modifier suffix by underscores.

Vapor Extraction Well Sample
As with the sidewall endpoint samples, the sample name is altered by inserting a middle modifier between the prefix and suffix of the sample name. The middle modifier is used to identify the source of the sample (inlet sample port, midpoint sample port or outlet sample port). For example the midpoint port of the vapor extraction well number 1 sampled on July 1, 2015 would be written as;

SVE01_MID_070115

Matrix Spike and Matrix Spike Duplicate
On occasion, a Langan investigation will collect a sample to be used to provide the lab with a site specific medium to spike to determine the quality of the analytical method. This special case of sampling requires additional information to be used in the sample name, specifically, a suffix specifying whether the sample is the matrix spike (MS) or the matrix spike duplicate (MSD). In the following example, the sample is collected from soil boring number 1 at a depth of 2-4 feet. For the matrix spike sample:

SB01_2-4_MS

and for the matrix spike duplicate sample:

SB01_2-4_MSD

Multiple Interval Groundwater Sampling
Although not currently a common practice, low flow sampling facilitates stratigraphic sampling of a monitoring well. If the scope requires stratigraphic sampling then groundwater samples will be labeled with a lower case letter following the well number. For example, placing the pump or sampling tube at 10 feet below surface in MW01 on July 1, 2015 would require the sample to be labeled as:

MW01a_070115

While a second sample where the pump or tubing intake is placed at 20 feet would be labeled as:

MW01b_070115

Note that it is important that you record what depth the intake for each sample represents in your field notes; as this information is going to be critical to interpreting the results.

Attachment E

PFAS Sampling SOP

LANGAN

SOP #19: BEST PRACTICES FOR PFAS SAMPLING OF GROUNDWATER – APRIL 2019

This discussion is about best practices to assist you in groundwater sampling for Per- and Poly-Fluoro Alkyl Substances (PFAS). The current discussion surrounding PFAS sampling is long on assumption and short on research. As such, the best guidance is a discussion of best practices. Please review PFAS Sampling Best Practices (PFAS-SBP) in planning and implementing PFAS sampling activities. As more information becomes available, this best practices document will be updated. Be sure you are reviewing the most recent version when planning PFAS sampling activities. Copies of best practices will be stored on the server at \\langan.com\data\NYC\other\environmental group\SOPs\12 Low Flow Groundwater Sampling\PFAS Best Practices.

This version of PFAS-SBP will briefly discuss field safety and personal protection equipment (PPE), clothing and personal hygiene, sampling equipment, sampling documentation and labeling, and sampling procedure:

Safety:

Staff safety is still paramount. The following equipment must be donned at PFAS sampling events – no exceptions.

- All sites
  - Safety Glasses
  - Powderless Nitrile (no latex)
  - Safety Shoes – Note that safety shoes are commonly treated to be water-resistant or water proof with a PFAS type material, therefore, staff must don natural rubber overboots.

Figure 1 ONGUARD Disposable Natural Rubber Overshoe (Part No. 97591LG00 [large])[1]

[1] Available in the environmental closet

- Construction Sites
    - Langan Hardhat
    - Langan reflective vest (yellow reflective jacket not permitted for PFAS sampling)
    - Hearing protection as required.

Clothing and Personal Hygiene

As a first approximation, any clothing advertised as waterproof, water-repellant, or dirt and/or stain resistant should not be donned for PFAS sampling activities. In addition, clothing designed to block ultraviolet protection should also be avoided. Fabric Softeners and ant-static ingredients in clothing detergents should also be avoided.

Clothing from synthetic and natural fibers (cotton) are acceptable, as a precaution, do not wear new clothing into the field. Plain uncoated Tyvek™ is acceptable for use when sampling as it does not contain PFAS. Coated Tyvek™ is not acceptable as the suits are usually treated with PFAS type material unless deemed necessary with no alternative PPE from a health and safety perspective.

When sampling in cold weather, consider layers for warmth since most jackets are treated with waterproofing material. However, in the event of wet weather, please use the PVC rain gear (e.g. River City Garment 3-piece Rain Gear 35mm PVC/polyester suits [Part no. 5500009600 {large}]).[2]

The literature abounds with differing recommendations regarding personal hygiene products. In general, avoid hair and body wash products that include conditioning agents. Most important, if you have long hair, pin it back to avoid having to touch your hair with your hands during sampling activities.

There is a limited number of products available to meet field insect repellent (insect repellent with Deet or derived from100% organic ingredients) and sunscreen requirement when sampling for PFAS. A list of suitable products will be provided as they become available. When using approved insect repellent and sunscreen products, be sure to apply away from the sampling area and to wash your hands after applying.

As a side note, do not eat or consume beverages during sampling activities. When drinking beverages to avoid dehydration, do so away from the sampling area and remove your nitrile gloves. Don a new set of gloves after consuming the beverage. Consume all meals away from the sampling area, use wax paper where possible to wrap your meal. If purchasing your meal,

[2] Available in the environmental closet

consume off-site and wash your hand thoroughly after your meal to prevent transference of potential PFAS compounds from food packaging.

Sampling Equipment

- Pumps – In general, pumps (and other sampling equipment including the Solinst interface probe) having parts containing fluoropolymer and should be avoided where possible. The following pumps are acceptable.
    - Peristaltic is the best option when depth to water is less than 20-feet.
    - Bladder pumps (QED Sample Pro, or equivalent[3]) are the only currently available option to sample for PFAS when depth to water is greater than 20-feet.
    - Inertial pumps (Waterra, or equivalent) while suitable for PFAS sampling are not to be used because they are very difficult to operate within the proscribed flow rate defined in low flow sampling guidances. They also are unsuitable for VOC sampling if the sampling plan is coupled with traditional analytes.
    - *Three are no other submersible pumps (including Monsoon pumps) that have preliminary data to substantiate being PFAS-free and are readily available*.
- Tubing – In general, tubing containing fluoropolymers are prohibited.
    - Silicon tubing if permitted
    - High-density polyethylene (HDPE) tubing is permitted
    - Low-density polyethylene (LDPE) tubing is permissible by the US Navy and a limited number of other agencies (Michigan) but is still considered questionable by many state and local authorities including the NYSDEC. Therefore, its use should only be considered when an alternative is not available and prior approval from project managers and potentially regulators may be necessary. Further additional QA/QC samples are suggested when using this material.
- Note passive samples such as HydraSleeve samplers (made from LDPE) may be an option; however, regulatory approval should be obtained prior to sampling and may require additional QA/QC to prove they do not bias or effect sample results.
- If a piece of equipment containing fluoropolymer parts must be used (depth to water probes or interface probes (e.g. Solinst) or an acceptable alternative cannot be found, an equipment blank of that piece of equipment should be submitted for analysis as a QA/QC measure.

Sampling Documentation and Labeling

Documentation remains extremely important. There are general rules that apply to PFAS sampling:

[3] QED has provided company run test results demonstrating the Sample Pro is PFAS-free, currently there is no independent testing on sampling equipment. Only use pumps that have some laboratory basis for being PFAS-free.

- Use ballpoint pens and pencils to complete labels and record field notes. There is no consensus of Sharpie® markers, therefore, avoid completing labels with anything but ballpoint pens.
- Aluminum, Masonite and polypropylene (including Langan) clipboards are suitable for holding loose papers.
- There is no consensus around the suitability of "Rite-in-Rain"™ notebooks on PFAS sampling sites. Some states including Michigan do permit them but not the U.S. Navy. Until further information is available, do not use any types of waterproof field books during PFAS sampling. If you have a field map anointed with post-its, transfer the information to the map. Post-it, or any other adhesive paper pad is not suitable for PFAS sampling sites. Only use loose paper for written note taking.
- Standard practice should be to use a Langan tablet with the low flow sampling spreadsheet preloaded. It is recommended that you print out a number of hard copies of the spreadsheet should the tablet fail.
- Use lab supplied labels only.

Sampling Procedure

Langan will follow standard low flow procedures and stability criteria when sampling for PFAS. This applies to those sampling events where only PFAS is being evaluated as well as when traditional sampling follows PFAS sampling. Note that when doing combined sampling events (PFAS and traditional analytes), sample for PFAS first. Where possible every effort should be made to use disposal and dedicated equipment for each sample location to avoid potential cross contamination and limit errors and issues from inadequate decontamination between samples.

Gauging

Gauging data will not be collected on monitoring wells subject to PFAS sampling. As stated, the Solinst interface probe is not suitable for gauging depth to water during PFAS sampling. However, prior to the field event, field staff, senior staff and the PM will discuss an alternative strategy to collect site wide synoptic groundwater gauging data after PFAS sampling is completed.

Decon Station

Use the three bucket procedure for decontaminating the bladder pump prior to sampling the first monitoring well and directly before each subsequent well. All the buckets should be filled with DI water supplied by the lab and confirmed to be PFAS-free. In some instances, the lab may be unable or unwilling to supply the quantities of PFAS-free water necessary for

decontamination. If the lab will not supply the volume required, use the DI water supplied by Pine and submit a blank analysis of the decon water with your QA/QC samples. Alconox®, Liquinox® or Citranox® are the only decontamination solutions currently cleared for sampling PFAS. On sites where PFAS sampling is scheduled over multiple days, have enough proper decon water to mix a new solution each day. Decontaminating the night before is not acceptable.

Ideally, the decon station should be set up on thin plastic sheeting; but the only material available is LDPE. As such, the best practice is to lay out the LDPE sheet, then cover the work area with clean cotton rags (environmental closet) to place the decontaminated bladder pump on. Avoid placing the pump or any of its parts directly on the plastic. Also submit a rinse sample - separate from the field blank, with your QA/QC samples.

Sampling Set Up

At each step during set up and sampling, best practices require changing nitrile gloves between each step. Remember, any time you do something out of procedure such as writing a field note, answering the phone or pushing your hair aside, you risk transference unless you change gloves.

Stage the pump supporting equipment (compressor, battery, etc.), buckets, water quality meter (Horiba), lab coolers and other equipment at least 5-feet away from the open wellhead. Do not stage any unnecessary equipment or cases near the wellhead during sampling. If it isn't directly related to sampling the well in question, leave it staged in a central area away from the wellheads.

When inserting the tubing into the well, it's important to keep the tubing that will come in contact with the water table from coming into contact with the surrounding platform (concrete/asphalt/soil apron around the well) which can serve as a source of transference. This is especially difficult when using HDPE tubing. The best method is to patiently unroll off your arm into the well. Use PVC cutters to cut the tubing.

Connect the tubing to the water quality meter through a bridge of silicon tubing. This will give a bit of extra flexibility in setting up, especially on cold days.

Stability

There are two important items to remember during the period when you are tracking stability:

- Do not allow the pump to stop, backflow from the water quality meter can pose a

significant risk of cross contamination. If you must shut down, disconnect the pump to water quality meter feed line before turning off the pump.

- While you can fill out the labels (remember to change gloves), do not set up the sample bottles until you are ready to sample.

Sampling

- Once stability is achieved (or an hour has passed), change gloves again, then pull the pump to water quality meter tubing from the water quality meter, change gloves and begin collecting the samples.
- At a minimum, the PFAS sample bottles must be filled to container neck. Do not under fill.

- After sampling groundwater, you can allow the tubing to discharge to a bucket while you set up for PFAS field blanks. Change gloves, then prepare the field blanks.
    - Transfer the reagent water from the filled plastic container to the field blank container;
    - Both the empty Reagent Water container and the filled Field Blank container must be returned to the lab along with the samples taken.
- If the work plan is for sampling the standard suite of analytes (VOCs, SVOCs, etc.), then commence collecting those samples after completing the PFAS and PFAS field blank sampling.

Post Sampling

Place all disposable sampling material (tubing, discarded gloves, etc.) in a heavy duty garbage bag (environmental closet). Move pump to decon area. If using a bladder pump, decontaminate per instructions above. If using a peristaltic pump, change the silicon pump tubing using a new set of nitrile gloves. Then proceed to the next monitoring well location.

SOP 18 – BEST PRACTICES FOR PFAS SAMPLING IN SOIL – APRIL 2019

This discussion is about best practices to assist you in soil sampling for Per- and Poly-Fluoro Alkyl Substances (PFAS). Similar to groundwater sampling for PFAS, the current discussion surrounding PFAS sampling is long on assumption and short on research. As such, the best guidance is a discussion of best practices. Please review PFAS Sampling Best Practices (PFAS-SBP) in planning and implementing PFAS sampling activities. As more information becomes available, this best practices document will be updated. Be sure you are reviewing the most recent version when planning PFAS sampling activities. Copies of best practices will be stored on the server at \\langan.com\data\NYC\other\environmental group\SOPs\19 Best Practices for PFAS Sampling Soil.

This version of PFAS-SBP will briefly discuss field safety and personal protection equipment (PPE), clothing and personal hygiene, sampling equipment, sampling documentation and labeling, and sampling procedure:

Safety:

Staff safety is still paramount. The following equipment must be donned at PFAS sampling events – no exceptions.

- All sites
  - Safety Glasses
  - Powderless Nitrile (no latex)
  - Safety Shoes – Note that safety shoes are commonly treated to be water-resistant or water proof with a PFAS type material, therefore, staff must don natural rubber overboots.

Figure 1 ONGUARD Disposable Natural Rubber Overshoe (Part No. 97591LG00 [large])

- Construction Sites

[1] Available in the environmental closet

- Langan Hardhat
- Langan reflective vest, avoid yellow reflective jacket)
- Hearing protection as required.

Daily field notes should list the PPE donned when soil sampling.

Clothing and Personal Hygiene

As a first approximation, any clothing advertised as waterproof, water-repellant, or dirt and/or stain resistant should not be donned for PFAS sampling activities. In addition, clothing designed to block ultraviolet protection should also be avoided. Fabric Softeners and ant-static ingredients in clothing detergents should also be avoided.

Clothing from synthetic and natural fibers (cotton) are acceptable, as a precaution, do not wear new clothing into the field. Plain uncoated Tyvek™ is acceptable for use when sampling as it does not contain PFAS. Coated Tyvek™ is not acceptable as the suits are usually treated with PFAS type material unless deemed necessary with no alternative PPE from a health and safety perspective.

When sampling in cold weather, consider layers for warmth since most jackets are treated with waterproofing material. However, in the event of wet weather, please use the PVC rain gear (e.g. River City Garment 3-piece Rain Gear 35mm PVC/polyester suits [Part no. 5500009600 {large}]).[2]

The literature abounds with differing recommendations regarding personal hygiene products. In general, avoid hair and body wash products that include conditioning agents. Most important, if you have long hair, pin it back to avoid having to touch your hair with your hands during sampling activities.

There is a limited number of insect repellent and sunscreen products available in the marketplace that are suitable to don when sampling for PFAS. As of now, insect repellent with Deet or derived from100% organic ingredients material and water repellent sunscreen (as opposed to those advertised as withstanding a dip in a pool or will not succumb to sweat) are suitable for field work. A list of suitable products will be provided as they become available. When using approved insect repellent and sunscreen products, be sure to apply away from the sampling area and to wash your hands after applying.

As a side note, do not eat or consume beverages during sampling activities. When drinking

[2] Available in the environmental closet

beverages to avoid dehydration, do so away from the sampling area and remove your nitrile gloves. Don a new set of gloves after consuming the beverage. Consume all meals away from the sampling area, use wax paper where possible to wrap your meal. If purchasing your meal, consume off-site and wash your hand thoroughly after your meal to prevent transference of potential PFAS compounds from food packaging.

Drilling/Excavation Equipment

The principal of preventing cross contamination and the greatest challenge to sampling soil for PFAS compounds is the field practices of the drilling or excavation contractor. Currently, literature searches have not yielded insights into soil sampling for PFAS compounds. There is an equally lack of information on potential interference drilling and excavation practices can impact on PFAS analytical data. As such, the approach with regards to the drilling or excavation contractor is to insure they rigorously follow the approved decontamination practice. Attempting to implement additional controls on the drillers and excavation contractor at this time without significant independent assessment or refereed literature will undoubtable added significant additional cost with little substantiated benefit. Langan should modify the quality assurance/quality control (QA/QC) sampling to provide a context for assessing the resulting analytical PFAS soil data.

Sampling Equipment

When sampling soil for PFAS compounds, Langan's responsibility is to initiate a soil sampling protocol that prevents the cross contamination of soil from the moment the open direct push liner or split spoon is put under the field staff's preview. The bullets below specify several key components:

- Langan field staff should change out nitrile gloves with each liner;
- The putty knife or other tool being used in assessing volatile organic compounds (VOCs) in soil by creating a slice in the sample soil column must be thoroughly decontaminated with each liner;
- Prior to further disturbance of the recovered soil column for soil description, the grab sample for volatile organic compounds (VOCs) should be collected from that segment of the soil sample column exhibiting the highest PID in accordance with the requirements of the work plan;
- In addition and also prior to further disturbance of the recovered soil compound, the soil samples being submitted for analysis of PFAS compounds should be collected in such a manner that it doesn't include samples previously disturbed for assessing PID or collecting the grab samples for VOCs. Remember to follow the requirements of the work plan. Note that the sampler should change out nitrile gloves between collected

the grab sample for VOCs and the collecting the sample for PFAS.

- After collecting the grab sample for VOCs and the sample for PFAS compounds, Langan staff may proceed with the detail soil identification following Langan standards outlined in the Langan Field Investigation and Sampling Manual and instructions given in the Soil Identification Practical training; and
- After completing the soil identification description, Langan staff may proceed with collecting the remaining require soil samples in accordance with the work plan.

Sampling Documentation and Labeling

Documentation remains extremely important. There are general rules that apply to PFAS sampling:

- Use ballpoint pens and pencils to complete labels and record field notes. There is no consensus of Sharpie® markers, therefore, avoid completing labels with anything but ballpoint pens;
- Aluminum, Masonite and polypropylene (including Langan) clipboards are suitable for holding loose papers;
- There is no consensus around the suitability of "Rite-in-Rain"™ notebooks on PFAS sampling sites. Some states including Michigan do permit them but not the U.S. Navy. Until further information is available, avoid completing filling out any types of waterproof field books in the vicinity of the PFAS sampling. If you have a field map anointed with post-its, transfer the information to the map. Post-it, or any other adhesive paper pad is not suitable for PFAS sampling sites. Only use loose paper for written note taking; and
- Use lab supplied labels only.

Quality Assurance/Quality Control Sampling

A critical factor in understanding the soil analytical PFAS data is to gauge the possibility of interference. As such, the QA/QC requirements as they pertain to soil sampling might require modification. Best practices recommends the following:

- Duplicate soil samples for PFAS should be collected at the same rate as duplicate sampling for other parameters;
- Spike Matrix Sampling and Duplicate Spiked Matrix sampling should be collected at the same rate as similar sampling for other parameters;
- Separate PFAS Field Blanks should be incorporated into the Soil Field Blank Sampling program;
- The source of the driller rinse water (truck mounted tank or local water supply faucet)

should be sampled for PFAS analysis;

- A rinse sample collected from the cutting head of the sampling equipment should be collected for PFAS analysis following decontamination;
- The source of rinse water for the Langan decontamination process should also be collected for PFAS analysis;
- A rinse sample collected from the tool used to manipulate soil samples during PID assessment should also be submitted for PFAS analysis; and
- When preparing the PFAS field blank sample, remember to change gloves, then prepare the field blanks.
    - Transfer the reagent water from the filled plastic container to the field blank container;
    - Both the empty Reagent Water container and the filled Field Blank container must be returned to the lab along with the samples taken.

Post Sampling

Place all disposable sampling material in a heavy duty garbage bag (environmental closet). Move reusable sampling equipment to the decon staging area. Decontaminate per instructions above. Then proceed to the next soil sampling location.

APPENDIX D

COMMUNITY AIR MONITORING PLAN

New York State Department of Health Generic Community Air Monitoring Plan

A Community Air Monitoring Plan (CAMP) requires real-time monitoring for volatile organic compounds (VOCs) and particulates (i.e., dust) at the downwind perimeter of each designated work area and when certain activities are in progress at contaminated sites. The CAMP is not intended for use in establishing action levels for worker respiratory protection. Rather, its intent is to provide a measure of protection for the downwind community (i.e., off-site receptors including residences and businesses and on-site workers not directly involved with the subject work activities) from potential airborne contaminant releases as a direct result of investigative and remedial work activities. The action levels specified herein require increased monitoring, corrective actions to abate emissions, and/or work shutdown. Additionally, the CAMP helps to confirm that work activities did not spread contamination off-site through the air.

The generic CAMP presented below will be sufficient to cover many, if not most, sites. Specific requirements should be reviewed for each situation in consultation with NYSDOH to ensure proper applicability. In some cases, a separate site-specific CAMP or supplement may be required. Depending upon the nature of contamination, chemical specific monitoring with appropriately-sensitive methods may be required. Depending upon the proximity of potentially exposed individuals, more stringent monitoring or response levels than those presented below may be required. Special requirements will be necessary for work within 20 feet of potentially exposed individuals or structures and for indoor work with co-located residences or facilities. These requirements should be determined in consultation with NYSDOH.

Reliance on the CAMP should not preclude simple, common-sense measures to keep VOCs, dust, and odors at a minimum around the work areas.

Community Air Monitoring Plan

Depending upon the nature of known or potential contaminants at each site, real-time air monitoring for volatile organic compounds (VOCs) and/or particulate levels at the perimeter of the exclusion zone or work area will be necessary. Most sites will involve VOC and particulate monitoring; sites known to be contaminated with heavy metals alone may only require particulate monitoring. If radiological contamination is a concern, additional monitoring requirements may be necessary per consultation with appropriate NYSDEC/NYSDOH staff.

Continuous monitoring will be required for all ground intrusive activities and during the demolition of contaminated or potentially contaminated structures. Ground intrusive activities include, but are not limited to, soil/waste excavation and handling, test pitting or trenching, and the installation of soil borings or monitoring wells.

Periodic monitoring for VOCs will be required during non-intrusive activities such as the collection of soil and sediment samples or the collection of groundwater samples from existing monitoring wells. "Periodic" monitoring during sample collection might reasonably consist of taking a reading upon arrival at a sample location, monitoring while opening a well cap or overturning soil, monitoring during well baling/purging, and taking a reading prior to leaving a sample location. In some instances, depending upon the proximity of potentially exposed individuals, continuous monitoring may be required during sampling activities. Examples of such situations include groundwater sampling at wells on the curb of a busy urban street, in the midst of a public park, or adjacent to a school or residence.

VOC Monitoring, Response Levels, and Actions

Volatile organic compounds (VOCs) must be monitored at the downwind perimeter of the immediate work area (i.e., the exclusion zone) on a **continuous** bases or as otherwise specified. Upwind concentrations should be measured at the start of each workday and periodically thereafter to establish background conditions. The monitoring work should be performed using equipment appropriate to measure the types of contaminants known or suspected to be present. The equipment should be calibrated at least daily for the contaminant(s) of concern or for an appropriate surrogate. The equipment should be capable of calculating 15-minute running average concentrations, which will be compared to the levels specified below.

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area or exclusion zone exceeds 5 parts per million (ppm) above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.
- If total organic vapor levels at the downwind perimeter of the work area or exclusion zone persist at levels in excess of 5 ppm over background but less than 25 ppm, work activities must be halted, the source of vapors identified, corrective actions taken to abate emissions, and monitoring continued. After these steps, work activities can resume provided that the total organic vapor level 200 feet downwind of the exclusion zone or half the distance to the nearest potential receptor or residential/commercial structure, whichever is less – but in no case less than 20 feet, is below 5 ppm over background for the 15-minute average.
- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shutdown.

All 15-minute readings must be recorded and available for State (DEC and DOH) personnel to review. Instantaneous readings, if any, used for decision purposes should also be recorded.

Particulate Monitoring, Response Levels, and Actions

Particulate concentrations should be monitored **continuously** at the upwind and downwind perimeters of the exclusion zone at temporary particulate monitoring stations. The particulate monitoring should be performed using real-time monitoring equipment capable of measuring particulate matter less than 10 micrometers in size (PM-10) and capable of integrating over a period of 15 minutes (or less) for comparison to the airborne particulate action level. The equipment must be equipped with an audible alarm to indicate exceedance of the action level. In addition, fugitive dust migration should be visually assessed during all work activities.

- If the downwind PM-10 particulate level is 100 micrograms per cubic meter (mcg/m3) greater than background (upwind perimeter) for the 15-minute period or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM-10 particulate levels do not exceed 150 mcg/m3 above the upwind level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, downwind PM-10 particulate levels are greater than 150 mcg/m^3 above the upwind level, work must be stopped and a re-evaluation of activities initiated. Work can resume provided that dust suppression measures and other

controls are successful in reducing the downwind PM-10 particulate concentration to within 150 mcg/m3 of the upwind level and in preventing visible dust migration.

All readings must be recorded and be available for State (DEC and DOH) personnel to review.

Special Requirements for Work Within 20 Feet of Potentially Exposed Individuals or Structures

When work areas are within 20 feet of potentially exposed populations or occupied structures, the continuous monitoring locations for VOCs and particulates must reflect the nearest potentially exposed individuals and the location of ventilation system intakes for nearby structures. The use of engineering controls such as vapor/dust barriers, temporary negative-pressure enclosures, or special ventilation devices should be considered to prevent exposures related to the work activities and to control dust and odors. Consideration should be given to implementing the planned activities when potentially exposed populations are at a minimum, such as during weekends or evening hours in non-residential settings.

- If total VOC concentrations opposite the walls of occupied structures or next to intake vents exceed 1 ppm, monitoring should occur within the occupied structure(s). Background readings in the occupied spaces must be taken prior to commencement of the planned work. Any unusual background readings should be discussed with NYSDOH prior to commencement of the work.
- If total particulate concentrations opposite the walls of occupied structures or next to intake vents exceed 150 mcg/m3, work activities should be suspended until controls are implemented and are successful in reducing the total particulate concentration to 150 mcg/m3 or less at the monitoring point.
- Depending upon the nature of contamination and remedial activities, other parameters (e.g., explosivity, oxygen, hydrogen sulfide, carbon monoxide) may also need to be monitored. Response levels and actions should be pre-determined, as necessary, for each site.

Special Requirements for Indoor Work with Co-Located Residences or Facilities

Unless a self-contained, negative-pressure enclosure with proper emission controls will encompass the work area, all individuals not directly involved with the planned work must be absent from the room in which the work will occur. Monitoring requirements shall be as stated above under "Special Requirements for Work Within 20 Feet of Potentially Exposed Individuals or Structures" except that in this instance "nearby/occupied structures" would be adjacent occupied rooms. Additionally, the location of all exhaust vents in the room and their discharge points, as well as potential vapor pathways (openings conduits, etc.) relative to adjoining rooms, should be understood and the monitoring locations established accordingly. In these situations, it is strongly recommended that exhaust fans or other engineering controls be used to create negative air pressure within the work area during remedial activities. Additionally, it is strongly recommended that the planned work be implemented during hours (e.g. weekends or evenings) when building occupancy is at a minimum.

APPENDIX E

DELINEATION OF NAPL CONTAMINATION GENERAL GUIDANCE

Delineation of NAPL Contamination in Soil

Soil borings shall be advanced north, south, east, and west in the horizontal direction from all soil borings where NAPL has been observed. To ensure vertical delineation of NAPL, the new borings will be advanced to a minimum depth of where NAPL was observed in borings performed in the initial investigation. Final soil boring depths will be determined based on field observations using the NAPL Field Descriptions (attached). If NAPL is not observed at the minimum required depth, no further advancement of the boring is required. If NAPL is observed, the boring will be advanced until vertical delineation of NAPL has been determined. For soil borings where NAPL has been observed, grab soil samples will be collected at and immediately below each distinct interval of NAPL/GCM and will be analyzed for the full suite TCL/TAL. All preliminary analytical results and draft soil boring logs will be submitted to NYSDEC to facilitate review of delineation.

If NAPL is identified in soil borings noted above, additional investigation will be required to delineate the full extent of NAPL. Soil borings shall be advanced north, south, east, and west in the horizontal direction from soil borings where NAPL was observed. To ensure vertical delineation of NAPL, the new borings will be advanced to a minimum depth of where NAPL was observed. Final soil boring depths will be determined based on field observations of using the NAPL Field Descriptions (attached). If NAPL is not observed at the minimum required depth, no further advancement of the boring is required. If NAPL is observed, the boring will be advanced until vertical delineation of NAPL has been determined. For soil borings where NAPL has been observed, grab soil samples will be collected at and immediately below each distinct interval of NAPL and will be analyzed for the full suite TCL/TAL. All preliminary analytical results and draft soil boring logs will be submitted to NYSDEC to facilitate review of delineation. Delineation will only be deemed completed upon receipt of NYSDEC concurrence and approval.

Delineation of Contamination in Groundwater

To delineate groundwater contamination associated with NAPL, monitoring wells will be installed at soil boring locations directly downgradient of where NAPL is observed. Monitoring wells will be installed and screened at the groundwater interface and below the deepest observation of NAPL. Monitoring wells will be installed in accordance with the NYSDEC Guidelines on Installation of Overburden Wells (Monitoring Wells) for Environmental Investigations. Any observations of sheen, blebs, free-phase product/tar, staining or coating of the sampling equipment, odor, etc. made during sampling of groundwater are to be included in the groundwater sample collection log. If NAPL is observed in the well at the time of sampling, NAPL thickness will be documented in sampling logs and NAPL will be removed prior to groundwater sample collection.

A synoptic groundwater elevation gauging event must be performed following the installation and development of groundwater monitoring wells. Monitoring well locations will be surveyed by a licensed surveyor and tied into the NAVD88 datum. Monitoring well construction data, groundwater elevation, and surveyed locations in NAVD88 will be submitted electronically to the NYSDEC EQuIS database. All preliminary analytical results and draft groundwater sampling logs will be submitted to NYSDEC as soon as they are available to facilitate a timely review of delineation. Delineation will only be deemed completed upon receipt of NYSDEC approval.

NAPL Field Descriptions

SOIL SAMPLE DESCRIPTIONS

It is important that descriptive qualifiers are consistently used to characterize degree and nature of contaminant impacts and visual-manual soil classification. The following presents some examples of descriptive qualifiers.

SOIL LOGGING

• All soils are to be logged using the **Unified Soil Classification** (ASTM D 2488 field descriptions)

• **PID or FID** used to screen all soil samples (Jar Headspace method) – maximum readings should be recorded and included on the logs. The PID/FID should be calibrated daily at a minimum

• **Moisture terms** are: Dry, Moist, and Wet

• **Color terms** - use geotechnical color charts - colors may be combined: e.g. red-brown. Color terms should be used to describe the "natural color" of the sample as opposed to staining caused by contamination (see below)

• **Log of each sample interval** should be prepared as follows:

[Coarse Grained Example] NARROWLY GRADED SAND (SP); mostly fine sand; <5% fines; red-brown, moist, environmental/depositional/geologic descriptions.

[Fine Grained Example] SANDY SILT (ML); heterogeneous till structure, nonplastic, ~30% fine to coarse, subangular sand; ~10% subangular fine gravel, max. size ~ 10 mm; brown; environmental/depositional/geologic descriptions.

• **Representativeness** – Soil logs should include particular notes if the field representative believes that there is a possibility that the soil sample being described is not representative of the interval sampled.

• **Intervals for Description** – if using a 2' (split spoon) or 4' (Macro-core) long sampler – the field description should not necessarily be for the entire sample interval. It is important to look for, identify, and describe small-scale units and changes within each sample interval.

DESCRIPTION OF CONTAMINANTS

Visible Contamination Descriptors

• **Sheen** - iridescent petroleum-like sheen. Not to be used to describe a "bacterial sheen", which can be distinguished by its tendency to break up on the water surface at angles, whereas a petroleum sheen will be continuous and will not break up. A field test for sheen is to put a soil sample in a jar of water and shake the sample (jar shake test) , then observe the presence/absence of sheen on the surface of the water in the jar.

• **Stained** - used w/ color (i.e. black or brown stained) to indicate that the soil matrix is stained a color other than the natural (unimpacted) color of the soil.

• **Coated** - soil grains are coated with tar/free product – there is not sufficient free-phase material present to saturate the pore spaces. The degree of coating should be described as light, moderate, or heavy.

• **Blebs** - observed discrete sphericals of tar/free product - but for the most part the soil matrix was not visibly contaminated or saturated. Typically this is residual product. The estimated size and number of blebs should be reported.

• **Saturated** - the entirety of the pore space for a sample is saturated with the tar/free product. Care should be taken to ensure that you're not observing water saturating the pore spaces if you use this term. Depending on viscosity, tar/free-phase saturated materials may freely drain from a soil sample.

• **Oil** - Used to characterize free and/or residual product that exhibits a distinct fuel oil or diesel fuel like odor; distinctly different from MGP-related odors/impacts.

• **Tar** - Used to describe free and/or residual product that exhibits a distinct "coal tar" type odor (e.g. naphthalene-like odor). Colors of product can be brown, black, reddish-brown, or gold.

• **Solid Tar** - Used to describe product that is solid or semi-solid phase. The magnitude of the observed solid tar should be described (e.g. discrete granules or a solid layer).

• **Purifier Material** - Purifier material is commonly brown/rust or blue/green wood chips or granular material. It is typically associated with a distinctive sulfur-like odor. Other colors may be present.

Olfactory Descriptors

• Use terms such as " tar-like odor" or "naphthalene-like odor" or "fuel oil-like odor" that provide a qualitative description (opinion) as to the possible source of the odor.

• Use modifiers such as strong, moderate, faint to indicate intensity of the observed odor.

DNAPL/LNAPL

- A jar shake test should be performed to identify and determine whether observed tar/free phase product is either denser or lighter than water. In addition, MGP residues can include both light and dense phases - this test can help determine if both light and dense phase materials are present at a particular location.

Viscosity of Free-Phase Product – If free-phase product/tar is present a qualitative description of viscosity should be made. Use descriptors such as:

- Highly viscous (e.g. taffy-like)
- Viscous (e.g. No. 6 fuel oil or bunker crude like)
- Low viscosity (e.g. No. 2 fuel oil like)

GROUNDWATER SAMPLING OBSERVATIONS

- Any observations of sheen, blebs, free-phase product/tar, staining or coating of the sampling equipment, odor, etc. that made during sampling of groundwater are to be included in the groundwater sample collection log.

Standard Colors for Reporting NAPL Impacts

	RGB Color	Auto Cad Index
TAR SATURATED	255,0,0	10
COATED MATERIAL, LENSES	255,0,255	210
HARDENED TAR	129,64,0	34
BLEBS, GLOBS, SHEEN	255,191,0	40
STAINING, ODOR	255,255,0	50
PETROLEUM IMPACTS SATURATION & SHEENS	0,191,255	140
PETROLEUM IMPACTS STAINING & ODORS	170,234,255	141
PURIFIER WASTE AND ODOR	0,0,255	170
NO OBSERVED IMPACTS	0,165,0	92